



Program Guide

PLEASE NOTE: The conference will run in the Eastern time zone

To locate your presentation:

- Refer to the Oral Presenters list or Poster Presenters list for your name and page number of your listing(s).
- Locate the page in the program-by-day pages.



Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
A									
Abdul Jabbar, M.	27-Jan	2:10PM	Grand Ballroom Salons 1/2	48	Bowen, J.	25-Jan	11:00AM	Ponce de Leon	29
Abe, H.	26-Jan	1:30PM	Coquina Salon C	41	Brandt, O.	26-Jan	9:50AM	Grand Ballroom Salon 5	37
Abraham, D.	26-Jan	10:20AM	Grand Ballroom Salons 7/8	35	Brandt, T.G.	24-Jan	2:30PM	Grand Ballroom Salons 7/8	10
Abram, A.	25-Jan	4:50PM	Grand Ballroom Salon 4	25	Braun, M.	28-Jan	9:30AM	Coquina Salon E	60
Abu Al-Rub, R.K.	25-Jan	11:20AM	Coquina Salon C	25	Brette, F.	26-Jan	9:00AM	Coquina Salon F	39
Abufarsakh, R.	25-Jan	4:40PM	Coquina Salon A	27	Brummerstedt Iversen, B.	27-Jan	11:40AM	Ponce de Leon	57
Ackley, B.J.	25-Jan	9:20AM	Ponce de Leon	29	Brune, P.	26-Jan	9:40AM	Flagler A/B	43
Adelhelm, P.	25-Jan	3:05PM	Grand Ballroom Salons 7/8	20	Burke, P.	25-Jan	8:30AM	Grand Ballroom Salons 1/2	18
Agarwal, A.	25-Jan	11:20AM	Grand Ballroom Salon 5	20	C				
Ahn, C.	27-Jan	9:50AM	Grand Ballroom Salon 5	52	Cakir, D.	26-Jan	8:30AM	Coquina Salon F	38
Akedo, J.	25-Jan	9:30AM	Coquina Salon D	15	Caram, J.R.	27-Jan	2:00PM	Coquina Salon E	56
Akono, A.	25-Jan	9:00AM	Coquina Salon A	26	Casalegno, V.	24-Jan	2:00PM	Grand Ballroom Salon 4	13
Akono, A.	25-Jan	4:00PM	Coquina Salon A	27	Castro, R.	27-Jan	9:00AM	Coquina Salon F	58
Akono, A.	27-Jan	10:10AM	Coquina Salon B	50	Cesarano, J.	26-Jan	8:45AM	Coquina Salon C	41
Al-Chaar, G.K.	26-Jan	11:00AM	Coquina Salon A	42	Chadha, V.	25-Jan	3:20PM	Coquina Salon A	27
Al-Jaljouli, F.	25-Jan	11:30AM	Grand Ballroom Salons 7/8	19	Chahhou, B.	24-Jan	3:40PM	Coquina Salon F	12
Alazzawi, M.K.	27-Jan	11:40AM	Coquina Salon C	54	Chang, C.	27-Jan	11:20AM	Grand Ballroom Salons 1/2	48
Aliouat, A.	27-Jan	11:40AM	Coquina Salon F	59	Chaput, C.	27-Jan	4:20PM	Coquina Salon C	54
Allan, S.M.	27-Jan	3:40PM	Coquina Salon C	54	Chari, C.S.	26-Jan	10:30AM	Coquina Salon E	33
Allen, A.J.	25-Jan	10:20AM	Coquina Salon C	25	Cheenady, A.	27-Jan	4:20PM	Coquina Salon G	50
Almansour, A.S.	26-Jan	10:40AM	Coquina Salon B	33	Chen, K.	24-Jan	2:40PM	Coquina Salon E	10
Alzeer, M.	26-Jan	2:30PM	Coquina Salon A	42	Chen, R.	27-Jan	2:30PM	Ponce de Leon	57
Amano, T.	27-Jan	10:50AM	Grand Ballroom Salon 4	58	Chen, S.	27-Jan	1:30PM	Coquina Salon B	50
Anderson, K.	26-Jan	11:50AM	Flagler A/B	44	Chen, Z.	27-Jan	1:30PM	Coquina Salon C	54
Andrews, J.	27-Jan	2:30PM	Coquina Salon B	51	Chevalier, J.	27-Jan	3:30PM	Coquina Salon B	51
Arregui-Mena, J.D.	24-Jan	2:20PM	Grand Ballroom Salon 4	13	Cheyne, M.	25-Jan	10:20AM	Ponce de Leon	29
Asakuma, N.	25-Jan	9:00AM	Ponce de Leon	29	Chiyoda, T.	27-Jan	5:00PM	Grand Ballroom Salon 5	52
Asghar, M.	27-Jan	9:20AM	Grand Ballroom Salons 1/2	48	Choi, H.	26-Jan	2:30PM	Coquina Salon H	36
Azina, C.	25-Jan	1:30PM	Coquina Salon F	23	Chou, Y.	24-Jan	5:10PM	Grand Ballroom Salons 1/2	10
B					Chou, Y.	26-Jan	3:10PM	Grand Ballroom Salons 1/2	34
Badr, H.O.	26-Jan	4:40PM	Coquina Salon H	37	Christensen, V.	26-Jan	11:40AM	Coquina Salon B	33
Badran, A.	25-Jan	4:40PM	Coquina Salon B	17	Christian, K.	27-Jan	2:40PM	Coquina Salon G	50
Bafti, A.	26-Jan	3:20PM	Coquina Salon A	42	Chu, N.M.	26-Jan	5:00PM	Grand Ballroom Salon 5	38
Bagci, C.	25-Jan	10:40AM	Coquina Salon A	26	Chu, Y.	26-Jan	10:20AM	Flagler A/B	43
Bakardjiev, J.	25-Jan	8:30AM	Coquina Salon B	16	Chung, S.	27-Jan	2:30PM	Coquina Salon F	59
Balagna, C.	24-Jan	1:40PM	Coquina Salon C	8	Chung, Y.	25-Jan	9:20AM	Coquina Salon H	21
Balaya, P.	25-Jan	10:50AM	Coquina Salon D	15	Gillessen, D.	26-Jan	8:30AM	Coquina Salon C	41
Balazsi, C.	25-Jan	10:50AM	Grand Ballroom Salon 5	20	Ciurans Oset, M.	24-Jan	4:20PM	Coquina Salon B	9
Balazsi, C.	26-Jan	2:00PM	Coquina Salon D	32	Clarkson, C.	24-Jan	4:00PM	Coquina Salon G	14
Balazsi, K.	25-Jan	9:00AM	Coquina Salon D	15	Cokic, S.	24-Jan	3:40PM	Coquina Salon B	9
Ballikaya, S.	27-Jan	10:40AM	Coquina Salon H	51	Collier, V.	26-Jan	11:00AM	Coquina Salon B	33
Ban, C.	26-Jan	11:30AM	Grand Ballroom Salons 7/8	35	Colombo, P.	24-Jan	5:00PM	Coquina Salon D	8
Barbot, J.	27-Jan	12:40PM	Ponce de Leon	57	Colombo, P.	27-Jan	10:30AM	Coquina Salon A	5
Bärmann, P.	25-Jan	9:10AM	Coquina Salon F	23	Colorado L., H.A.	26-Jan	10:50AM	Coquina Salon G	44
Barsoum, M.	25-Jan	8:30AM	Coquina Salon F	23	Colorado L., H.A.	27-Jan	4:30PM	Coquina Salon A	55
Barth, S.	24-Jan	2:00PM	Ponce de Leon	15	Corsi, F.	24-Jan	1:30PM	Coquina Salon G	14
Bavdekar, S.	26-Jan	2:00PM	Flagler C	38	Costa, G.	24-Jan	4:30PM	Grand Ballroom Salon 4	13
Behler, J.	26-Jan	9:20AM	Flagler C	38	Costakis, W.J.	26-Jan	2:00PM	Coquina Salon C	41
Belmonte, M.	25-Jan	10:20AM	Grand Ballroom Salon 5	20	Cox, B.	26-Jan	10:20AM	Coquina Salon C	41
Benetti, D.	27-Jan	5:10PM	Coquina Salon E	56	Cramer, C.L.	25-Jan	1:30PM	Ponce de Leon	30
Berardan, A.	27-Jan	9:30AM	Ponce de Leon	56	Cui, B.	26-Jan	11:30AM	Grand Ballroom Salon 5	37
Bernard, S.	26-Jan	3:20PM	Ponce de Leon	45	Cui, B.	26-Jan	11:30AM	Flagler A/B	43
Bernardo, E.	25-Jan	11:10AM	Coquina Salon H	21	Curtarolo, S.	24-Jan	1:30PM	Flagler A/B	13
Bernardo, E.	25-Jan	4:10PM	Ponce de Leon	30	D				
Bernardo, E.	26-Jan	3:20PM	Grand Ballroom Salon 5	37	Dahl, S.	25-Jan	2:20PM	Coquina Salon G	29
Bernardo, E.	27-Jan	1:30PM	Coquina Salon A	55	Dahlqvist, M.	26-Jan	9:20AM	Coquina Salon F	39
Bespalko, Y.N.	26-Jan	9:00AM	Grand Ballroom Salons 1/2	34	Dancer, C.E.	26-Jan	10:50AM	Grand Ballroom Salons 7/8	35
Bespalko, Y.N.	26-Jan	3:50PM	Coquina Salon H	36	Das, S.	25-Jan	10:30AM	Flagler A/B	27
Bhardwaj, A.	26-Jan	2:00PM	Coquina Salon H	36	Dash, A.	25-Jan	3:50PM	Grand Ballroom Salon 5	21
Bhatnagar, P.	27-Jan	3:00PM	Ponce de Leon	57	Davey, T.	25-Jan	11:10AM	Flagler C	22
Bhattacharjee, A.	27-Jan	3:50PM	Coquina Salon G	50	Davidson, J.	25-Jan	4:10PM	Grand Ballroom Salon 4	25
Bianco Atria, G.A.	24-Jan	2:20PM	Flagler A/B	14	De La Pierre, S.	26-Jan	1:50PM	Grand Ballroom Salon 4	39
Bice, J.	27-Jan	2:40PM	Coquina Salon C	54	De Marzi, A.	25-Jan	2:00PM	Coquina Salon C	26
Bishop, O.	26-Jan	4:00PM	Grand Ballroom Salon 5	38	Deijkers, J.	25-Jan	9:00AM	Coquina Salon G	28
Bishop, S.	25-Jan	10:20AM	Coquina Salon B	16	Delmas, C.	24-Jan	1:30PM	Grand Ballroom Salons 7/8	10
Blatt, N.H.	24-Jan	4:10PM	Grand Ballroom Salon 4	13	Delvasto, S.	25-Jan	2:10PM	Coquina Salon H	22
Bordia, R.	25-Jan	10:20AM	Coquina Salon D	15	Derby, B.	26-Jan	11:20AM	Coquina Salon C	41
Bordia, R.	26-Jan	2:30PM	Coquina Salon F	45	Dey, M.	24-Jan	5:20PM	Coquina Salon F	13
Bourjol, M.	27-Jan	8:30AM	Coquina Salon C	54	Dickerson, M.B.	26-Jan	2:20PM	Coquina Salon G	44

Presenting Author List

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
DiGiovanni, A.A.	27-Jan	10:20AM	Coquina Salon G	49	Grant, L.O.	25-Jan	11:20AM	Coquina Salon G	28
Dillon, S.J.	26-Jan	3:50PM	Coquina Salon F	46	Gromada, M.	24-Jan	4:40PM	Grand Ballroom Salon 5	11
Do, T.	25-Jan	11:50AM	Grand Ballroom Salon 5	20	Grosse, M.K.	25-Jan	1:30PM	Grand Ballroom Salon 4	24
Doan-Nguyen, V.	25-Jan	10:20AM	Coquina Salon G	28	Gruber, J.	25-Jan	1:30PM	Coquina Salon A	27
Dogdibegovic, E.	24-Jan	2:30PM	Grand Ballroom Salons 1/2	10	Gruber, M.	26-Jan	9:30AM	Coquina Salon B	32
Dokko, K.	26-Jan	3:40PM	Grand Ballroom Salons 7/8	35	Guillon, O.	25-Jan	4:30PM	Grand Ballroom Salon 5	21
Dong, Y.	27-Jan	11:10AM	Coquina Salon F	59	Gupta, A.	24-Jan	2:20PM	Coquina Salon B	9
Dubois, D.	25-Jan	2:20PM	Grand Ballroom Salon 5	21	Gupta, S.	26-Jan	10:10AM	Coquina Salon F	39
Dubois, S.	25-Jan	3:50PM	Coquina Salon F	24	Gupta, S.	26-Jan	2:30PM	Coquina Salon D	32
Duffy, J.H.	26-Jan	9:40AM	Grand Ballroom Salons 1/2	34					
Dziike, F.	27-Jan	10:30AM	Coquina Salon B	50					
		E							
Echols, I.	25-Jan	2:20PM	Coquina Salon F	23	Ha, D.	25-Jan	2:00PM	Coquina Salon F	23
El Rassi, J.	25-Jan	2:20PM	Coquina Salon B	17	Hagelüken, L.	25-Jan	11:20AM	Ponce de Leon	30
Ellawala Kankanamge, C.	27-Jan	8:30AM	Grand Ballroom Salon 5	51	Hagen, A.	27-Jan	10:50AM	Grand Ballroom Salons 1/2	48
Emdadi, A.	25-Jan	3:40PM	Flagler C	23	Hahn, Y.	27-Jan	8:40AM	Coquina Salon H	51
Epifani, M.	26-Jan	4:20PM	Coquina Salon E	43	Halbig, M.C.	24-Jan	4:00PM	Coquina Salon D	8
Epting, W.K.	25-Jan	3:20PM	Grand Ballroom Salons 1/2	19	Hamilton, S.R.	24-Jan	3:50PM	Grand Ballroom Salon 4	13
Erdemir, A.	27-Jan	10:20AM	Grand Ballroom Salon 5	52	Hammood, I.	24-Jan	3:50PM	Flagler A/B	14
Ericks, A.R.	25-Jan	1:50PM	Coquina Salon E	18	Han, N.	25-Jan	4:20PM	Coquina Salon B	17
Eskandariyun, A.	25-Jan	2:00PM	Grand Ballroom Salon 5	21	Hao, Q.	27-Jan	4:40PM	Ponce de Leon	57
Evdokimov, P.	27-Jan	2:10PM	Coquina Salon B	50	Harder, B.J.	26-Jan	8:40AM	Coquina Salon E	33
		F			Hasebe, S.	27-Jan	11:10AM	Grand Ballroom Salon 4	58
Faber, K.	26-Jan	1:30PM	Coquina Salon G	44	Hashima, S.	27-Jan	9:40AM	Coquina Salon C	54
Fahrenheitz, W.	25-Jan	1:30PM	Flagler A/B	28	He, J.	27-Jan	4:10PM	Ponce de Leon	57
Fan, Y.	25-Jan	4:50PM	Flagler C	23	He, M.	27-Jan	2:00PM	Coquina Salon G	49
Fanchini, G.	28-Jan	8:30AM	Coquina Salon E	59	He, M.	27-Jan	2:20PM	Coquina Salon G	50
Feltrin, A.C.	26-Jan	9:00AM	Flagler A/B	43	He, P.	27-Jan	8:30AM	Coquina Salon A	55
Feng, L.	24-Jan	4:30PM	Flagler A/B	14	Hedgecock, R.	25-Jan	9:50AM	Flagler A/B	27
Feng, L.	26-Jan	12:10PM	Flagler A/B	44	Heintz, J.	24-Jan	1:30PM	Grand Ballroom Salon 5	11
Fernandez, A.M.	25-Jan	9:30AM	Coquina Salon A	26	Heinz, M.V.	25-Jan	1:30PM	Grand Ballroom Salons 7/8	20
Ferraris, M.	26-Jan	3:20PM	Coquina Salon D	32	Hemmer, E.	26-Jan	1:30PM	Coquina Salon E	43
Fey, T.	25-Jan	9:40AM	Coquina Salon H	21	Hirai, T.	27-Jan	1:30PM	Flagler A/B	53
Fikry, M.	27-Jan	10:30AM	Grand Ballroom Salon 4	57	Hlavacek, P.	27-Jan	9:30AM	Coquina Salon A	55
Finsterbusch, M.	25-Jan	9:00AM	Grand Ballroom Salons 7/8	19	Hofer, A.	25-Jan	9:20AM	Coquina Salon C	25
Flint, M.N.	26-Jan	4:10PM	Grand Ballroom Salons 7/8	35	Holgate, C.S.	25-Jan	3:50PM	Coquina Salon E	18
Flores Martinez, N.	24-Jan	4:20PM	Grand Ballroom Salon 5	11	Hoshino, T.	27-Jan	1:30PM	Grand Ballroom Salon 5	52
Fordham, R.	24-Jan	2:00PM	Coquina Salon G	14	Huang, K.	24-Jan	4:00PM	Grand Ballroom Salons 1/2	10
Förster, J.E.	25-Jan	3:50PM	Flagler A/B	28	Huang, O.D.	25-Jan	4:20PM	Coquina Salon A	27
Fouliard, Q.	24-Jan	2:00PM	Coquina Salon E	9	Huang, O.D.	26-Jan	10:20AM	Coquina Salon A	42
Franchin, G.	27-Jan	9:00AM	Coquina Salon A	55	Hwang, C.	27-Jan	1:30PM	Coquina Salon G	49
Franchin, G.	27-Jan	10:20AM	Coquina Salon C	54					
Frandsen, H.L.	26-Jan	4:00PM	Grand Ballroom Salons 1/2	35					
Freiss, M.	26-Jan	10:50AM	Ponce de Leon	45					
Froitzheim, J.	26-Jan	2:10PM	Grand Ballroom Salons 1/2	34					
Fu, Z.	27-Jan	9:00AM	Coquina Salon D	47					
Fuka, M.	26-Jan	11:10AM	Coquina Salon G	44					
Fukushima, M.	24-Jan	3:50PM	Coquina Salon H	12					
Fukushima, M.	26-Jan	11:20AM	Coquina Salon D	32					
Furlan, K.P.	24-Jan	2:30PM	Coquina Salon H	12					
		G							
Gaffin, N.	24-Jan	5:10PM	Grand Ballroom Salon 4	13					
Gager, E.	25-Jan	1:50PM	Coquina Salon H	22					
Garg, N.	28-Jan	9:00AM	Coquina Salon A	59					
Gauzere, L.	24-Jan	5:00PM	Grand Ballroom Salon 5	11					
Ghuman, K.K.	25-Jan	10:40AM	Flagler C	22					
Gietl, H.	26-Jan	2:30PM	Grand Ballroom Salon 4	40					
Giorgi, G.	25-Jan	9:00AM	Flagler C	22					
Giorgi, G.	25-Jan	4:30PM	Flagler C	23					
Giuntini, D.	25-Jan	8:50AM	Coquina Salon B	16					
Giuntini, D.	26-Jan	2:40PM	Coquina Salon G	44					
Giuntini, D.	28-Jan	9:00AM	Coquina Salon F	60					
Godbole, E.P.	25-Jan	4:10PM	Coquina Salon E	18					
Goldberg, R.K.	26-Jan	1:50PM	Coquina Salon B	33					
Gómez Gómez, A.	25-Jan	2:00PM	Coquina Salon G	29					
Gonzalez-Julian, J.	24-Jan	4:00PM	Coquina Salon F	12					
Gopalan, S.	26-Jan	10:50AM	Grand Ballroom Salons 1/2	34					
Goyer, J.N.	25-Jan	3:30PM	Flagler A/B	28					
		H							
		I							
		J							

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Jerred, N.D.	24-Jan	3:20PM	Grand Ballroom Salon 4	13	Kurley, J.M.	25-Jan	4:30PM	Flagler A/B	28
Ji Hwoan, L.	27-Jan	8:30AM	Flagler A/B	53	Kusnezoff, M.	24-Jan	2:50PM	Grand Ballroom Salons 1/2	10
Ji Hwoan, L.	27-Jan	9:30AM	Grand Ballroom Salon 5	51	Kusnezoff, M.	25-Jan	10:40AM	Grand Ballroom Salons 1/2	18
Ji, S.	26-Jan	2:50PM	Coquina Salon H	36	Kusnezoff, M.	26-Jan	1:50PM	Grand Ballroom Salons 1/2	34
Jiang, S.	24-Jan	4:30PM	Coquina Salon D	8					
Jin, L.	25-Jan	4:00PM	Coquina Salon G	29			L		
Jones, G.M.	25-Jan	3:30PM	Coquina Salon G	29	Lai, J.	27-Jan	3:10PM	Coquina Salon B	51
Jonsson, N.E.	25-Jan	4:50PM	Coquina Salon E	18	Laine, R.M.	25-Jan	9:40AM	Ponce de Leon	29
Joo, J.	25-Jan	3:50PM	Grand Ballroom Salons 1/2	19	Laine, R.M.	26-Jan	2:30PM	Ponce de Leon	45
Jung, Y.	25-Jan	10:20AM	Grand Ballroom Salons 7/8	19	Lambrinou, K.	24-Jan	1:30PM	Grand Ballroom Salon 4	13
Juste, E.	24-Jan	3:50PM	Grand Ballroom Salon 5	11	Lambrinou, K.	25-Jan	10:50AM	Coquina Salon F	23
					Lancellotti, I.	27-Jan	2:00PM	Coquina Salon A	55
					LaSalvia, J.	27-Jan	10:40AM	Coquina Salon G	49
					Lauer, P.E.	26-Jan	9:20AM	Coquina Salon E	33
					Laurencin, J.	25-Jan	4:20PM	Grand Ballroom Salons 1/2	19
					Le Ferrand, H.	26-Jan	8:50AM	Coquina Salon G	44
					Le Ferrand, H.	26-Jan	3:40PM	Coquina Salon C	41
					Le, J.	26-Jan	10:20AM	Grand Ballroom Salon 4	39
					Lee, C.	27-Jan	9:00AM	Grand Ballroom Salon 5	51
					Lee, D.	27-Jan	3:50PM	Grand Ballroom Salon 5	52
					Lee, H.	25-Jan	2:00PM	Grand Ballroom Salon 4	24
					Lee, J.	26-Jan	2:10PM	Grand Ballroom Salon 4	40
					Lee, K.	25-Jan	8:40AM	Coquina Salon E	17
					Lee, K.	26-Jan	9:00AM	Grand Ballroom Salon 5	37
					Lee, K.	26-Jan	10:20AM	Grand Ballroom Salons 1/2	34
					Lee, S.	25-Jan	9:30AM	Flagler A/B	27
					Lee, S.	26-Jan	9:30AM	Grand Ballroom Salons 7/8	35
					Lee, S.	26-Jan	10:20AM	Ponce de Leon	45
					Lee, S.	26-Jan	11:40AM	Ponce de Leon	45
					Lehnert, T.	26-Jan	8:30AM	Flagler C	38
					Lei, C.	26-Jan	1:30PM	Grand Ballroom Salons 1/2	34
					Leite, M.	28-Jan	11:00AM	Coquina Salon E	60
					Leonelli, C.	25-Jan	11:30AM	Coquina Salon A	26
					Leonelli, C.	28-Jan	9:30AM	Coquina Salon A	59
					Leong, V.	24-Jan	4:50PM	Grand Ballroom Salons 7/8	11
					Leriche, A.L.	27-Jan	4:40PM	Coquina Salon C	54
					Li Bassi, A.	26-Jan	3:50PM	Coquina Salon E	43
					Li, H.	25-Jan	11:40AM	Grand Ballroom Salon 4	24
					Li, Y.	25-Jan	11:30AM	Flagler C	22
					Li, J.	25-Jan	5:10PM	Flagler C	23
					Li, J.	27-Jan	2:00PM	Flagler A/B	53
					Lim, H.	25-Jan	4:35PM	Grand Ballroom Salons 7/8	20
					Lin, C.	26-Jan	2:30PM	Grand Ballroom Salons 7/8	35
					Lin, S.	26-Jan	1:30PM	Grand Ballroom Salons 7/8	35
					Lipilin, A.	27-Jan	9:00AM	Grand Ballroom Salons 1/2	48
					Liu, B.	26-Jan	1:30PM	Flagler C	38
					Liu, D.	25-Jan	1:30PM	Coquina Salon B	16
					Liu, J.	26-Jan	11:20AM	Grand Ballroom Salons 1/2	34
					Liu, J.	27-Jan	9:30AM	Coquina Salon H	51
					Liu, X.	25-Jan	4:20PM	Coquina Salon G	29
					Long, J.T.	27-Jan	9:10AM	Flagler A/B	53
					Loughney, P.A.	26-Jan	5:00PM	Coquina Salon H	37
					Louh, N.	26-Jan	1:30PM	Coquina Salon B	33
					Lounasvuori, M.	25-Jan	10:00AM	Coquina Salon F	23
					Lu, K.	24-Jan	2:40PM	Grand Ballroom Salon 4	13
					Lu, K.	24-Jan	4:40PM	Ponce de Leon	15
					Lu, K.	25-Jan	9:00AM	Grand Ballroom Salon 4	24
					Lu, K.	26-Jan	10:40AM	Flagler C	38
					Luan, X.	26-Jan	4:20PM	Ponce de Leon	45
					Luckhardt, C.	25-Jan	5:10PM	Coquina Salon E	18
					Lueder, J.	26-Jan	3:10PM	Flagler C	38
					Luo, J.	25-Jan	1:30PM	Flagler C	22
					Luo, J.	26-Jan	8:30AM	Flagler A/B	43
					Luo, J.	26-Jan	1:30PM	Coquina Salon F	45
							M		
					Mahapatra, M.	26-Jan	11:30AM	Coquina Salon G	44
					Maier, R.	26-Jan	3:20PM	Coquina Salon C	41
					Majumdar, S.	25-Jan	10:20AM	Coquina Salon H	21
					Makurunjje, P.S.	25-Jan	10:50AM	Coquina Salon G	28
					Malandrino, G.	26-Jan	2:00PM	Coquina Salon E	43
					Maleki, H.H.	27-Jan	4:30PM	Coquina Salon B	51

Presenting Author List

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Malhotra, P.	25-Jan	10:40AM	Coquina Salon B	16	Nance, J.	26-Jan	11:20AM	Grand Ballroom Salon 4	39
Mallick, D.D.	27-Jan	11:20AM	Coquina Salon G	49	Nance, J.	26-Jan	11:40AM	Grand Ballroom Salon 4	39
Mallick, M.	27-Jan	11:10AM	Ponce de Leon	56	Naraparaju, R.	25-Jan	3:20PM	Coquina Salon E	18
Mallik, P.K.	27-Jan	9:10AM	Coquina Salon B	50	Narayan, R.	26-Jan	3:20PM	Coquina Salon E	43
Mandić, V.	28-Jan	10:10AM	Coquina Salon E	60	Navarra, M.A.	25-Jan	9:30AM	Grand Ballroom Salons 7/8	19
Maniaci, F.	27-Jan	11:00AM	Coquina Salon C	54	Ndayishimiye, A.	26-Jan	9:40AM	Coquina Salon G	44
Mansur de Castro Silva, R.	26-Jan	3:40PM	Coquina Salon A	42	Neagu, D.	25-Jan	11:00AM	Grand Ballroom Salons 1/2	18
Manzhos, S.	26-Jan	10:10AM	Flagler C	38	Nelson, W.	25-Jan	10:40AM	Coquina Salon C	25
Marconie, T.	26-Jan	4:00PM	Coquina Salon C	41	Newton, C.M.	26-Jan	9:15AM	Coquina Salon C	41
Mariyappan, S.	25-Jan	1:55PM	Grand Ballroom Salons 7/8	20	Nguyen, S.T.	27-Jan	2:00PM	Grand Ballroom Salon 5	52
Marrow, J.	25-Jan	8:30AM	Grand Ballroom Salon 4	24	Niakolas, D.K.	25-Jan	1:50PM	Grand Ballroom Salons 1/2	19
Martin, A.J.	26-Jan	2:40PM	Coquina Salon C	41	Niemczyk, A.	27-Jan	1:50PM	Grand Ballroom Salons 1/2	48
Martin, K.L.	25-Jan	11:40AM	Ponce de Leon	30	Nisar, A.	26-Jan	9:20AM	Flagler A/B	43
Martucci, A.	27-Jan	4:20PM	Coquina Salon E	56	Nishi, T.	25-Jan	4:10PM	Flagler C	23
Marvel, C.J.	27-Jan	3:20PM	Coquina Salon G	50	Nishikawa, H.	26-Jan	2:30PM	Flagler A/B	40
Marvel, C.J.	27-Jan	4:40PM	Coquina Salon F	59	Nolas, G.S.	27-Jan	10:40AM	Ponce de Leon	56
Mascher, P.	27-Jan	8:30AM	Coquina Salon E	55	Norby, T.	27-Jan	3:40PM	Ponce de Leon	57
Masuda, Y.	26-Jan	4:20PM	Coquina Salon D	32					
Mathur, S.	25-Jan	3:20PM	Ponce de Leon	30			O		
Mathur, S.	27-Jan	8:30AM	Coquina Salon D	47	Octoviawan, N.	26-Jan	9:00AM	Flagler C	38
Matsui, M.	24-Jan	3:30PM	Grand Ballroom Salons 7/8	11	Ogundiran, M.B.	27-Jan	11:00AM	Coquina Salon A	55
Matsumoto, K.	25-Jan	2:20PM	Grand Ballroom Salons 7/8	20	Ohji, T.	28-Jan	8:30AM	Coquina Salon F	60
Matthey, B.	27-Jan	9:30AM	Coquina Salon G	49	Ohta, M.	27-Jan	5:10PM	Ponce de Leon	57
Mazo, I.	24-Jan	4:40PM	Coquina Salon B	9	Ohtani, A.	27-Jan	2:00PM	Grand Ballroom Salon 4	58
McAleer, E.G.	27-Jan	11:20AM	Coquina Salon C	54	Oka, R.	27-Jan	10:20AM	Flagler A/B	53
McAllister, M.	24-Jan	2:40PM	Coquina Salon B	9	Okada, G.	27-Jan	9:30AM	Flagler A/B	53
McAnany, S.	28-Jan	9:20AM	Coquina Salon F	60	Okawa, A.	27-Jan	11:20AM	Grand Ballroom Salon 5	52
McCormack, S.H.	25-Jan	9:00AM	Coquina Salon E	17	Okubo, M.	24-Jan	4:00PM	Grand Ballroom Salons 7/8	11
McCormack, S.J.	24-Jan	4:50PM	Flagler A/B	14	Olevsky, E.	27-Jan	8:30AM	Coquina Salon F	58
McIlwaine, N.S.	26-Jan	10:50AM	Flagler A/B	43	Olson, N.	25-Jan	1:30PM	Coquina Salon H	22
Medvedovski, E.	25-Jan	8:30AM	Coquina Salon D	15	Orgiu, E.	27-Jan	2:30PM	Coquina Salon E	56
Medvedovski, E.	26-Jan	11:30AM	Coquina Salon E	34	Orta Guerra, R.	26-Jan	9:30AM	Grand Ballroom Salon 5	37
Mendoza, W.	26-Jan	10:40AM	Coquina Salon A	42	Ortona, A.	25-Jan	8:30AM	Coquina Salon C	25
Meng, Y.	24-Jan	10:30AM	Coquina Salon D	8	Osaka, A.	27-Jan	11:10AM	Coquina Salon B	50
Mera, G.	26-Jan	1:30PM	Ponce de Leon	45	Oshima, S.	27-Jan	1:30PM	Grand Ballroom Salon 4	58
Mhin, S.	27-Jan	2:20PM	Grand Ballroom Salon 5	52	Ozaki, T.	26-Jan	11:10AM	Grand Ballroom Salon 5	37
Michaelis, A.	26-Jan	10:50AM	Coquina Salon C	41					
Middleburgh, S.C.	25-Jan	9:00AM	Flagler A/B	27			P		
Miele, P.	24-Jan	4:10PM	Ponce de Leon	15	Paksoy, A.H.	25-Jan	2:30PM	Coquina Salon E	18
Minh, N.Q.	27-Jan	8:30AM	Grand Ballroom Salons 1/2	48	Palmero, P.	27-Jan	2:00PM	Coquina Salon C	54
Mirza, F.	24-Jan	4:10PM	Flagler A/B	14	Palmero, P.	27-Jan	4:00PM	Coquina Salon A	55
Mishra, T.	25-Jan	11:50AM	Coquina Salon G	28	Palomares, K.	24-Jan	2:20PM	Coquina Salon C	9
Misture, S.T.	27-Jan	1:30PM	Coquina Salon E	56	Panakarajupally, R.	25-Jan	11:20AM	Coquina Salon B	16
Misture, S.T.	28-Jan	11:10AM	Coquina Salon F	60	Panzic, I.	25-Jan	3:40PM	Coquina Salon C	26
Montinaro, D.	24-Jan	2:00PM	Grand Ballroom Salons 1/2	10	Papa, E.	26-Jan	9:00AM	Coquina Salon A	42
Monzel, W.J.	27-Jan	11:30AM	Coquina Salon A	55	Paredes Goyes, B.M.	27-Jan	10:50AM	Coquina Salon F	59
Moon, K.	27-Jan	11:40AM	Grand Ballroom Salon 5	52	Park, J.	27-Jan	11:50AM	Grand Ballroom Salon 4	58
Moore, T.W.	27-Jan	11:00AM	Coquina Salon G	49	Parker, C.G.	25-Jan	9:40AM	Coquina Salon E	17
Morel, C.	26-Jan	10:40AM	Grand Ballroom Salon 4	39	Patel, T.	28-Jan	9:40AM	Coquina Salon F	60
Moretti, E.	27-Jan	9:00AM	Coquina Salon E	56	Pateloup, V.	27-Jan	9:00AM	Coquina Salon C	54
Mori, T.	27-Jan	10:00AM	Ponce de Leon	56	Pateloup, V.	27-Jan	4:20PM	Grand Ballroom Salon 5	52
Morschner, G.N.	25-Jan	3:20PM	Coquina Salon B	17	Paterlini, A.	24-Jan	2:20PM	Coquina Salon G	14
Motz, G.	24-Jan	2:00PM	Coquina Salon H	12	Pathak, A.K.	27-Jan	5:10PM	Grand Ballroom Salon 4	58
Motz, G.	25-Jan	2:00PM	Ponce de Leon	30	Payne, H.	27-Jan	9:10AM	Coquina Salon G	49
Muccillo, R.	26-Jan	10:50AM	Coquina Salon D	32	Pegna, J.	26-Jan	1:30PM	Grand Ballroom Salon 4	39
Muir, C.	26-Jan	2:10PM	Coquina Salon B	33	Pelanconi, M.	25-Jan	2:40PM	Coquina Salon C	26
Muracchioli, M.	25-Jan	11:30AM	Coquina Salon H	22	Pelz, J.	24-Jan	3:30PM	Coquina Salon G	14
Myung, S.	25-Jan	3:30PM	Grand Ballroom Salons 7/8	20	Petrie, C.	26-Jan	4:40PM	Grand Ballroom Salon 4	40
		N			Pinna, N.	26-Jan	1:30PM	Coquina Salon H	36
Naccache, R.	27-Jan	10:50AM	Coquina Salon E	56	Pinna, N.	27-Jan	9:30AM	Coquina Salon E	56
Naim Katea, S.	25-Jan	10:20AM	Grand Ballroom Salon 4	24	Pollard, J.P.	25-Jan	3:50PM	Grand Ballroom Salon 4	25
Naim Katea, S.	26-Jan	4:10PM	Coquina Salon H	36	Polo, F.	28-Jan	9:00AM	Coquina Salon E	60
Naito, M.	26-Jan	1:30PM	Coquina Salon D	32	Porter, K.A.	27-Jan	4:00PM	Coquina Salon C	54
Nakai, A.	27-Jan	4:40PM	Grand Ballroom Salon 4	58	Pralong, V.	24-Jan	4:30PM	Grand Ballroom Salons 7/8	11
Nakajima, T.	27-Jan	11:20AM	Flagler A/B	53	Presby, M.J.	25-Jan	2:10PM	Coquina Salon E	18
Nakamura, A.	27-Jan	2:00PM	Coquina Salon F	59	Preusker, J.	26-Jan	4:40PM	Coquina Salon F	46
Nakatani, H.	27-Jan	2:50PM	Grand Ballroom Salon 4	58	Prikhna, T.	25-Jan	4:10PM	Coquina Salon F	24
Nakayama, T.	27-Jan	2:00PM	Coquina Salon D	48	Prikhna, T.	27-Jan	8:50AM	Coquina Salon F	49
Naleway, S.E.	26-Jan	2:00PM	Coquina Salon G	44	Provis, J.L.	25-Jan	8:30AM	Coquina Salon A	26
					Pryds, N.	27-Jan	1:30PM	Ponce de Leon	57

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number					
Q														
Quillin, K.	26-Jan	3:20PM	Grand Ballroom Salon 4	40	Shen, L.	26-Jan	2:20PM	Flagler C	38					
Quinn, G.D.	26-Jan	8:30AM	Coquina Salon B	32	Shi, L.	25-Jan	2:50PM	Coquina Salon G	29					
Quinn, L.	24-Jan	4:50PM	Coquina Salon H	12	Shi, M.	27-Jan	2:30PM	Grand Ballroom Salon 4	58					
R														
Radovanović-Perić, F.	27-Jan	11:50AM	Flagler A/B	53	Shibata, N.	27-Jan	3:20PM	Coquina Salon F	59					
Raja, N.	27-Jan	10:50AM	Coquina Salon B	50	Shifa, T.A.	28-Jan	11:30AM	Coquina Salon E	60					
Rajendran, V.	26-Jan	9:40AM	Coquina Salon H	36	Shimamura, K.	27-Jan	9:30AM	Coquina Salon D	48					
Ramesh, A.	25-Jan	4:15PM	Grand Ballroom Salons 7/8	20	Shin, S.	25-Jan	1:30PM	Coquina Salon G	29					
Rathod, H.J.	25-Jan	9:10AM	Coquina Salon B	16	Shin, T.	27-Jan	10:20AM	Grand Ballroom Salons 1/2	48					
Reimanis, I.	28-Jan	11:40AM	Coquina Salon F	60	Shiraishi, J.	25-Jan	11:10AM	Flagler A/B	27					
Ren, Z.	27-Jan	8:30AM	Ponce de Leon	56	Shirey, K.	25-Jan	3:10PM	Flagler A/B	28					
Rheinheimer, W.	26-Jan	4:20PM	Coquina Salon F	46	Shirvan, K.	26-Jan	9:20AM	Grand Ballroom Salon 4	39					
Ribic, B.D.	26-Jan	11:05AM	Coquina Salon C	41	Shuck, C.E.	24-Jan	2:30PM	Coquina Salon D	12					
Rohde, M.	26-Jan	11:10AM	Grand Ballroom Salons 7/8	35	Silvestroni, L.	24-Jan	5:20PM	Flagler A/B	14					
Rosen, J.	24-Jan	1:30PM	Coquina Salon F	12	Singh Sandhu, K.	28-Jan	10:20AM	Coquina Salon F	60					
Rossignol, S.	26-Jan	4:00PM	Coquina Salon A	42	Singh, D.	24-Jan	1:30PM	Coquina Salon D	8					
Rost, C.M.	26-Jan	2:00PM	Flagler A/B	40	Singh, G.	24-Jan	3:20PM	Ponce de Leon	15					
Ruggles-Wrenn, M.	26-Jan	10:20AM	Coquina Salon B	33	Singh, P.	24-Jan	1:30PM	Grand Ballroom Salons 1/2	10					
Rulis, P.	25-Jan	8:30AM	Flagler C	22	Singh, P.	25-Jan	11:20AM	Coquina Salon D	15					
Rüscher, C.	26-Jan	1:30PM	Coquina Salon A	42	Sisson, R.D.	24-Jan	8:50AM	Coquina Salon D	8					
S														
Sá Ribeiro, M.G.	26-Jan	9:30AM	Coquina Salon A	42	Sisson, R.D.	24-Jan	3:30PM	Coquina Salon D	8					
Saad, A.A.	24-Jan	4:20PM	Coquina Salon E	10	Smeacetto, F.	26-Jan	4:20PM	Grand Ballroom Salons 1/2	35					
Sabato, A.	26-Jan	12:00PM	Grand Ballroom Salons 7/8	35	Smith, N.	25-Jan	4:10PM	Flagler A/B	28					
Sabato, A.	26-Jan	2:40PM	Grand Ballroom Salons 1/2	34	Smith, S.M.	26-Jan	11:10AM	Flagler A/B	43					
Sajgalik, P.	25-Jan	1:30PM	Coquina Salon D	16	Smitshuysen, A.L.	27-Jan	9:40AM	Grand Ballroom Salons 1/2	48					
Sajgalik, P.	25-Jan	3:40PM	Ponce de Leon	30	Snead, L.	25-Jan	4:30PM	Grand Ballroom Salon 4	25					
Sakaguchi, M.	27-Jan	3:40PM	Grand Ballroom Salon 4	58	Sodisetty, V.	25-Jan	11:40AM	Coquina Salon B	16					
Sakai, T.	27-Jan	8:50AM	Grand Ballroom Salon 4	57	Solaippan, A.	26-Jan	10:50AM	Coquina Salon E	33					
Sakidja, R.	24-Jan	2:00PM	Flagler A/B	14	Soraru, G.D.	24-Jan	1:30PM	Coquina Salon H	11					
Sako, R.	27-Jan	11:30AM	Grand Ballroom Salon 4	58	Sotelo Martin, L.E.	27-Jan	8:30AM	Coquina Salon G	49					
Saladino, G.	26-Jan	10:50AM	Coquina Salon H	36	Sougrati, M.	26-Jan	8:30AM	Grand Ballroom Salons 7/8	35					
Salameh, C.	25-Jan	10:40AM	Ponce de Leon	29	Sozal, M.	26-Jan	9:20AM	Grand Ballroom Salons 1/2	34					
Salanova, A.	25-Jan	11:00AM	Coquina Salon E	17	Speck, T.	24-Jan	11:10AM	Coquina Salon D	8					
Salmanov, S.	27-Jan	9:20AM	Coquina Salon F	58	Sproutster, D.	25-Jan	10:40AM	Grand Ballroom Salon 4	24					
Samuel, D.	25-Jan	2:40PM	Coquina Salon A	27	Sproutster, D.	25-Jan	5:10PM	Grand Ballroom Salon 4	25					
Sänger, J.C.	24-Jan	3:20PM	Grand Ballroom Salon 5	11	Srivastava, A.	25-Jan	3:20PM	Coquina Salon F	24					
Santarelli, M.	25-Jan	10:20AM	Grand Ballroom Salons 1/2	18	Stein, Z.	26-Jan	9:00AM	Coquina Salon E	33					
Santato, C.	27-Jan	3:50PM	Coquina Salon E	56	Sternlicht, H.	27-Jan	3:50PM	Coquina Salon F	59					
Sarin, P.	25-Jan	3:40PM	Coquina Salon B	17	Stevano, L.	25-Jan	3:55PM	Grand Ballroom Salons 7/8	20					
Sato, T.	27-Jan	9:50AM	Grand Ballroom Salon 4	57	Stokes, J.L.	26-Jan	10:10AM	Coquina Salon E	33					
Sauceda, D.	26-Jan	2:50PM	Flagler C	38	Suematsu, H.	26-Jan	3:40PM	Grand Ballroom Salon 5	37					
Scanferla, P.	25-Jan	3:40PM	Coquina Salon A	27	Suematsu, H.	27-Jan	11:20AM	Coquina Salon D	48					
Schaefer, M.C.	25-Jan	10:50AM	Flagler A/B	27	Sugahara, Y.	26-Jan	9:30AM	Ponce de Leon	45					
Schauperl, R.	25-Jan	9:30AM	Grand Ballroom Salons 1/2	18	Sulatchaneenopdon, N.	27-Jan	4:40PM	Grand Ballroom Salon 5	52					
Schick, C.	27-Jan	10:40AM	Coquina Salon C	54	Sutejo, I.A.	25-Jan	4:00PM	Coquina Salon C	26					
Schilm, J.	25-Jan	8:30AM	Grand Ballroom Salon 5	20	Suyama, S.	25-Jan	2:20PM	Grand Ballroom Salon 4	24					
Schlacher, J.	25-Jan	9:00AM	Coquina Salon C	25	Suzuki, K.	26-Jan	9:00AM	Grand Ballroom Salons 7/8	35					
Schlacher, J.	25-Jan	11:00AM	Coquina Salon B	16	Suzuki, K.	27-Jan	3:00PM	Grand Ballroom Salon 5	52					
Schmitt, M.	24-Jan	3:20PM	Coquina Salon E	10	Suzuki, T.S.	25-Jan	3:20PM	Grand Ballroom Salon 5	21					
Schneider, J.J.	24-Jan	1:30PM	Ponce de Leon	15	Suzuki, T.S.	27-Jan	10:50AM	Coquina Salon D	48					
Schneider, J.M.	24-Jan	5:00PM	Coquina Salon F	13	T									
Schneider, T.	24-Jan	2:00PM	Coquina Salon B	9	Tabares, E.	25-Jan	10:30AM	Coquina Salon F	23					
Schwentenwein, M.	25-Jan	3:20PM	Coquina Salon C	26	Takada, K.	25-Jan	8:30AM	Grand Ballroom Salons 7/8	19					
Schwieger, W.	25-Jan	10:50AM	Coquina Salon H	21	Takemura, H.	27-Jan	1:30PM	Coquina Salon D	48					
Sciazko, A.	25-Jan	2:40PM	Grand Ballroom Salons 1/2	19	Tamayo, A.	24-Jan	5:10PM	Ponce de Leon	15					
Sciti, D.	25-Jan	8:30AM	Flagler A/B	27	Tan, Z.	24-Jan	4:40PM	Coquina Salon F	13					
Searight, W.	24-Jan	4:50PM	Grand Ballroom Salon 4	13	Tanaka, S.	26-Jan	2:30PM	Grand Ballroom Salon 5	37					
Seo, D.	25-Jan	11:00AM	Coquina Salon A	26	Tatami, J.	25-Jan	4:50PM	Coquina Salon D	16					
Serrano, J.	24-Jan	5:10PM	Grand Ballroom Salons 7/8	11	Tatami, J.	27-Jan	3:20PM	Grand Ballroom Salon 5	52					
Seshadri, A.	26-Jan	9:40AM	Grand Ballroom Salon 4	39	Tewani, H.	26-Jan	11:20AM	Coquina Salon B	33					
Setlur, A.	25-Jan	10:40AM	Coquina Salon E	17	Thandaga Nagaraju, H.	26-Jan	11:00AM	Grand Ballroom Salon 4	39					
Sglavo, V.M.	26-Jan	2:00PM	Coquina Salon F	45	Thomas, J.	24-Jan	3:20PM	Coquina Salon B	9					
Shafei, L.A.	25-Jan	2:00PM	Flagler C	22	Toda, K.	26-Jan	1:30PM	Flagler A/B	40					
Shaik, M.	24-Jan	5:00PM	Coquina Salon B	9	Toda, K.	27-Jan	2:40PM	Flagler A/B	53					
Sharifkolouei, E.	26-Jan	10:30AM	Grand Ballroom Salon 5	37	Todd, R.I.	26-Jan	3:20PM	Coquina Salon F	46					
Sharma, L.K.	25-Jan	2:00PM	Coquina Salon D	16	Toprak, M.S.	26-Jan	8:40AM	Coquina Salon H	36					
Sharma, N.	26-Jan	3:10PM	Grand Ballroom Salons 7/8	35	Toprak, M.S.	27-Jan	10:10AM	Coquina Salon H	51					
Sharma, V.	25-Jan	4:20PM	Coquina Salon C	26	Trindade, A.C.	26-Jan	8:30AM	Coquina Salon A	42					
					Tsarkova, V.	27-Jan	2:20PM	Coquina Salon C	54					
					Tsipas, S.A.	24-Jan	4:20PM	Coquina Salon F	12					
					Tsuchiya, T.	27-Jan	10:50AM	Flagler A/B	53					
					Tucker, M.	27-Jan	1:30PM	Grand Ballroom Salons 1/2	48					

Presenting Author List

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
U					X				
Udomsri, N.	25-Jan	2:30PM	Coquina Salon H	22	Xu, P.	26-Jan	3:40PM	Grand Ballroom Salon 4	40
Uemura, Y.	27-Jan	9:20AM	Coquina Salon C	54	Y				
Ueno, S.	25-Jan	8:30AM	Coquina Salon H	21	Yabuuchi, N.	24-Jan	2:00PM	Grand Ballroom Salons 7/8	10
Ueno, S.	26-Jan	9:30AM	Coquina Salon D	32	Yamada, Y.	26-Jan	2:00PM	Grand Ballroom Salons 7/8	35
Urta Sanchez, O.	26-Jan	4:20PM	Coquina Salon C	42	Yamaguchi, S.	25-Jan	9:30AM	Coquina Salon G	28
V					Yamamoto, S.	25-Jan	11:10AM	Grand Ballroom Salons 7/8	19
Vakharia, V.	25-Jan	2:20PM	Coquina Salon C	26	Yang, A.	27-Jan	11:40AM	Coquina Salon G	49
van Benthem, K.	27-Jan	10:20AM	Coquina Salon F	59	Yang, Y.	26-Jan	4:20PM	Grand Ballroom Salon 5	38
Van Deventer, J.	28-Jan	8:30AM	Coquina Salon A	59	Yazgan, I.	26-Jan	9:10AM	Coquina Salon H	36
Vandepierre, L.J.	24-Jan	3:20PM	Flagler A/B	14	Yeom, J.	24-Jan	2:00PM	Grand Ballroom Salon 5	11
Varghese, O.K.	28-Jan	10:30AM	Coquina Salon E	60	Yildiz, B.	25-Jan	11:30AM	Grand Ballroom Salons 1/2	18
Velazquez Plaza, A.M.	25-Jan	4:30PM	Coquina Salon E	18	Yilmaz, E.	25-Jan	1:30PM	Coquina Salon E	18
Venkatesh, A.	27-Jan	9:40AM	Coquina Salon F	59	Yoon, D.	26-Jan	2:00PM	Grand Ballroom Salon 5	37
Vetrone, F.	27-Jan	10:20AM	Coquina Salon E	56	Yoshikawa, K.	25-Jan	10:50AM	Grand Ballroom Salons 7/8	19
Vetrone, F.	27-Jan	3:50PM	Coquina Salon B	51	Yoshimura, M.	26-Jan	11:10AM	Coquina Salon E	34
Vignoles, G.L.	26-Jan	9:00AM	Coquina Salon D	32	Yoshiya, M.	25-Jan	10:10AM	Flagler C	22
Vilarinho, P.	25-Jan	11:00AM	Coquina Salon C	25	Yu, J.	26-Jan	3:30PM	Grand Ballroom Salons 1/2	35
Vilarinho, P.	26-Jan	9:30AM	Coquina Salon C	41	Yu, M.	24-Jan	2:50PM	Grand Ballroom Salons 7/8	11
Villatte, L.	26-Jan	9:20AM	Coquina Salon G	44	Yu, Y.	24-Jan	3:40PM	Coquina Salon E	10
Višić, L.	27-Jan	9:10AM	Coquina Salon H	51	Yu, Z.	24-Jan	3:20PM	Coquina Salon C	9
Vogt, C.	26-Jan	10:20AM	Coquina Salon H	36	Yu, Z.	26-Jan	3:50PM	Ponce de Leon	45
Vorkötter, C.	27-Jan	2:40PM	Grand Ballroom Salons 1/2	49	Yuan, D.	27-Jan	4:20PM	Flagler A/B	53
Voskanyan, A.	27-Jan	8:50AM	Flagler A/B	53	Yuan, G.	25-Jan	9:20AM	Grand Ballroom Salon 4	24
W					Z				
Wadley, H.	24-Jan	1:40PM	Coquina Salon E	9	Zhai, W.	24-Jan	3:20PM	Coquina Salon H	12
Walker, L.S.	24-Jan	2:20PM	Grand Ballroom Salon 5	11	Zhan, Z.	26-Jan	9:50AM	Coquina Salon F	39
Walker, R.C.	24-Jan	4:30PM	Coquina Salon H	12	Zhang, G.	26-Jan	3:50PM	Flagler A/B	40
Walton, R.	24-Jan	4:50PM	Coquina Salon G	14	Zhang, G.	27-Jan	4:50PM	Coquina Salon E	56
Wang, D.	26-Jan	4:30PM	Coquina Salon A	43	Zhang, J.	26-Jan	9:40AM	Coquina Salon E	33
Wang, H.	26-Jan	3:20PM	Flagler A/B	40	Zhang, X.	25-Jan	9:40AM	Coquina Salon C	25
Wang, J.	24-Jan	9:30AM	Coquina Salon D	8	Zhang, X.	25-Jan	2:40PM	Grand Ballroom Salon 5	21
Wang, J.	26-Jan	10:20AM	Coquina Salon D	32	Zhao, S.	25-Jan	11:20AM	Coquina Salon F	23
Wang, M.	27-Jan	8:30AM	Coquina Salon B	50	Zhong, Y.	24-Jan	4:30PM	Grand Ballroom Salons 1/2	10
Wang, W.	27-Jan	10:20AM	Coquina Salon D	48	Zhou, A.	24-Jan	2:00PM	Coquina Salon F	12
Wang, Y.	24-Jan	4:00PM	Coquina Salon E	10	Zhou, X.	27-Jan	3:00PM	Grand Ballroom Salons 1/2	49
Weigner, J.	26-Jan	10:35AM	Coquina Salon C	41	Zhou, Y.	25-Jan	1:30PM	Grand Ballroom Salon 5	21
Weinberger, C.R.	24-Jan	2:40PM	Flagler A/B	14	Zhou, Y.	27-Jan	9:20AM	Grand Ballroom Salon 4	57
Wen, Q.	25-Jan	4:40PM	Ponce de Leon	30	Zhuravleva, M.	27-Jan	3:50PM	Flagler A/B	53
Westin, G.	24-Jan	2:30PM	Ponce de Leon	15	Zok, F.W.	24-Jan	1:30PM	Coquina Salon B	9
Westin, G.	27-Jan	3:20PM	Coquina Salon E	56	Zou, J.	25-Jan	11:30AM	Flagler A/B	28
Winhard, B.	24-Jan	4:30PM	Coquina Salon G	14	Zuber, A.	25-Jan	2:40PM	Coquina Salon F	23
Wollmershauser, J.	26-Jan	4:20PM	Flagler A/B	40	Zusho, Y.	25-Jan	9:00AM	Coquina Salon H	21
Wu, C.	27-Jan	4:20PM	Grand Ballroom Salon 4	58					
Wu, Y.	24-Jan	2:00PM	Coquina Salon D	8					
Wu, Y.	26-Jan	8:30AM	Grand Ballroom Salon 5	37					

Poster Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
A					E				
Alfocea Roig, A.	25-Jan	5:30PM	Ocean Center Arena	31	Elder, J.	26-Jan	5:30PM	Ocean Center Arena	47
B					F				
Bachkaniwala, J.	26-Jan	5:30PM	Ocean Center Arena	47	Ferguson, C.A.	25-Jan	5:30PM	Ocean Center Arena	31
Brandvold, A.S.	26-Jan	5:30PM	Ocean Center Arena	47	Foschini, C.R.	26-Jan	5:30PM	Ocean Center Arena	46
C					G				
Cho, H.	26-Jan	5:30PM	Ocean Center Arena	47	Garcia, C.	25-Jan	5:30PM	Ocean Center Arena	31
Colombo, P.	26-Jan	5:30PM	Ocean Center Arena	47	Geigle, M.	26-Jan	5:30PM	Ocean Center Arena	46
Colorado L., H.A.	26-Jan	5:30PM	Ocean Center Arena	47	Golubchikov, D.	26-Jan	5:30PM	Ocean Center Arena	46
Cornell, J.M.	25-Jan	5:30PM	Ocean Center Arena	30					

Poster Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
					I				
Ichiba, K.	26-Jan	5:30PM	Ocean Center Arena	47					
					J				
Jenkins, M.G.	25-Jan	5:30PM	Ocean Center Arena	30					
Jin, W.	25-Jan	5:30PM	Ocean Center Arena	30					
					K				
Kajimoto, J.	26-Jan	5:30PM	Ocean Center Arena	46					
Kaou, M.H.	26-Jan	5:30PM	Ocean Center Arena	46					
Kim, S.	25-Jan	5:30PM	Ocean Center Arena	31					
Kiseleva, A.	26-Jan	5:30PM	Ocean Center Arena	46					
Kobayashi, S.	26-Jan	5:30PM	Ocean Center Arena	46					
Komiya, H.	26-Jan	5:30PM	Ocean Center Arena	46					
Kozych, A.	26-Jan	5:30PM	Ocean Center Arena	47					
Kunikata, T.	26-Jan	5:30PM	Ocean Center Arena	47					
					M				
Maclsaac, M.P.	25-Jan	5:30PM	Ocean Center Arena	30					
Maniaci, F.F.	26-Jan	5:30PM	Ocean Center Arena	47					
Martin, H.	25-Jan	5:30PM	Ocean Center Arena	31					
Mujib, S.	25-Jan	5:30PM	Ocean Center Arena	31					
Murillo-Mosquera, E.	26-Jan	5:30PM	Ocean Center Arena	47					
					O				
Okazaki, K.	26-Jan	5:30PM	Ocean Center Arena	46, 47					
Oshima, S.	26-Jan	5:30PM	Ocean Center Arena	46					
Otsuka, Y.	25-Jan	5:30PM	Ocean Center Arena	31					
					P				
Pandey, V.	25-Jan	5:30PM	Ocean Center Arena	30					
Patel, T.	25-Jan	5:30PM	Ocean Center Arena	30					
Pinto, R.G.	26-Jan	5:30PM	Ocean Center Arena	46					
					R				
Real, C.	25-Jan	5:30PM	Ocean Center Arena	31					
Regan, B.	25-Jan	5:30PM	Ocean Center Arena	31					
Restrepo Tobón, S.	25-Jan	5:30PM	Ocean Center Arena	30					
Rodrigues, J.	25-Jan	5:30PM	Ocean Center Arena	31					
Rodriguez, J.	25-Jan	5:30PM	Ocean Center Arena	31					
Romero, E.	25-Jan	5:30PM	Ocean Center Arena	31					
					S				
Sakaguchi, M.	26-Jan	5:30PM	Ocean Center Arena	46					
Sakai, H.	25-Jan	5:30PM	Ocean Center Arena	31					
Sakai, T.	26-Jan	5:30PM	Ocean Center Arena	46					
Schmidt, T.	25-Jan	5:30PM	Ocean Center Arena	31					
Simonova, P.	25-Jan	5:30PM	Ocean Center Arena	31					
Sivakumar, A.	25-Jan	5:30PM	Ocean Center Arena	31					
Smith, D.	25-Jan	5:30PM	Ocean Center Arena	31					
Song, J.	25-Jan	5:30PM	Ocean Center Arena	31					
Syla, D.	25-Jan	5:30PM	Ocean Center Arena	31					
					T				
Trieff, D.	25-Jan	5:30PM	Ocean Center Arena	30					
					U				
Uzawa, Y.	26-Jan	5:30PM	Ocean Center Arena	47					
					V				
Vaschalde, L.M.	26-Jan	5:30PM	Ocean Center Arena	47					
					W				
Wallace, A.	26-Jan	5:30PM	Ocean Center Arena	46					
Wang, J.	25-Jan	5:30PM	Ocean Center Arena	30					
					X				
Xu, Y.	26-Jan	5:30PM	Ocean Center Arena	47					
					Y				
Yadav, M.K.	26-Jan	5:30PM	Ocean Center Arena	46					
Yamada, K.	26-Jan	5:30PM	Ocean Center Arena	47					
Yang, S.	25-Jan	5:30PM	Ocean Center Arena	31					
Yusslee, E.F.	26-Jan	5:30PM	Ocean Center Arena	47					
					Z				
Ziamahmoodi, N.	25-Jan	5:30PM	Ocean Center Arena	31					

Monday, January 24, 2022

Plenary Session

Opening Remarks and Plenary Session

Room: Coquina Salon D

Session Chairs: Palani Balaya, National University of Singapore;
Valerie Wiesner, NASA Langley Research Center

8:30 AM

Opening Remarks and Awards

8:50 AM

(ICACC-PLEN-001-2022) The Future of Materials Engineering Education

R. D. Sisson*¹

1. Worcester Polytechnic Institute, Materials Science and Engineering, USA

9:30 AM

(ICACC-PLEN-002-2022) Advanced environmental barrier coatings for SiC/SiC composite

J. Wang*¹

1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, High-performance Ceramics Division, China

10:10 AM

Break

10:30 AM

(ICACC-PLEN-003-2022) Designing Better Ceramic Materials for Future Batteries

Y. Meng*¹

1. University of California, San Diego, Laboratory for Energy Storage & Conversion, USA

11:10 AM

(ICACC-PLEN-004-2022) Plant Materials Systems and Structures: Bio-Inspiration for a "Greener" Technology in the 21st Century

T. Speck*¹

1. University of Freiburg, Germany

Emerging Technologies Symposium

Emergent Materials and Technologies I

Room: Coquina Salon D

Session Chair: Mrityunjay Singh, Ohio Aerospace Institute

1:20 PM

Welcome and Introductory Remarks, M. Singh

1:30 PM

(ICACC-001-2022) Role of Ceramics in Thermal Energy Storage* (Invited)

D. Singh*¹

1. Argonne National Lab, USA

2:00 PM

(ICACC-002-2022) Crystallization of amorphous material into transparent ceramics (Invited)

I. Milisavljevic¹; J. Li¹; Y. Wu*¹

1. Alfred University, Kazuo Inamori School of Engineering, New York State College of Ceramics, USA

2:30 PM

(ICACC-003-2022) Stereolithographic Additive Manufacturing of Ceramic Component with Modulated Geometries (Invited)

S. Kirihara*¹

1. Osaka University, Joining and Welding Research Institute, Japan

3:00 PM

Break

Emergent Materials and Technologies II

Room: Coquina Salon D

Session Chair: Michael Halbig, NASA Glenn Research Center

3:30 PM

(ICACC-004-2022) Developing Machine Learning Enabled Closed-loop Control for Ceramic Robocasting (Invited)

Z. Zhang¹; z. Yang¹; R. D. Sisson*²; J. Liang¹

1. worcester polytechnic institute, Mechanical Engineering, USA
2. Worcester Polytechnic Institute, Materials Science and Engineering, USA

4:00 PM

(ICACC-005-2022) Additive Manufacturing Through Binder Jetting for the Fabrication of SiC-Based Ceramics for Aerospace Applications (Invited)

M. C. Halbig*¹; M. Singh²; C. Smith¹; A. Kiser³

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA
3. The Ohio State University, USA

4:30 PM

(ICACC-006-2022) Fiber Lasers for glass and ceramic machining (Invited)

S. Jiang*¹

1. AdValue Photonics Inc, USA

5:00 PM

(ICACC-007-2022) Additive manufacturing of preceramic polymers by photopolymerization (Invited)

H. Elsayed²; A. De Marzi²; G. Franchin²; K. Huang²; P. Colombo*¹

1. University of Padova, Industrial engineering, Italy
2. University of Padova, Department of Industrial Engineering, Italy
3. University of Padova, Industrial Engineering, Italy

Special Focused Session on Diversity, Entrepreneurship, and Commercialization

Jubilee Global Diversity Awards; Entrepreneurship and Commercialization

Room: Coquina Salon C

Session Chairs: Surojit Gupta, University of North Dakota;
Valerie Wiesner, NASA Langley Research Center

1:30 PM

Opening Remarks

1:40 PM

(ICACC-008-2022) Nanostructured antibacterial/virucidal composite coatings (Invited)

C. Balagna*¹

1. Politecnico di Torino, Dept. Applied Science and Technology, Italy

2:20 PM**(ICACC-010-2022) Overview of high temperature material needs for space nuclear propulsion reactors (Invited)**K. Palomares^{*1}; D. Burns²; D. V. Rao²; K. Polzin³

1. Analytical Mechanics Associates, Inc., USA
2. Los Alamos National Lab, USA
3. NASA Marshall Spaceflight Center, USA
4. Idaho National Lab, USA

3:00 PM**Break****3:20 PM****(ICACC-011-2022) Putting metals into polymer derived ceramics: What happens? (Invited)**Z. Yu^{*1}

1. Xiamen University, College of Materials, Key Laboratory of High Performance Ceramic Fibers, China

S1: Mechanical Behavior and Performance of Ceramics & Composites**Processing-Microstructure-Mechanical Properties Correlation I**

Room: Coquina Salon B

1:30 PM**(ICACC-012-2022) Tensile Response of SiC/SiC Composites: Fragmentation, Sliding, and Interface Degradation (Invited)**F. W. Zok^{*1}; M. McAllister¹; E. B. Callaway¹; V. Collier¹; M. Begley¹

1. University of California, Santa Barbara, Materials, USA

2:00 PM**(ICACC-013-2022) Mechanical characterization and failure analysis of a 3D reinforced C/C- SiC composite by means of DIC and CT**T. Schneider^{*1}; D. Koch¹

1. University of Augsburg, Institute of Materials Resource Management MRM, Materials Engineering, Germany

2:20 PM**(ICACC-014-2022) Interlaminar type damage detection in MI-SiC based composite using electrical potential drop techniques.**A. Gupta^{*1}; Y. P. Singh²; G. N. Morscher³

1. University of Akron, Mechanical Engineering, USA
2. University of Akron, Mechanical Engineering, USA
3. University of Akron, Mechanical Engineering Dept., USA

2:40 PM**(ICACC-015-2022) Effects of constituent property dispersions on tensile strength of ceramic composites**M. McAllister^{*1}; E. B. Callaway²; F. W. Zok¹

1. University of California, Santa Barbara, Materials, USA
2. Pratt & Whitney, USA

3:00 PM**Break****Processing-Microstructure-Mechanical Properties Correlation II**

Room: Coquina Salon B

3:20 PM**(ICACC-016-2022) Microstructure and Mechanical Property Characterization of Liquid Silicon Infiltrated Binder Jet Printed Silicon Carbide Ceramic Heat Exchanger Prototypes**J. Thomas^{*1}; M. Banda¹; W. Yu¹; Y. Chen¹; A. Chuang²; D. Singh²

1. Argonne National Laboratory, Applied Materials Division, USA
2. Argonne National Lab, Applied Materials Division, USA
3. Argonne National Laboratory, X-ray Science Division, USA

3:40 PM**(ICACC-017-2022) Elongated lanthanum hexa-aluminate toughened zirconia based composite**M. Li¹; B. Vanmeerbeek²; B. Tunca¹; S. Cokic^{*2}; J. Vleugels¹; F. Zhang¹

1. KU Leuven, Department of Materials Engineering, Belgium
2. KU Leuven, Department of Oral Health Sciences, Belgium

4:00 PM**(ICACC-018-2022) Mechanical Testing of ZrB₂ Ceramics to ASTM Standards in Two Laboratories**J. Jarman^{*1}; W. Fahrenholtz²; J. Watts³; J. Swab⁴

1. Missouri University of Science & Technology, Department of Material Science and Engineering, USA
2. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
3. Missouri University of Science & Technology, Materials Science and Engineering, USA
4. Army Research Laboratory, USA

4:20 PM**(ICACC-019-2022) Mechanical Characterization of Micron-Sized Cast Tungsten Carbide Powders Using AFM Topographic Images**M. Ciurans Oset^{*1}; I. Mundó Tijeras¹; J. Mouzon²; F. Akhtar¹

1. Luleå University of Technology, Engineering Sciences and Mathematics, Sweden
2. Höganäs Sweden AB, Sweden

4:40 PM**(ICACC-020-2022) Plasticity in flash sintered binderless tungsten carbide: effect of the sintering rate on the grain boundary decohesion**I. Mazo^{*1}; A. Molinari²; V. M. Sglavo²; J. Molina-Aldareguia³

1. University of Trento, Industrial engineering, Italy
2. University of Trento, Italy
3. IMDEA Materials Institute, Spain

5:00 PM**(ICACC-021-2022) A novel way of fabricating SiC-CNFs Composites and properties evaluation using advanced high-speed nanoindentation**M. Shaik^{*1}

1. ARCI, CENTRE FOR NON OXIDE CERAMICS, India

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications**Thermal & Environmental Barrier Coatings - Advanced Characterization and Processing**

Room: Coquina Salon E

Session Chairs: Douglas Wolfe, Pennsylvania State University; Haydn Wadley

1:40 PM**(ICACC-022-2022) Design and Evaluation of a Simulated Engine Materials Testing Facility**P. P. Shelton¹; J. Deijkers¹; H. Wadley^{*1}

1. University of Virginia, Materials Science & Engineering, USA

2:00 PM**(ICACC-023-2022) Monitoring Air Plasma Sprayed Luminescent Thermal Barrier Coating Aging Through Spectral Characterization**Q. Fouliard^{*1}; R. Ghosh¹; S. Raghavan²

1. University of Central Florida, Mechanical and Aerospace Engineering, USA
2. University of Central Florida, Mechanical and Aerospace Engineering, USA

2:20 PM**(ICACC-024-2022) Optimization of Porosity and Mechanical Properties of Atmospheric Plasma Sprayed Ytria-Stabilized Zirconia Coatings by Systematic Parameter Variation**J. Igel^{*1}; E. Bakan¹; S. Schöler¹; O. Guillon¹; R. Vassen¹

1. Forschungszentrum Juelich, IEK-1, Germany

2:40 PM**(ICACC-025-2022) Crack Propagation Driving Forces of APS-TBCs under Thermal Cycling and Isothermal Furnace Test Conditions**K. Chen*¹

1. National Research Council Canada, Aerospace Research Centre, Canada

3:00 PM**Break****3:20 PM****(ICACC-026-2022) Morphologically Informed Finite Element Simulations in Complex Hot-Section Materials**M. Schmitt*¹; J. M. Schreiber¹; B. J. Harder²; D. E. Wolfe³

1. HAMR Industries LLC, USA
2. NASA Glenn Research Center, Environmental Effects and Coatings, USA
3. Pennsylvania State University, USA

3:40 PM**(ICACC-027-2022) Design of T/EBCs for Nb-based alloys for high-temperature operation**Y. Yu*¹; D. L. Poerschke¹

1. University of Minnesota, Department of Chemical Engineering and Materials Science, USA

4:00 PM**(ICACC-028-2022) Impacts of Porosity and Microstructure on the Thermal Radiative Property of Thermal Barrier Coatings**P. Hsu¹; Y. Wang*¹

1. Florida Institute of Technology, Mechanical Engineering, USA

4:20 PM**(ICACC-029-2022) Investigation of High Emissivity, Rare-Earth Stabilized Zirconia Coatings on Carbon/Carbon Composites**A. A. Saad*¹; C. Martinez¹; R. Trice¹

1. Purdue University, Department of Materials Engineering, USA

S3: 19th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology**Overviews and Demonstration: Part II**

Room: Grand Ballroom Salons 1/2

1:30 PM**(ICACC-030-2022) High temperature electrochemical systems: Technology status, barriers and development needs (Invited)**P. Singh*¹

1. University of Connecticut, Materials Science and engineering, USA

2:00 PM**(ICACC-031-2022) Industrial scale SOC stacks manufacturing and large size stack development (Invited)**D. Montinaro*¹

1. SOLIDpower SpA, Italy

2:30 PM**(ICACC-032-2022) Development of Reversible Solid Oxide Cell, Stack, and System Technologies**E. Dogdibegovic*¹; R. Braun²; S. Barnett²; A. Wallace¹; D. Kopechek¹; G. Arkenberg¹; S. Swartz¹; A. Parashar²; M. Mundhwa²; Y. Zhang²; J. Garzanich¹; J. Funk¹; S. Ibanez¹; B. Glenn¹; C. Sellers¹

1. Nexceris, USA
2. Northwestern University, USA
3. Colorado School of Mines, USA

2:50 PM**(ICACC-033-2022) Mk35x technology on the way to market**M. Kusnezoff*¹; S. Megel¹; S. Rothe¹; S. Hielscher¹; J. Schnetter¹; N. Trofimenko¹; J. Schilm¹; W. Beckert¹; J. Schöne¹; G. Ganzer¹; V. Sauchuk¹; A. Michaelis¹

1. Fraunhofer IKTS, Germany

3:10 PM**Break****3:30 PM****(ICACC-034-2022) Electrothermally Balanced Operation of Solid Oxide Electrolysis Cells (Invited)**S. H. Jensen*¹; T. L. Skafte²; O. B. Rizvandi³; A. L. Smitshuysen⁴; H. L. Frandsen⁵; J. V. Høgh²; A. Hauch²; S. S. Araya¹; C. Graves²; M. Mogensen²

1. Aalborg University, Energy, Denmark
2. Noon Energy, USA
3. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark
4. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark
5. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

Interface Optimization

Room: Grand Ballroom Salons 1/2

4:00 PM**(ICACC-035-2022) High Performance Bilayer Oxygen Electrode for Solid Oxide Water Electrolyzers: Experimental and Modeling Results (Invited)**K. Huang*¹

1. University of South Carolina, Mechanical Engineering, USA

4:30 PM**(ICACC-036-2022) Experimental and computational investigations of the multiple impurities effects on the SOFC cathode materials**R. Wang¹; L. Parent²; P. Alpay²; S. Gopalan²; Y. Zhong*¹

1. Worcester Polytechnic Institute, Mechanical Engineering, USA
2. University of Connecticut, Materials Science and Engineering, USA
3. Division of Materials Science & Engineering, USA

4:50 PM**(ICACC-038-2022) Increased Stability in Fuel Cell and Electrolysis Cycles of Tubular Type Solid Oxide Cells using LaGaO₃ Electrolyte by Coinfiltration Effects**T. Ishihara*¹; T. Zhe¹; J. Song¹; A. Takagaki¹

1. Kyushu University, International Institute for Carbon-Neutral Energy Research, Japan

5:10 PM**(ICACC-039-2022) Short Alumina Fiber Reinforced LSCo/LSCF4628 Composite as Cr Gettering Material**Y. Chou*¹; N. L. Canfield¹; J. Kim¹; J. S. Hardy²

1. Pacific Northwest National Lab, Materials, USA
2. Pacific Northwest National Laboratory, Materials Science, USA

S6: Advanced Materials and Technologies for Rechargeable Energy Storage**Advanced Anode and Cathode Materials**

Room: Grand Ballroom Salons 7/8

Session Chairs: Palani Balaya, National University of Singapore; Olivier Guillon, Forschungszentrum Juelich

1:30 PM**(ICACC-040-2022) Ordering phenomena in Li and Na Layered Oxide Electrode Materials (Invited)**C. Delmas*¹

1. CNRS, ICMCB, France

2:00 PM**(ICACC-041-2022) Nanostructured Li-excess High-capacity Electrode Materials for Li Storage Applications (Invited)**N. Yabuuchi*¹

1. Yokohama National University, Japan

2:30 PM**(ICACC-042-2022) Solid electrolyte (SE) coatings on high oxidation state cathode active materials**T. G. Brandt*¹; E. Temeche¹; M. Yu²; R. M. Laine¹

1. University of Michigan, Materials Science & Engineering, USA
2. University of Michigan, Macromolecular Science and Engineering, USA

2:50 PM

(ICACC-043-2022) Nanocomposites Derived from Rice Hull Ash (RHA) for Li⁺ Energy Storage Systems

M. Yu^{*1}; E. Temeche²; R. M. Laine²

1. University of Michigan, Macromolecular Science and Engineering, USA
2. University of Michigan, Materials Science and Engineering, USA

3:10 PM

Break

3:30 PM

(ICACC-044-2022) Kinetically enhanced formation pathway of highly crystalline layered LiCoO₂ at low temperature (Invited)

M. Matsui^{*1}

1. Kobe University, Department of Chemical Science and Engineering, Japan

4:00 PM

(ICACC-045-2022) Reversible oxygen-redox cathodes for energy-efficient rechargeable batteries (Invited)

M. Okubo^{*1}

1. Waseda University, Japan

4:30 PM

(ICACC-046-2022) Famille A₃Ti₅NbO₁₄ avec A=H, Li, Na, K : Insertion et échange ionique

J. Jean¹; A. Neveu¹; P. Boullay¹; V. Pralong^{*1}

1. CNRS ENSICAEN, France

4:50 PM

(ICACC-047-2022) Electrochemical Performance of thermodynamically stabilized nano-LiMn₂O₄ cathode materials

V. Leong^{*1}; K. Nakajima²; R. Castro¹

1. University of California, Davis, Material Science & Engineering, USA

5:10 PM

(ICACC-048-2022) Synthesis and characterization of Li₃PO₄ coated LiMn_{1.5}Ni_{0.5}O₄ spinel as positive electrode for high voltage Li-ion batteries

J. Serrano^{*1}; M. Casas-Cabanas²; D. Carlier¹

1. ICMCB-CNRS, France
2. CIC energiGUNE, Spain

S8: 16th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT16)

Advanced Sintering Technology I

Room: Grand Ballroom Salon 5

Session Chair: Miso Kim, Sungkyunkwan University

1:30 PM

(ICACC-049-2022) Rapid rate sintering of zirconia. Comparison between pixelated sintering and SPS

J. Heintz^{*1}; I. Cornu²; M. Baudier-Pons¹; J. Leon¹; S. Couillaud³; F. Rossignol²

1. ENSCBP-Bordeaux INP, ICMCB, France
2. Institute of Research for Ceramics (IRCER), UMR CNRS 7315, France
3. Galtenco Solutions, France
4. Galtenco Technologies, USA

2:00 PM

(ICACC-050-2022) Effects of AlN and BN addition on the electrical resistivity of pressureless solid-state sintered SiC ceramics

J. Yeom^{*1}; R. Malik¹; Y. Kim¹

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea

2:20 PM

(ICACC-051-2022) Large Scale Ultra High Purity Ceramics by SPS for Advanced Industrial Applications (Invited)

L. S. Walker^{*1}; M. J. Donelon¹

1. Heraeus CONAMIC, USA

2:50 PM

Break

Additive Manufacturing/Novel Forming Technology

Room: Grand Ballroom Salon 5

Session Chair: Olivier Guillon, Forschungszentrum Juelich

3:20 PM

(ICACC-052-2022) First time additively manufactured advanced ceramics by using two-photon polymerization for powder processing (Invited)

J. C. Sanger^{*1}; J. Guenster²

1. BAM Federal Institute for Materials Research and Testing, Germany
2. BAM Federal Institute for Materials Research and Testing, Germany

3:50 PM

(ICACC-053-2022) Processing of ceramics by hybrid binder jetting (Invited)

E. Juste^{*2}; Q. Chen²; M. Lasgorceix¹; A. L. Leriche¹; F. Petit²

1. Universit Polytechnique Hauts-de-France, France, France
2. Belgian Ceramic Research Centre, Belgium

4:20 PM

(ICACC-054-2022) One-Step Densification of 3D Printed YAG Pieces

N. Flores Martinez^{*1}; F. Remondiere²; J. Jouin²; G. Fiore³; S. Oriol³; S. Rossignol²

1. CNES / IRCER, France
2. Laboratoire SPCTS, France
3. CNES, France

4:40 PM

(ICACC-055-2022) Development of manufacturing technology for ceramic cores reproducing internal cooling channels in high pressure turbine aircraft blades

M. Gromada^{*1}; A. Tluczek¹; R. Cygan²; M. Antosz²

1. Institute of Power Engineering – Research Institute, Ceramic Department CEREL, Poland
2. Consolidated Precision Products Poland, Poland

5:00 PM

(ICACC-056-2022) Gel-casting and pixelated sintering of alumina complex shape ceramics

L. Gauzere^{*1}; C. Besnard³; S. Couillaud³; J. Leon⁴; J. Heintz²

1. ICMCB-CNRS, France
2. ENSCBP-Bordeaux INP, ICMCB, France
3. Galtenco Solutions, France
4. Galtenco Technologies, USA

S9: Porous Ceramics: Novel Developments and Applications

Innovations in Processing Methods & Synthesis of Porous Ceramics I

Room: Coquina Salon H

Session Chair: Manabu Fukushima, National Institute of Advanced Industrial Science and Technology (AIST)

1:30 PM

(ICACC-057-2022) Si-C-N-O polymer-derived foams and cellular ceramics via the replica method (Invited)

G. D. Soraru^{*1}

1. University of Trento, Industrial Engineering, Italy

2:00 PM**(ICACC-058-2022) The Potential of Electrospinning for a Versatile Processing of Highly Porous Ceramic Fiber Structures (Invited)**G. Motz^{*}; L. Ribeiro²; S. González²; R. Machado³

1. University of Bayreuth, Ceramic Materials Engineering, Germany
2. University of Santa Catarina, Brazil
3. Federal University of Santa Catarina, Brazil

2:30 PM**(ICACC-059-2022) Fabrication of Functional 3D Porous Ceramic Nanostructures by Atomic Layer Deposition**A. Gómez Gómez¹; R. Zierold²; C. Hedrich²; R. Blick²; K. P. Furlan^{*1}

1. Hamburg University of Technology, Institute of Advanced Ceramics, Integrated Materials Processing group, Germany
2. University of Hamburg, Center for Hybrid Nanostructures, Germany

2:50 PM**Break****Innovations in Processing Methods & Synthesis of Porous Ceramics II**

Room: Coquina Salon H

Session Chair: Silvio Delvasto, Universidad del Valle

3:20 PM**(ICACC-060-2022) Development of microstructural-controllable forming technologies of porous ceramics (Invited)**W. Zhai^{*1}

1. National University of Singapore, Mechanical Engineering, Singapore

3:50 PM**(ICACC-061-2022) Properties and their estimation of mullite based thermal insulators prepared by gelation-freezing with alumina nanofibers**M. Fukushima^{*1}

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

4:10 PM**(ICACC-063-2022) Process Development for Controlling Amount and Alignment of Porosity in Silicon Nitride Ceramics for RF Radomes**A. Kimery^{*1}; C. Martinez¹; R. Trice¹

1. Purdue University, Department of Materials Engineering, USA

4:30 PM**(ICACC-064-2022) Optimizing surfactant templating of yttria-stabilized zirconia aerogels for high-temperature applications: Effect of cationic surfactant**R. C. Walker^{*1}; J. L. Stokes²; F. Hurwitz²; H. Guo³; J. K. Ferri¹

1. Virginia Commonwealth University, Chemical and Life Science Engineering, USA
2. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
3. NASA Glenn Research Center, USA
4. Universities Space Research Association, USA

4:50 PM**(ICACC-065-2022) Combined Photopolymerization and Freeze-Casting for Porous Silicon-Based Ceramics**L. Quinn^{*1}; K. Faber²

1. California Institute of Technology, USA
2. California Institute of Technology, USA

S12: On the Design of Nano-Laminated Ternary Transition Metal Carbides/Nitrides (MAX Phases) and Borides (MAB Phases), Solid Solutions Thereof, and 2D Counterparts (MXenes, MBenes)**Design of Novel Compositions and Manufacturing Methods**

Room: Coquina Salon F

Session Chairs: Michel Barsoum, Drexel University; Christopher Shuck, Drexel University

1:30 PM**(ICACC-066-2022) Expanding the structural and elemental space of MAX phases and MXenes – from carbides to borides**J. Rosen^{*1}

1. Department of Physics, Chemistry and Biology, Sweden

2:00 PM**(ICACC-067-2022) Synthesis of MXenes by etching in hydrothermal conditions (Invited)**A. Zhou^{*1}; S. Jin¹; Y. Guo¹

1. Henan Polytechnic University, School of Materials Science and Engineering, China

2:30 PM**(ICACC-068-2022) Synthesis of Solid-Solution MXenes with Tunable Electronic, Optical, and Electrochemical Properties (Invited)**C. E. Shuck^{*2}; M. Han²; K. Maleski²; L. Wang²; Y. Yang¹; J. Glazar²; A. Foucher²; K. Hantanasirisakul²; A. Sarycheva²; N. Frey²; X. Wang²; S. May¹; V. Shenoy²; E. Stach³; Y. Gogotsi²

1. Drexel University, Materials Science and Engineering, USA
2. Drexel University, A.J. Drexel Nanomaterials Institute, USA
3. University of Pennsylvania, Materials Science and Engineering, USA

3:00 PM**(ICACC-069-2022) Synthesis and microstructure characterization of (V_xTi_{1-x})₃AlC₂ with x = 0-0.9, and their derivative two-dimensional carbides, MXenes**V. Kotasthane^{*1}; Z. Tan¹; D. Holta¹; I. Echols²; J. Lutkenhaus²; M. Green²; M. Radovic¹

1. Texas A&M University, Department of Materials Science and Engineering, USA
2. Texas A&M University, Artie McFerrin Department of Chemical Engineering, USA

3:20 PM**Break****3:40 PM****(ICACC-070-2022) Growth of Ti₃SiC₂ coatings onto SiC monoliths from molten salts**B. Chahhou^{*1}; J. Roger²

1. LCTS, CNRS, France
2. University of Bordeaux, Chemistry, France

4:00 PM**(ICACC-071-2022) Multifunctional performance of Ti₂AlC MAX phase composites**J. Gonzalez-Julian^{*2}; S. Badie¹; M. Belmonte³; F. Jung⁴; T. Gries⁵; R. Bermejo⁵

1. Forschungszentrum Juelich, Germany
2. RWTH Aachen University, Department of Ceramics and Refractory Materials, Germany
3. Institute of Ceramics and Glass, CSIC, Spain
4. RWTH Aachen University, Institut für Textiltechnik, Germany
5. Montanuniversitaet Leoben, Institut fuer Struktur- und Funktionskeramik, Austria

4:20 PM**(ICACC-072-2022) Study and optimization of Ti₂AlC and Ti₃SiC₂ MAX phase foams processed by colloidal methods**S. A. Tsipas^{*1}; B. Ferrari²

1. Universidad Carlos III de Madrid, Spain
2. Instituto de Cerámica y Vidrio, Spain

4:40 PM**(ICACC-073-2022) Synthesis, microstructure characterizations, and mechanical properties of $(Ti_xNb_{1-x})_2AlC$ solid solution with $x = 0-1$** Z. Tan^{*}; T. ElMeligy³; M. Radovic²; M. Barsoum³

1. Texas A&M University, MSEN, USA
2. Texas A&M University, Materials Science & Engineering, USA
3. Drexel University, Materials Science and Engineering, USA

5:00 PM**(ICACC-074-2022) Physical vapour deposition of MoAlB thin films and direct MoBene formation**S. Evertz¹; P. Pöllmann¹; D. Holzapfel¹; E. Mayer¹; R. Sahu¹; B. Dimitri¹; J. Achenbach¹; C. Scheu¹; J. M. Schneider^{*}

1. RWTH Aachen University, Materials Chemistry, Germany

5:20 PM**(ICACC-075-2022) On the sustainable manufacturing of MAX and MAB phases - a perspective**M. Dey^{*}; S. Javaid¹; C. Matzke¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems

Radiation Damage and Defect Production

Room: Grand Ballroom Salon 4

1:30 PM**(ICACC-076-2022) Degradation of CVD SiC in different LWR water chemistries during synergistic proton irradiation/corrosion tests (Invited)**K. Lambrinou^{*}; B. T. Clay¹; R. Hanbury²; K. Sun²; D. Frazer²; P. Xu⁴; J. Silverstein³; K. Yano⁵; S. Riechers⁶; E. J. Lahoda⁶; C. Deck⁷; R. Oelrich⁷; G. S. Was²

1. University of Huddersfield, School of Computing & Engineering, United Kingdom
2. University of Michigan, USA
3. Idaho National Lab, USA
4. Idaho National Lab, USA
5. Pacific Northwest National Lab, USA
6. Westinghouse Electric Company LLC, USA
7. General Atomics, USA

2:00 PM**(ICACC-077-2022) Triple ion beam irradiation of glass-ceramics materials for nuclear fusion technology**V. Casalegno^{*}; D. Torsello²; G. Divitini³; G. Ghigo²; R. gerbaldo²; m. fracasso²; F. D'Isanto²; M. Lai¹; L. Roux¹; G. GUTIERREZ¹; C. Ducati¹; C. CABET⁴; M. Ferraris¹; L. Gozzelino²

1. Politecnico di Torino, DISAT, Italy
2. Politecnico di Torino, Department of Applied Science and Technology, Italy
3. University of Cambridge, Department of Materials Science & Metallurgy, United Kingdom
4. Université Paris-Saclay, CEA, Service de Recherches de Métallurgie Physique, France

2:20 PM**(ICACC-078-2022) Neutron irradiation effects in glassy carbon**J. D. Arregui-Mena^{*}; T. Koyanagi²; Y. Katoh³

1. Oak Ridge National Lab, Nuclear Materials Science & Technology Group, USA
2. Oak Ridge National Laboratory, USA
3. Oak Ridge National Laboratory, USA

2:40 PM**(ICACC-079-2022) In-situ temperature dependent ion irradiation tolerance of SiFeOC nanocomposite**K. Lu^{*}; S. Singh¹

1. Virginia Tech, USA

3:00 PM**Break****High-temperature Ceramics for Nuclear Thermal Propulsion**

Room: Grand Ballroom Salon 4

3:20 PM**(ICACC-080-2022) An Evaluation of Zirconium Carbide - Uranium Mononitride Ceramic Composites Fabricated by SPS Technique for Nuclear Thermal Propulsion Applications (Invited)**N. D. Jerred^{*}; R. Scott¹; S. R. Hamilton²; J. Schweitzer³; D. Dempsey⁴; R. O'Brien⁵; D. Burns⁶

1. Idaho National Lab, Advanced Fuels Manufacturing and Development, USA
2. University of Florida, Materials Science and Engineering, USA
3. Colorado School of Mines, Materials Science, USA
4. Idaho National Lab, Irradiation Testing, USA
5. Idaho National Lab, Advanced Manufacturing, USA
6. Idaho National Lab, Space Nuclear Power & Isotope Systems, USA

3:50 PM**(ICACC-081-2022) Diffusion Behavior of UN/ZrC CERCER Composites**S. R. Hamilton^{*}; N. D. Jerred²; R. Scott²; V. Miller¹

1. University of Florida, Materials Science and Engineering, USA
2. Idaho National Lab, Fuel Fabrication, USA

4:10 PM**(ICACC-082-2022) Near net Shape Fabrication and Characterization of Cermet Nuclear Thermal Propulsion Fuel Forms**N. H. Blatt^{*}; J. Watts¹; G. Hilmas¹

1. Missouri University of Science & Technology, Materials Science and Engineering, USA

4:30 PM**(ICACC-083-2022) Thermochemical Modeling of Space Nuclear Thermal Propulsion Fuel Materials**G. Costa^{*}; D. J. Quade¹; K. Palomares²; M. Singh³; T. M. Besmann⁴

1. NASA Glenn Research Center, USA
2. Analytical Mechanics Associates, USA
3. Ohio Aerospace Institute, USA
4. University of South Carolina, Nuclear Engineering, USA

4:50 PM**(ICACC-084-2022) Characterization of hot hydrogen-facing materials in nuclear thermal propulsion systems**W. Searight^{*}; L. Winfrey¹

1. Pennsylvania State University, Nuclear Engineering, USA

5:10 PM**(ICACC-085-2022) Spark plasma sintering fabrication and testing of zirconium-carbide matrix surrogate fuels for nuclear thermal propulsion**N. Gaffin^{*}; K. Palomares²; J. Milner⁴; S. J. Zinkle³

1. University of Tennessee - Knoxville, Nuclear Engineering, USA
2. Analytical Mechanics Associates, Inc., USA
3. University of Tennessee, USA
4. NASA Glenn Research Center, USA

S18: Ultra-High Temperature Ceramics**Behavior under Extreme Environments and Ultra-high Temperatures**

Room: Flagler A/B

Session Chair: Lavina Backman, U.S. Naval Research Laboratory

1:30 PM**(ICACC-086-2022) To mix or not to mix: Synthesizability entropy-descriptors and the controversial role of vibrations in the stability of high-entropy ceramics**S. Curtarolo^{*}

1. Duke University, USA

2:00 PM**(ICACC-087-2022) Modeling the transport properties of high entropy-stabilized diborides**R. Sakidja^{*1}; A. B. Niraula¹; B. Timalisina¹; N. Octoviawan¹; W. Fahrenholtz²; G. Hilmas²

1. Missouri State University, Physics, Astronomy and Materials Science, USA
2. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

2:20 PM**(ICACC-088-2022) Predicting Oxide Scale Thickness of Ultra High-Temperature Diborides Tested During Isothermal Oxidation using Random Forest Regressor**G. A. Bianco Atria^{*1}; A. Nisar¹; C. Zhang¹; B. Boesi¹; A. Agarwal¹

1. Florida International University, Mechanical & Materials Engineering, USA

2:40 PM**(ICACC-089-2022) Revisiting the Anomalous Hardness in the Transition Metal Carbides and Nitrides**B. R. Watkins¹; G. Thompson²; C. R. Weinberger^{*1}

1. Colorado State University, Department of Mechanical Engineering, USA
2. University of Alabama, Metallurgical and Materials Engineering, USA

3:00 PM**Break****3:20 PM****(ICACC-090-2022) UHTC Components for Transpiration Cooling of Components for Hypersonic Flight (Invited)**L. J. Vandeperre^{*1}; R. Hedgecock²; M. Watson¹; I. Elizarova¹; M. E. Roher²; H. S. Iftij³; T. Hermann³; M. McGilvray³

1. Imperial College London, Materials, United Kingdom
2. Imperial College, Materials, United Kingdom
3. University of Oxford, Oxford Thermofluids Institute, United Kingdom

3:50 PM**(ICACC-091-2022) A Case Study on the Pest Oxidation of MoSi₂ nanocomposites**I. Hammood^{*1}; G. Barber¹; X. Han¹

1. Oakland University, Mechanical Engineering, USA

4:10 PM**(ICACC-092-2022) Residual Strength of Turbine grade Ceramic matrix Composites after being subjected to solid particle erosion at Elevated temperature**F. Mirza^{*1}; R. P. Panakarajupally¹; G. N. Morscher²; F. Abdi²; S. R. Choi⁴

1. University of Akron, Mechanical engineering, USA
2. University of Akron, Mechanical Engineering Dept., USA
3. AlphaSTAR Corporation, USA
4. Naval Air system command, USA

4:30 PM**(ICACC-093-2022) Thermal properties of high-entropy boride ceramics**L. Feng^{*1}; W. Fahrenholtz²; G. Hilmas²

1. Missouri University of Science & Technology, Materials Science and Engineering, USA
2. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

4:50 PM**(ICACC-094-2022) High temperature thermochemical and thermophysical properties of ZrB₂ up to 3400 C (Invited)**S. Ness¹; F. Thorpe¹; E. M. Sobalvarro Converse²; J. Cahill²; G. King²; S. J. McCormack^{*1}

1. University of California, Davis, Materials Science and Engineering, USA
2. Lawrence Livermore National Laboratory, MSD, USA

5:20 PM**(ICACC-095-2022) Ultra-high temperature ceramic composites with exceptional strength**L. Silvestroni^{*1}; N. Gilli¹; J. Watts¹; W. Fahrenholtz³

1. CNR, ISTECC, Italy
2. Missouri University of Science & Technology, Materials Science and Engineering, USA
3. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

11th Global Young Investigator Forum**Ceramics for Functional and Biomedical Applications**

Room: Coquina Salon G

1:30 PM**(ICACC-096-2022) Cerium oxide nanoparticles prevent cancer relapse and resistance, acting as nanozymes "resolving" tumor inflammation (Invited)**F. Corsi^{*1}; S. Briganti²; A. Pelliccia¹; F. Capradossi¹; S. Liccoccia¹; E. Traversa³; L. Ghibelli¹

1. University of Rome Tor Vergata, Italy
2. San Gallicano Dermatological Institute, IRCCS, Italy
3. King Abdullah University of Science and Technology, China

2:00 PM**(ICACC-097-2022) A Study of Lithography-Based Additive Manufacturing of Ceria Ceramics**R. Fordham^{*1}; S. K. Sundaram²; S. M. Allan¹

1. Lithoz America, LLC, USA
2. Alfred University, Inamori School of Engineering, USA

2:20 PM**(ICACC-098-2022) 3D printed ceramic parts for orthopaedic joint implants: tribological behaviour under dry and wet conditions (Invited)**A. Paterlini^{*1}; A. Stamboulis¹; V. Turq²

1. University of Birmingham, Italy
2. CIRIMAT, France

3:00 PM**Break****Additive Manufacturing of Ceramics and Ceramic-based Composites**

Room: Coquina Salon G

3:30 PM**(ICACC-099-2022) Process, Structure, and Property Relationships for Heterogenous B₄C-SiC Materials Fabricated via Additive Manufacturing (Invited)**J. Pelz^{*1}; N. Ku²; T. Shoulders³; S. Figueroa⁴; M. Meyers⁴; L. Vargas-Gonzalez²

1. US Army Research Laboratory, DEVCOM, USA
2. DEVCOM - Army Research Laboratory, Ceramics and Transparent Materials Branch, USA
3. CCDC Army Research Laboratory, USA
4. University of California, San Diego, USA

4:00 PM**(ICACC-100-2022) Carbon/Carbon Composites via Direct Ink Writing of Phenolic Resin-Based Inks (Invited)**C. Clarkson^{*1}; W. J. Costakis¹; C. Wyckoff¹; L. M. Rueschhoff¹; M. B. Dickerson¹; H. Koerner¹

1. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

4:30 PM**(ICACC-101-2022) Additive Manufacturing combined with Colloidal Assembly: a novel route to fabricate ceramic-based macroporous materials**B. Winhard^{*1}; G. Schneider¹; K. P. Furlan²

1. Institute of Advanced Ceramics, Hamburg University of Technology, Germany
2. Hamburg University of Technology, Institute of Advanced Ceramics, Integrated Materials Processing group, Germany

4:50 PM**(ICACC-102-2022) Formulation, Printing, and Processing of UV-active Glass-Loaded Inks (Invited)**R. Walton^{*1}; N. Dudukovic¹; T. Yee¹; M. Ellis¹; D. Nguyen¹; A. Browar¹; E. Duoss¹; R. J. Dylla-Spears²

1. Lawrence Livermore National Lab, USA
2. Lawrence Livermore National Laboratory, Optics and Materials Science & Technology, USA

FS3: Molecular-level Processing and Chemical Engineering of Functional Materials

Molecular Precursors I

Room: Ponce de Leon

Session Chair: Peter Kroll, University of Texas, Arlington

1:30 PM

(ICACC-103-2022) Molecular Approaches to Functional Inorganic Thin Film Oxides (Invited)

J. J. Schneider*¹

1. Technische Universität Darmstadt, Department of Chemistry, Germany

2:00 PM

(ICACC-104-2022) Direct-Writing of Inorganic Nanostructures (Invited)

S. Barth*¹; f. Jungwirth¹; F. Porrati¹; M. Huth¹

1. Goethe University Frankfurt, Germany

2:30 PM

(ICACC-105-2022) Complex composition and structure functional nano-materials through solution (Invited)

G. Westin*¹

1. Uppsala University, Sweden

3:00 PM

Break

Energy Applications I

Room: Ponce de Leon

Session Chair: Corson Cramer, Oak Ridge National Lab

3:20 PM

(ICACC-106-2022) Carbon rich-polymer derived ceramic fibers and mats for rechargeable batteries and supercapacitors (Invited)

S. Mujib¹; M. Anstine¹; C. Gervais²; G. Singh*¹

1. Kansas State University, Mechanical and Nuclear Engineering Dept., USA
2. Sorbonne Université, France

3:50 PM

(ICACC-107-2022) Charge Carrier Transport in Polymer-Derived Silicon Oxycarbides – A Comparative Monolith vs. Thin Film Study

E. Ionescu*¹

1. Technical University Darmstadt, Materials Science, Germany

4:10 PM

(ICACC-108-2022) 2D materials-based nanostructured interfaces for membrane and energy application (Invited)

P. Miele*¹

1. Ecole Nationale Supérieure de Chimie de Montpellier, France

4:40 PM

(ICACC-109-2022) Structural evolution and functionality of polymer derived SiOC ceramics (Invited)

K. Lu*¹; S. Singh¹; N. Yang¹

1. Virginia Tech, USA

5:10 PM

(ICACC-110-2022) Defective structure of nitrogen-doped carbons obtained through pyrolysis/ammonolysis of preceramic polymers

A. Tamayo*¹; B. Perez-Roman¹; F. Rubio¹; M. A. Rodriguez²; J. Rubio¹

1. Institute of Ceramics and Glass, CSIC, Spain
2. University of Extremadura, Spain

Tuesday, January 25, 2022

Emerging Technologies Symposium

Materials for Sustainable Energy and Environmental Systems I

Room: Coquina Salon D

Session Chairs: Palani Balaya, National University of Singapore; Katalin Balazsi, Centre for Energy Research HAS

8:30 AM

(ICACC-111-2022) Advanced Ceramics and Coatings for Mineral, Oil & Gas Processing and Power Generation (Invited)

E. Medvedovski*¹

1. Endurance Technologies Inc., Canada

9:00 AM

(ICACC-112-2022) Application of sputtered ceramic TiC/ a:C thin films with different structures by changing the deposition parameters (Invited)

K. Balazsi*¹; C. Balazsi²

1. Centre for Energy Research HAS, Thin Film Physics, Hungary
2. ELKH Centre for Energy Research, Hungary

9:30 AM

(ICACC-113-2022) Advanced ceramic coating with RTIC phenomenon (Invited)

J. Akedo*¹; Y. Matsubayashi¹; K. Shinoda¹

1. National Institute of Advanced Industrial Science and Technology (AIST), ACT, Japan

10:00 AM

Break

Materials for Sustainable Energy and Environmental Systems II

Room: Coquina Salon D

Session Chairs: Palani Balaya, National University of Singapore; Katalin Balazsi, Centre for Energy Research HAS

10:20 AM

(ICACC-114-2022) Engineered porosity electrodes for high performance Li-ion batteries (Invited)

M. Azami Ghadkolai¹; S. Creager²; R. Bordia*¹

1. Clemson University, Materials Science and Engineering, USA
2. Clemson University, Chemistry, USA

10:50 AM

(ICACC-115-2022) How Do We Design High Power Li-ion cells Without Compromising Safety? (Invited)

P. Balaya*¹; V. Ramar¹; H. S. Lee¹

1. National University of Singapore, Department of Mechanical Engineering, Singapore

11:20 AM

(ICACC-116-2022) Electrocatalysis of Double Perovskite (1 + x) PrCoO₃- (1 - x) BaCoO₃, Ruddlesden popper Sm_{2-x}Sr_xNiO_{4-δ}: bulk and thin film electrodes (Invited)

P. Singh*¹

1. Indian Institute of Technology(BHU), Physics, India

Emergent Materials and Technologies III

Room: Coquina Salon D

Session Chairs: Young-Wook Kim, University of Seoul; Walter Krenkel, University of Bayreuth

1:30 PM**(ICACC-117-2022) Ultra-high Creep Resistant SiC Ceramics (Invited)**P. Sajgalik*¹

1. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Ceramic Department, Slovakia

2:00 PM**(ICACC-119-2022) Development of Ceramic Components for Energy Efficient Combustion Technology for Gas Burner Applications (Invited)**L. K. Sharma*¹; R. T²; H. Rao³

1. Mahamana Ceramic Development Society, India
2. Agnisumukh Energy Solutions Pvt. Ltd, India
3. Agnisumukh Energy Solutions Pvt. Ltd, India

2:30 PM**Break****Emergent Materials and Technologies IV**

Room: Coquina Salon D

Session Chairs: Young-Wook Kim, University of Seoul; Walter Krenkel, University of Bayreuth

3:20 PM**(ICACC-120-2022) Effect of grain boundaries on the electrical resistivity of SiC ceramics at the micron scale (Invited)**Y. Kim*¹

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea

3:50 PM**(ICACC-121-2022) Slurry-based oxide fiber composites: Microstructures, properties and applications (Invited)**W. Krenkel*¹; G. Puchas²; J. Winkelbauer²

1. University of Bayreuth, Germany
2. University of Bayreuth, Ceramic Materials Engineering, Germany

4:20 PM**(ICACC-122-2022) High Thermal Conductivity Nitride Ceramics: Comprehensive Study of AlN and Si₃N₄ (Invited)**D. Kim*¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea

4:50 PM**(ICACC-123-2022) Evaluation of meso-scale mechanical properties of Si₃N₄ ceramic surface after environmental degradation (Invited)**J. Tatami*¹; M. Iijima¹; T. Takahashi²; T. Yahagi²

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

S1: Mechanical Behavior and Performance of Ceramics & Composites**Processing-Microstructure-Mechanical Properties Correlation III**

Room: Coquina Salon B

8:30 AM**(ICACC-125-2022) Improving the performance of Si₃N₄ RTPs**J. Bakardjiev*¹; B. Ramirez²; E. Zschippang²; M. Reinger¹

1. Industriekeramik Hochtren GmbH, Germany
2. Fraunhofer IKTS, Germany

8:50 AM**(ICACC-126-2022) Supercrystalline ceramic-based nanocomposites: Boosting and controlling the mechanical behavior of these new multifunctional materials**D. Giuntini*¹; B. Bor²; B. Domenech²; A. Plunkett²; G. Schneider²

1. Eindhoven University of Technology, Netherlands
2. Hamburg University of Technology, Germany

9:10 AM**(ICACC-127-2022) On the kink-band formation in true and brittle micas**H. J. Rathod*¹; M. Radovic¹; A. Srivastava¹

1. Texas A&M University, Materials Science & Engineering, USA

9:30 AM**Break****Mechanical Characterization and Techniques I**

Room: Coquina Salon B

10:20 AM**(ICACC-128-2022) Mechanical shock of Ni-YSZ and metastable ceramics**S. Bishop*¹; D. Lowry¹; K. T. Strong²; T. Diebold²; J. Carmichael²; A. Peretti¹; C. Battaile¹; L. Biedermann¹; B. Branch²; S. Dean²; J. Mahaffey²; S. Murray²; C. Riley²; J. Park¹; M. Knudson³

1. Sandia National Laboratories, Materials, USA
2. Sandia National Laboratories, Material Mechanics and Tribology, USA
3. Sandia National Laboratories, Mechanics, USA

10:40 AM**(ICACC-129-2022) Modified Reflective Digital Gradient Sensing (R-DGS) for Impact Applications**P. Malhotra*¹; C. Miao¹; J. Moreno¹; M. Shaeffer¹; K. Ramesh¹

1. Johns Hopkins University, Mechanical Engineering, USA

11:00 AM**(ICACC-130-2022) Contact damage behaviour of alumina-based ceramic architectures with tailored microstructures**J. Schlacher*¹; A. Jabr¹; A. Hofer¹; R. Papšik¹; R. Bermejo¹

1. Montanuniversitaet Leoben, Austria

11:20 AM**(ICACC-131-2022) Solid Particle Erosion Behavior of Oxide and Non-Oxide based Ceramic Matrix Composites (CMCs) in a Simulated Turbine Engine Environment**R. Panakarajupally*¹; F. Mirza²; J. El Rassi³; G. N. Morscher⁴; F. Abdi⁵; S. R. Choi⁶

1. University of Akron, Mechanical Engineering, USA
2. University of Akron, Mechanical engineering, USA
3. The University of Akron, Mechanical Engineering, USA
4. University of Akron, Mechanical Engineering Dept., USA
5. AlphaSTAR Corporation, USA
6. naval air systems command, USA

11:40 AM**(ICACC-132-2022) Damage Evolution in Quasi-statically Indented Oxide/Oxide Ceramic Matrix Composite: An Experimental Investigation**V. Sodisetty*¹; H. James²; K. Lee¹; A. K. Singh¹

1. Baylor University, Mechanical Engineering, USA
2. Baylor University, Mechanical Engineering, USA

Mechanical Characterization and Techniques II

Room: Coquina Salon B

1:30 PM**(ICACC-133-2022) Full field characterisation of oxide CMCs using in situ X-ray computed micro-tomography under load at temperatures (Invited)**D. Liu*¹

1. University of Bristol, United Kingdom

2:00 PM**(ICACC-134-2022) A Comparative Study on X-ray Computed Tomography and Flash Thermography for Non-destructive Evaluation of Oxide/Oxide Ceramic Matrix Composites**H. James*¹; V. Sodisetty²; Z. Benedict³; K. Lee²; A. K. Singh²

1. Baylor University, Mechanical Engineering, USA
2. Baylor University, Mechanical Engineering, USA
3. Spirit Aerosystems, USA
4. Baylor University, Mechanical Engineering, USA

2:20 PM**(ICACC-135-2022) Utilizing Electrical Resistance in SiC-Based Melt-infiltrated Composites at Ply Level with the aid of AE and DIC for Monitoring Crack Growth**J. El Rassi*²; R. Panakarajupally¹; G. N. Morscher²

1. University of Akron, Mechanical Engineering, USA
2. University of Akron, Mechanical Engineering Dept., USA

2:40 PM**(ICACC-136-2022) Elastic anisotropy of spark plasma sintered ceramics and composites studied by resonant ultrasound spectroscopy**M. Koller*¹; P. Sedlak¹; C. Ramirez²; P. Miranzo²; M. Belmonte²; M. I. Osendi²; A. Loganathan³; A. Agarwal³; H. Seiner¹

1. Czech Academy of Sciences, Institute of Thermomechanics, Czechia
2. Institute of Ceramics and Glass, CSIC, Ceramics, Spain
3. Florida International University, Materials Engineering, USA

3:00 PM**Break****Mechanical Characterization and Techniques III**

Room: Coquina Salon B

3:20 PM**(ICACC-137-2022) The Versatility of HVOF Burner Rig Testing for Ceramic Matrix Composite Evaluation**G. N. Morscher*¹; R. P. Panakarajupally¹; L. Hoffman¹

1. University of Akron, Mechanical Engineering Dept., USA

3:40 PM**(ICACC-138-2022) A versatile lamp furnace for in-situ high temperature studies on materials in air and controlled atmospheres up to 2000°C (Invited)**P. Sarin*¹

1. Oklahoma State University, Materials Science and Engineering, USA

4:00 PM**(ICACC-139-2022) CMC-Tube Compressive Strength of Components Used in High-Temperature Reactor (HTR) Applications: ASTM Draft Standard Using Axial, Compressive Loading**M. G. Jenkins*¹; J. E. Gallego¹

1. Bothell Engineering and Science Technologies, USA

4:20 PM**(ICACC-140-2022) Resin-encapsulated minicomposites for evaluating tensile properties of SiC/SiC composites**N. Han*¹; V. Christensen¹; E. B. Callaway²; F. W. Zok¹

1. UC Santa Barbara, Materials Science and Engineering, USA
2. Pratt & Whitney, USA

4:40 PM**(ICACC-141-2022) Effect of microstructure on matrix cracking and fiber fracture in unidirectional SiC-SiC composites**A. Badran*¹; D. B. Marshall¹; E. Maillet²

1. University of Colorado Boulder, Aerospace Engineering, USA
2. GE Research, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications**Advanced Environmental Barrier Coatings**

Room: Coquina Salon E

Session Chairs: Kang Lee, NASA Glenn Research Center; Cory Parker, University of Virginia

8:40 AM**(ICACC-142-2022) Steam Oxidation Behavior of Yb₂Si₂O₇-Based Environmental Barrier Coatings**K. Lee*¹; M. J. Presby¹; A. Garg¹; W. Jennings²

1. NASA Glenn Research Center, USA
2. Vantage Partners, USA

9:00 AM**(ICACC-143-2022) A Study of the Reactions and Phase Transformations of Ytterbium Disilicates Undergoing Water Vapour Corrosion for Environmental Barrier Coating Applications**S. H. McCormack*¹; J. Martins¹; H. Cao¹; P. Xiao¹

1. University of Manchester, Materials, United Kingdom

9:20 AM**(ICACC-144-2022) Self-healing Behavior of Sc₂Si₂O₇ with Silicon Carbide for Environmental Barrier Coatings**S. Kim*¹; N. Nagashima²; Y. Matsushita²; B. Jang¹

1. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan
2. National Institute for Materials Science (NIMS), Japan

9:40 AM**(ICACC-145-2022) Steam and air cyclic oxidation kinetics of mixed yttrium and ytterbium disilicate environmental barrier coatings**C. G. Parker*¹; M. Sweet²; P. Stack³; M. Lance¹; B. Pint¹; K. Kane¹

1. Oak Ridge National Laboratory, Materials Science and Technology Division, USA
2. Praxair Surface Technologies, USA
3. University of Akron, USA

10:00 AM**Break****10:20 AM****(ICACC-146-2022) Accelerated oxidation in ytterbium silicate environmental barrier coatings**K. Kane*¹; E. Garcia²; M. Lance¹; C. G. Parker¹; S. Sampath²; B. Pint¹

1. Oak Ridge National Laboratory, Materials Science and Technology Division, USA
2. Stony Brook University, Center for Thermal Spray Research, USA

10:40 AM**(ICACC-147-2022) Measurements of thermal residual stresses in β -RE₂Si₂O₇ environmental barrier coating layers using Raman spectroscopy**A. Setlur*¹; R. Davis¹; R. Sarrafi-Nour¹; C. Johnson¹

1. GE Global Research, USA

11:00 AM**(ICACC-148-2022) Phase and Anisotropic Thermal Expansion in Mixed and High Entropy Rare Earth Disilicates**A. Salanova*¹; M. J. Ridley¹; R. Guarriello²; C. Toher³; S. Curtarolo⁴; E. J. Opila⁵; J. Ihlefeld²

1. University of Virginia, Materials Science and Engineering, USA
2. University of Virginia, Department of Materials Science and Engineering, USA
3. University of Virginia, Materials Science and Engineering, USA
4. Duke University, Mechanical Engineering and Material Science, USA
5. University of Virginia, Materials Science and Engineering, USA

Advanced Environmental Barrier Coatings-II

Room: Coquina Salon E

Session Chair: Bryan Harder, NASA Glenn Research Center

1:30 PM**(ICACC-149-2022) Yb₂Si₂O₇ environmental barrier coatings prepared using electrophoretic deposition**E. Yilmaz*; P. Xiao¹

1. University of Manchester, Material, United Kingdom

1:50 PM**(ICACC-150-2022) Thermomechanical and thermochemical stability of hafnia and hafnia-hafnon composite environmental barrier coatings**A. R. Ericks*; C. S. Holgate¹; C. G. Levi¹; F. W. Zok¹

1. University of California, Santa Barbara, USA

2:10 PM**(ICACC-151-2022) Solid Particle Erosion of Environmental Barrier Coatings**M. J. Presby*; B. J. Harder¹

1. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA

2:30 PM**(ICACC-152-2022) The Influence of Al₂O₃ Addition on Sintering and Water Vapor Corrosion of Ytterbium Disilicate for Environmental Barrier Coating Applications**A. H. Paksoy*; P. Xiao¹

1. The University of Manchester, Department of Materials, United Kingdom

2:50 PM**Break****CMAS related issues and mitigation strategies**

Room: Coquina Salon E

3:20 PM**(ICACC-153-2022) Comparison of the performance of EB-PVD GZO and Yttria rich zirconate coatings against CMAS infiltration (Invited)**R. Naraparaju*; P. Mechnich²; U. Schulz¹; C. Mikulla²

1. DLR - German Aerospace Center, Materials Research, Germany
2. DLR - German Aerospace Center, Institute of Materials Research, Germany

3:50 PM**(ICACC-154-2022) The Effect of Iron Oxide Additions to the Phase Stability of Yttrium-Garnet in CMAS Melts**C. S. Holgate*; R. Rodriguez¹; E. P. Godbole²; D. L. Poerschke²; C. Levi¹

1. University of California, Santa Barbara, Materials, USA
2. University of Minnesota, Chemical Engineering and Materials Science, USA

4:10 PM**(ICACC-155-2022) Multiphase rare earth zirconate-aluminate T/EBC materials with enhanced resistance against CMAS attack**E. P. Godbole*; D. L. Poerschke²

1. University of Minnesota, Twin Cities, Chemical engineering and materials science, USA
2. University of Minnesota, Chemical Engineering and Materials Science, USA

4:30 PM**(ICACC-156-2022) CMAS Mitigation in Model YAIO₃ Environmental Barrier Coatings: Effect of Crystal Orientation on Apatite Nucleation and Growth**A. M. Velazquez Plaza*; A. Krause¹

1. University of Florida, Materials Science and Engineering, USA

4:50 PM**(ICACC-157-2022) Considerations for the testing of CMAS deposition on TBCs**N. E. Jonsson*; E. H. Jordan²; B. Jun³

1. University of Connecticut, Institute of Material Science, USA
2. University of Connecticut, Mechanical Engineering, USA
3. University of Connecticut, Materials Science, USA

5:10 PM**(ICACC-158-2022) Exploring CMAS-Steam Synergy on Yb₂Si₂O₇ Degradation**C. Luckhardt*; E. J. Opila²

1. University of Virginia, Department of Materials Science & Engineering, USA
2. University of Virginia, Materials Science and Engineering, USA

S3: 19th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology**Overviews and Demonstration: Part I**

Room: Grand Ballroom Salons 1/2

8:30 AM**(ICACC-159-2022) Overview of U.S. DOE's Solid Oxide Fuel Cell Program (Invited)**P. Burke*¹

1. U.S. Department of Energy, National Energy Technology Laboratory, USA

9:00 AM**(ICACC-160-2022) Governmental R&D Support for Ceramic based Electrolysers and Fuel Cells in Germany (Invited)**A. Kilian*; G. Kampwerth¹; J. Seier¹

1. Forschungszentrum Jülich GmbH, Projektträger Jülich, Germany

9:30 AM**(ICACC-161-2022) High efficient hydrogen and eFuel production with high temperature electrolysis (SOEC) - latest activities from AVL List GmbH (Invited)**R. Schauerl*¹

1. AVL List GmbH, Research & Innovation, Austria

10:00 AM**Break****10:20 AM****(ICACC-162-2022) SOFC systems for commercial sector (COMSOS EU project): technical analysis of real installations, and exploitation assessment**M. Santarelli*; M. Gandiglio²

1. Politecnico di Torino, Energy, Italy
2. Politecnico di torino, Energy, Italy

10:40 AM**(ICACC-163-2022) Progress in SOC Development at Fraunhofer IKTS**M. Kusnezoff*; M. Jahn¹; S. Megel¹; S. Rothe¹; S. Hielscher¹; E. Reichelt¹; N. Trofimenko¹; G. Herz¹; W. Beckert¹; J. Schilm¹; A. Rost²; J. Schöne¹; G. Ganzer¹; D. Wagner¹; L. Nousch¹; V. Sauchuk³; M. Hartmann¹; A. Michaelis⁴

1. Fraunhofer IKTS, Germany
2. Fraunhofer IKTS, Germany
3. Fraunhofer IKTS, Germany
4. Fraunhofer IKTS, Germany

Materials: Fuel / Steam Electrode I

Room: Grand Ballroom Salons 1/2

11:00 AM**(ICACC-164-2022) Exsolution – rethinking the role and functionality of nanoparticles in electrochemical energy conversion (Invited)**D. Neagu*¹

1. University of Strathclyde, Chemical and Process Engineering, United Kingdom

11:30 AM**(ICACC-165-2022) Tuning nanoparticle catalyst exsolution with external fields: Elastic strain and ion irradiation (Invited)**B. Yildiz*¹

1. Massachusetts Institute of Technology, USA

Materials: Fuel / Steam Electrode II

Room: Grand Ballroom Salons 1/2

1:30 PM**(ICACC-166-2022) Understanding of role of crystal surfaces in nanoparticle exsolution process in (La,Sr)(Ni,Ti)O₃ perovskite**S. Kim^{*1}; D. Miller¹; J. Irvine¹

1. University of St Andrews, chemistry, United Kingdom

1:50 PM**(ICACC-167-2022) Effect of the PH₂O/PCO₂ & PH₂ on the electro-catalytic interactions and the CO production pathway during Solid Oxide H₂O/CO₂ co-electrolysis (Invited)**E. Ioannidou¹; S. G. Neophytides¹; D. K. Niakolas^{*1}

1. FORTH/ICE-HT, Greece

2:20 PM**(ICACC-168-2022) Operating Limits for CGO Composite Fuel Electrodes Applied in Metal, Electrolyte and Electrode Supported Solid Oxide Electrolysis Cells**M. P. Klitkou^{*1}; P. Khajavi¹; P. V. Hendriksen¹; H. L. Frandsen²

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark
2. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

Simulation

Room: Grand Ballroom Salons 1/2

2:40 PM**(ICACC-169-2022) Prediction of Microstructure Evolutions in Solid Oxide Cell Electrodes with Unsupervised Image-to-Image Translation Networks**A. Sciazko^{*1}; Y. Komatsu¹; N. Shikazono¹

1. The University of Tokyo, Institute of Industrial Science, Japan

3:00 PM**Break****3:20 PM****(ICACC-170-2022) From Atoms to Electricity: Multi-Scale Modeling of Solid Oxide Cells at the National Energy Technology Laboratory (Invited)**W. K. Epting^{*1}; H. W. Abernathy¹; T. Kalapos¹; G. Hackett¹

1. National Energy Technology Laboratory, USA

3:50 PM**(ICACC-171-2022) Analysis of electrode reaction through dense bulk electrode for solid oxide electrochemical cells (Invited)**J. Joo^{*1}; J. Lee¹; M. Kim²; Y. Lee³

1. Gwangju Institute of Science and Technology, School of Earth Sciences and Environmental Engineering, Republic of Korea
2. Chungbuk National University, Republic of Korea
3. Gyeongsang National University, Republic of Korea

Mechanical Degradation

Room: Grand Ballroom Salons 1/2

4:20 PM**(ICACC-172-2022) Fracture Modelling in Porous Ceramics: Application to the Mechanical Degradation of Solid Oxide Cell Electrodes during Redox Cycling (Invited)**J. Laurencin^{*1}; A. Abaza¹; M. Hubert¹; a. nakajo¹; D. Leguillon⁴; S. Meille²

1. CEA, DTCH, France
2. INSA Lyon, Mateis, France
3. EPFL, Switzerland
4. University Paris 6, France

4:50 PM**(ICACC-173-2022) Hydrothermal degradation of 3YSZ-based supports in solid oxide cells (Invited)**P. Khajavi^{*1}; P. Hendriksen¹; A. Hauch¹; H. L. Frandsen¹

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark

S6: Advanced Materials and Technologies for Rechargeable Energy Storage**All-solid-state Batteries**

Room: Grand Ballroom Salons 7/8

Session Chairs: Mickael Dollé, Université de Montreal; Palani Balaya, National University of Singapore

8:30 AM**(ICACC-174-2022) Epitaxial thin films of solid-state battery materials (Invited)**K. Takada^{*1}; T. Ohnishi¹

1. National Institute for Materials Science (NIMS), Japan

9:00 AM**(ICACC-175-2022) Advanced Processing Techniques to Enable High Performance Garnet-Based All-Solid-State Batteries (Invited)**M. Finsterbusch^{*1}; M. Rosen¹; M. Mann¹; R. Ye¹; M. Ihrig¹; D. Fattakhova-Rohlfing¹; O. Guillon²

1. Forschungszentrum Juelich, IEK-1, Germany
2. Forschungszentrum Juelich, IEK-1, Germany

9:30 AM**(ICACC-176-2022) Composite anodes for All-Solid-State Lithium-Ion Batteries (Invited)**M. A. Navarra^{*1}; A. Tsurumaki¹; G. Maresca¹; N. Suzuki²; Y. Aihara²

1. Sapienza University of Rome, Chemistry, Italy
2. Samsung R&D Institute Japan, Japan

10:00 AM**Break****10:20 AM****(ICACC-177-2022) Slurry-Fabricable Functional Binders for All-Solid-State Batteries Employing Sulfide Solid Electrolytes (Invited)**K. Kim¹; T. Kwon¹; D. Oh¹; Y. Jung^{*1}

1. Yonsei University, Department of Chemical and Biomolecular Engineering, Republic of Korea

10:50 AM**(ICACC-178-2022) Room temperature operation and high cycle stability of an all-solid-state lithium battery fabricated by cold pressing using Li₂OHBr solid electrolyte**K. Yoshikawa^{*1}; M. Sugumar¹; T. Yamamoto¹; K. Ikeda³; M. Motoyama¹; Y. Iriyama²

1. Nagoya University, Japan
2. Nagoya University, Japan
3. High Energy Accelerator Research Organization, Japan

11:10 AM**(ICACC-179-2022) Small Charge Transfer Resistance of LiPON/Multilayered-Graphene Interfaces**S. Yamamoto^{*1}; M. Motoyama¹; K. Miyoshi¹; R. Sakakibara¹; Y. Yamamoto¹; T. Yamamoto¹; W. Norimatsu¹; Y. Iriyama¹

1. Nagoya University, Japan

11:30 AM**(ICACC-180-2022) Material Design and Stability of All-Solid-State Lithium Ion Battery Cathodes**F. Al-Jaljouli^{*1}; R. Muecke¹; O. Guillon²

1. Forschungszentrum Jülich, IEK-1, Germany
2. Forschungszentrum Juelich, IEK-1, Germany
3. Forschungszentrum Juelich, IEK-1, Germany

Sodium Batteries, Potassium Batteries, Magnesium Batteries, and Calcium Batteries

Room: Grand Ballroom Salons 7/8

Session Chair: Olivier Guillon, Forschungszentrum Juelich

1:30 PM

(ICACC-181-2022) Rate-limitations of alkali-metal anode batteries at ambient and at elevated temperatures (Invited)

M. V. Heinz^{*1}; M. Bay¹; D. Landmann¹; G. Graeber¹; E. Svaluto-Ferro¹; T. Lan¹; L. Sieuw¹; R. Grissa¹; C. Battaglia¹

- Empa, Swiss Federal Laboratories for Materials Science and Technology, Materials for Energy Conversion, Switzerland

1:55 PM

(ICACC-182-2022) Designing electrode/ interphase/ electrolyte chemistry for Na-ion batteries: Strategies and perspectives (Invited)

P. Desai¹; J. Huang¹; S. Mariyappan^{*1}

- Collège de France, Chimie de solide et l'Energie, France

2:20 PM

(ICACC-183-2022) High Performance Secondary Batteries Derived by Intermediate-temperature Operation Using Ionic Liquids (Invited)

K. Matsumoto^{*1}; Y. Zheng¹; S. Kaushik¹; J. Hwang¹; R. Hagiwara¹

- Kyoto University, Department of Fundamental Energy Science, Japan

2:45 PM

Break

3:05 PM

(ICACC-184-2022) Electrodes for sodium-ion and solid-state batteries (Invited)

P. Adelhelm^{*1}

- Humboldt-University Berlin, Chemistry, Germany

3:30 PM

(ICACC-185-2022) Stable Cationic and Anionic Redox Activity in Layered Cathodes for Sodium-Ion Batteries (Invited)

N. Voronina¹; N. Yaqoob²; H. Klm¹; O. Guillon¹; P. Kaghazchi²; S. Myung^{*1}

- Sejong University, Republic of Korea
- Forschungszentrum Jülich GmbH, Germany
- Forschungszentrum Juelich, IEK-1, Germany

3:55 PM

(ICACC-186-2022) Is cation solvation influencing the electrochemical mechanism of graphite anodes for K-ion batteries in KFSI/DME electrolytes? (Invited)

P. Le Pham¹; V. Gabaudan¹; L. Monconduit¹; P. Johansson²; L. Stievano^{*1}

- Université de Montpellier, Institut Charles Gerhardt Montpellier, France
- Chalmers University of Technology, Sweden

4:15 PM

(ICACC-187-2022) Layered Oxides as Positive Electrode Materials for Na-ion Battery

A. Ramesh^{*1}; A. Tripathi¹; X. Shibo⁴; M. Bosman²; P. Balaya³

- National University of Singapore, Mechanical Engineering, Singapore
- National University of Singapore, Materials Science and Engineering, Singapore
- National University of Singapore, Department of Mechanical Engineering, Singapore
- ASTAR, Singapore

4:35 PM

(ICACC-188-2022) Interface engineering strategies to achieve efficient magnesium metal batteries (Invited)

H. Lim^{*1}

- Korea Institute of Science and Technology, Republic of Korea

S8: 16th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT16)

Hybrid Process and Applications I

Room: Grand Ballroom Salon 5

8:30 AM

(ICACC-189-2022) Ceramic interconnect technologies for energy related applications at Fraunhofer IKTS (Invited)

J. Schilm^{*1}; M. Kusnezoff¹; A. Rost²; K. Reinhardt²; S. Mosch²; A. Goldberg²; A. Michaelis¹

- Fraunhofer IKTS, Materials and components, Germany
- Fraunhofer IKTS, Germany
- Fraunhofer IKTS, Germany
- Fraunhofer IKTS, Germany

9:00 AM

(ICACC-190-2022) Enhanced energy transfer and conversion for high performance phononic crystal-assisted piezoelectric energy harvesting (Invited)

M. Kim^{*1}; S. Nahm²

- Sungkyunkwan University, Republic of Korea
- Korea University, Department of Materials Science and Engineering, Republic of Korea

9:30 AM

(ICACC-191-2022) PEEK based Composites for Biomedical Applications

S. Javaid^{*1}; M. Dey¹; C. Matzke¹; S. Gupta¹

- University of North Dakota, Mechanical Engineering, USA

9:50 AM

Break

Advanced Composites Manufacturing Technology

Room: Grand Ballroom Salon 5

Session Chair: Luke Walker, Heraeus CONAMIC

10:20 AM

(ICACC-192-2022) Novel ceramic/graphene composites developed via the spark plasma sintering technique (Invited)

M. Belmonte^{*1}; P. Miranzo¹; M. I. Osendi¹

- Institute of Ceramics and Glass, CSIC, Spain

10:50 AM

(ICACC-193-2022) Nanocarbon Added Silicon Nitrides (Invited)

C. Balazsi^{*1}; K. Balazsi²

- ELKH Centre for Energy Research, Hungary
- Centre for Energy Research HAS, Thin Film Physics, Hungary

11:20 AM

(ICACC-194-2022) Fracture Resistant and Thermally Insulating Ultra-High Temperature Carbide Foams (Invited)

A. Nisar¹; K. Orikasa¹; G. Seisedos¹; T. Thomas¹; T. Rockward²; B. Boesl¹; A. Agarwal^{*1}

- Florida International University, USA
- Los Alamos National Lab, USA

11:50 AM

(ICACC-195-2022) Oxidation of austenitic stainless steel 304 coated silicon oxide in argon steam containing cesium molybdate

T. Do^{*1}; Y. Uchida⁴; T. Nakayama⁴; H. Suematsu³

- Nagaoka University of Technology, Nuclear System Safety Engineering, Japan
- Nagaoka University of Technology, Japan
- Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
- National Institute of Technology, Nagaoka College, Electrical and Electronic Systems Engineering, Japan

Advanced Sintering Technology II

Room: Grand Ballroom Salon 5

1:30 PM**(ICACC-196-2022) Development of High Thermal Conductivity Silicon Nitride Ceramics (Invited)**Y. Zhou^{*1}; H. Hyuga¹; K. Hirao¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

2:00 PM**(ICACC-197-2022) Flash Sintering of MWCNT-reinforced ZrN Composite**A. Eskandariyun^{*1}; D. Dubois¹; S. Das¹; A. Durygin¹; Z. Cheng¹

1. Florida International University, Mechanical & Materials Engineering, USA

2:20 PM**(ICACC-198-2022) Flash Sintering of Commercial Zirconium Nitride Powders**D. Dubois^{*1}; A. Eskandariyun¹; S. Das¹; A. Durygin¹; Z. Cheng¹

1. Florida International University, Mechanical & Materials Engineering, USA

2:40 PM**(ICACC-199-2022) Microstructure Evolution during Spark Plasma Sintering of FJS-1 Lunar Soil Simulant**X. Zhang^{*1}; S. Gholami²; M. Khedmati³; Y. Kim²; H. Shin²; J. Lee²; Y. Kim²; B. Cui²

1. University of Nebraska-Lincoln, Mechanical & Materials Engineering, USA
2. University of Nebraska-Lincoln, Mechanical & Materials Engineering, USA
3. Texas A&M University, USA
4. University of Nebraska, Lincoln, USA
5. Korea Institute of Civil Engineering and Building Technology, Republic of Korea

3:00 PM**Break****Advanced Sintering Technology III**

Room: Grand Ballroom Salon 5

Session Chair: Jochen Schilm, Fraunhofer IKTS

3:20 PM**(ICACC-200-2022) Fabrication of transparent AlON by colloidal processing and reactive SPS (Invited)**T. S. Suzuki^{*1}

1. National Institute for Materials Science, Ceramics Processing Group, Japan

3:50 PM**(ICACC-201-2022) Sintering of gadolinium doped ceria ceramics in AC electric field: An effect of frequency**A. Dash^{*1}; R. Muecke¹; O. Guillon¹

1. Forschungszentrum Juelich, IEK-1, Germany

4:10 PM**(ICACC-202-2022) Grain-growth Kinetics, Grain Size Distribution and Densification Trajectory of Microwave Sintered and Conventionally Sintered Al₂O₃ Slip Casts**M. Khalid^{*1}; Y. Kim²; M. Haq¹; I. Kim²; D. Lee²; B. Kim²; B. Lee⁴

1. Korea Institute of Industrial Technology, University of Science and Technology, Industrial Materials and Smart Manufacturing Engineering, Republic of Korea
2. Chungbuk National University, Advanced Materials Engineering, Republic of Korea
3. Korea University; Korea Institute of Industrial Technology, Materials Science and Engineering, Republic of Korea
4. Korea Institute of Industrial Technology, Republic of Korea

4:30 PM**(ICACC-203-2022) Cold sintering of functional ceramic materials using FAST/SPS (Invited)**O. Guillon^{*1}; K. Nur¹; M. Kindelmann¹; M. Bram²

1. Forschungszentrum Juelich, IEK-1, Germany
2. Forschungszentrum Juelich, Institute IEK-1, Germany

S9: Porous Ceramics: Novel Developments and Applications**Structure and Properties of Porous Ceramics**

Room: Coquina Salon H

Session Chair: Enrico Bernardo, University of Padova

8:30 AM**(ICACC-204-2022) Pores Formation Mechanism during Uni-directional Solidification under Moisture Environment (Invited)**S. Ueno^{*1}

1. Nihon University, College of Engineering, Japan

9:00 AM**(ICACC-205-2022) Characterization of mechanical properties and osteogenesis for hydroxyapatite-alumina composite porous scaffolds**Y. Zusho^{*1}; H. Miyoshi¹; N. Sakamoto¹; S. Kobayashi¹

1. Tokyo Metropolitan University, Mechanical Systems Engineering, Japan

9:20 AM**(ICACC-206-2022) Thermal properties of aluminum and boron - added porous silicon carbide ceramics fabricated with in-situ grain growth**Y. Chung^{*1}; A. Gubarevich²; K. Yoshida²

1. Tokyo Institute of Technology, Department of Materials Science and Engineering, Japan
2. Tokyo Institute of Technology, Laboratory for Zero-Carbon Energy, Institute of Innovation Research, Japan

9:40 AM**(ICACC-207-2022) Porous Alumina Ceramics with Multimodal Pore Size Distributions**J. Biggemann¹; M. Stumpf²; T. Fey^{*1}

1. Friedrich-Alexander University Erlangen-Nürnberg, Department Material Science and Engineering, Germany
2. Friedrich-Alexander-University Erlangen-Nuremberg, Materials Science, Germany

10:00 AM**Break****Engineering Applications of Porous Ceramics I**

Room: Coquina Salon H

Session Chair: Tobias Fey, Friedrich-Alexander University Erlangen-Nürnberg

10:20 AM**(ICACC-208-2022) Synthesis of ceramic ultrafiltration membrane over microfiltration support (Invited)**S. Majumdar^{*1}; G. C. Sahoo¹; S. Ghosh¹

1. CSIR Central Glass and Ceramic Research Institute, Membrane and Separation Technology Division, India

10:50 AM**(ICACC-209-2022) Zeolite Containing Monolithic Structures: Preparation Concepts and Application**W. Schwieger^{*1}

1. Friedrich-Alexander-University Erlangen-Neurnberg, Chemical Reaction Engineering, Germany

11:10 AM**(ICACC-210-2022) Up-cycling of pharmaceutical glass into highly porous ceramics: from foams to membranes**A. Mehta²; K. Karbouche²; D. Galusek²; E. Bernardo^{*1}

1. University of Padova, Department of Industrial Engineering, Italy
2. IIC SAS, Joint Glass centre, Slovakia
3. École polytechnique de Constantine, Algeria
4. University of Trencin, FunGlass, Slovakia

11:30 AM

(ICACC-211-2022) High Shear Wet Granulation of Geopolymer, Geopolymer-Zeolite and Geopolymer-APTES for CO₂ adsorptionM. Muracchioli^{1*}; R. Girimonte²; F. Testa³; M. Turano⁴; G. Franchin³; P. Colombo²

1. University of Padova, INDUSTRIAL ENGINEERING, Italy
2. University of Padova, Industrial engineering, Italy
3. University of Padova, Industrial Engineering, Italy
4. University of Calabria, Italy

Engineering Applications of Porous Ceramics II

Room: Coquina Salon H

Session Chair: Rebecca Walker, Virginia Commonwealth University

1:30 PM

(ICACC-212-2022) Exploration of Rare Earth Doped Zirconia Aerogels for High Temperature Aerospace ApplicationsN. Olson^{1*}; F. Hurwitz²; H. Guo³; J. L. Stokes⁴; J. A. Krogstad⁵

1. University of Illinois at Urbana-Champaign, Materials Science & Engineering, USA
2. NASA Glenn Research Center, Materials Chemistry and Physics Branch, USA
3. Universities Space Research Association, USA
4. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
5. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

1:50 PM

(ICACC-213-2022) Porous Doped Lanthanum Manganites for Solar Thermochemical Hydrogen ProductionE. Gager^{1*}; D. McCord²; X. Wang³; S. Phillpot⁴; J. Scheffe²; J. C. Nino¹

1. University of Florida, Materials Science and Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

2:10 PM

(ICACC-214-2022) Silica Xerogel obtained from Rice Husk Ash: Effect of an ionic surfactant on its characteristicsS. Delvasto^{1*}

1. Universidad del Valle, Escuela de Ingeniería de Materiales, Colombia

2:30 PM

(ICACC-215-2022) Effect of clay addition to Al₂O₃-agar mixture on pore size and distribution of Al₂O₃ membrane tube fabricated by agar gelcastingN. Udomsri^{1*}; K. Lertwittayanon¹

1. Prince of Songkla University, Division of Physical Science, Thailand

2:50 PM

Break

S10: Modeling and Design of Ceramics and Composites**Modeling I**

Room: Flagler C

8:30 AM

(ICACC-216-2022) Modeling Challenges for Amorphous Molecular Solids (Invited)P. Rulis^{1*}

1. University of Missouri - Kansas City, Physics and Astronomy, USA

9:00 AM

(ICACC-217-2022) Optical signatures of pure 2D mixed and 2D/3D hybrid organic-inorganic perovskites (Invited)G. Giorgi^{1*}; M. Palumbo²

1. The University of Perugia, Department of Civil & Environmental Engineering, Italy
2. Università di Roma "Tor Vergata", Dipartimento di Fisica and INFN, Italy

9:30 AM

(ICACC-218-2022) Ballistic impact modelling of Ultra-High-Molecular-Weight-Polyethylene (UHMWPE) composite laminatesD. Kempesis^{1*}; L. Iannucci¹; S. Del Rosso¹; P. T. Curtis¹; D. J. Pope²; P. W. Duke²

1. Imperial College London, Aeronautics, United Kingdom
2. Defence Science and Technology Laboratory, United Kingdom

9:50 AM

Break

10:10 AM

(ICACC-219-2022) Beyond correlations among local atomic coordination environments and resultant phonon thermal conduction near dislocations and grain boundaries (Invited)M. Yoshiya^{1*}; W. Sekimoto²; S. Fujii¹; T. Yokoi²

1. Osaka University, Division of Materials and Manufacturing Science, Japan
2. Nagoya University, Department of Materials Physics, Japan

10:40 AM

(ICACC-220-2022) Microstructural and electronic properties of interfaces and grain boundaries present in SOFC electrolytes (Invited)K. K. Ghuman^{1*}

1. Institut National de la Recherche Scientifique, Énergie Matériaux Télécommunications, Canada

11:10 AM

(ICACC-221-2022) Mechanism of vacancy ordering in substoichiometric zirconium carbideT. Davey^{1*}; Y. Chen¹

1. Tohoku University, School of Engineering, Japan

11:30 AM

(ICACC-222-2022) Strain-tunable electronic properties and lithium storage of Ti₂CO₂ MXene as a flexible electrodeY. Li^{1*}

1. Shanghai University, China

Modeling II

Room: Flagler C

1:30 PM

(ICACC-223-2022) Predicting Grain Boundary Properties in 8+ Dimensions (Invited)J. Luo^{1*}

1. University of California, San Diego, USA

2:00 PM

(ICACC-224-2022) Study of Electronic Structure and Mechanical Properties of Montmorillonite Clay using Large-scale Supercell ModelingL. A. Shafei^{1*}; P. Adhikari¹; W. Ching¹

1. University of Missouri-Kansas City, USA

2:20 PM

(ICACC-225-2022) New approaches to computer design of ultra-high-temperature ceramics based on refractory compounds.V. Kartuzov^{1*}; O. Vasiliev²; V. Bekenev¹; V. Muratov¹; D. Vedel¹; E. Kartuzov¹

1. IPMS NASU, Ukraine
2. Institut for Problems of Materials Sciences NAS of Ukraine, Ukraine

2:40 PM

(ICACC-226-2022) Machine Learning methods and simulation modeling of the structure formation of high boron compounds at the atomic level to evaluate their chemical hardness.E. Kartuzov^{1*}; V. Kartuzov¹; N. Rozhenko¹; L. Ovsyannikova¹; N. Medyukh¹

1. IPMS NASU, Ukraine

3:00 PM

Break

3:20 PM

(ICACC-227-2022) Modeling the Metal-Insulator Transition in Vanadium Dioxide from First Principles: How Local Minima in DFT+U Can Affect ConclusionsD. Koch^{1*}; S. Manzhos²; M. Chaker¹

1. INRS, Energie matériaux télécommunications, Canada
2. Tokyo Institute of Technology, School of Materials and Chemical Technology, Japan

3:40 PM**(ICACC-228-2022) Numerical Characterization of Plasma Arc Welding in SiC-based UHTC Ceramic Composites: An ICME Approach (Invited)**A. Meena¹; J. Watts²; A. Emdadi*¹

1. Missouri University of Science & Technology, Materials Science and Engineering, USA
2. Missouri University of Science & Technology, Materials Science and Engineering, USA

4:10 PM**(ICACC-229-2022) Al₂O₃-WC ceramic composites with extremely improved mechanical strength by interfacial segregation of dilute dopants**T. Nishi*¹; K. Matsunaga¹; T. Mitsuoka²; Y. Okimura²; Y. Katsu²

1. Nagoya University, Materials Physics, Japan
2. NGK Spark Plug Co., Ltd., Japan

4:30 PM**(ICACC-230-2022) Electronic and Optical Features of Pb-free Halide Perovskites: Insights from first-principles**G. Giorgi*¹; M. Palummo²

1. The University of Perugia, Department of Civil & Environmental Engineering, Italy
2. Dipartimento di Fisica and INFN, Università di Roma "Tor Vergata", Dipartimento di Fisica and INFN, Italy

4:50 PM**(ICACC-231-2022) Formation and diffusion mechanisms of point defects in ytterbium and lutetium silicates**Y. Fan*¹; B. Liu¹

1. School of Materials Science and Engineering, Shanghai University, Shanghai, China

5:10 PM**(ICACC-232-2022) Transition Metals Coupled with Porous MoC/Mo₂C Heterostructure for Efficient Hydrogen Evolution Reaction**J. Li*¹; B. Liu¹; W. Li¹

1. Shanghai University, China

S12: On the Design of Nano-Laminated Ternary Transition Metal Carbides/Nitrides (MAX Phases) and Borides (MAB Phases), Solid Solutions Thereof, and 2D Counterparts (MXenes, MBenes)**Novel Applications and Device Fabrication of MAX/MAB Phases and Mxenes/MBenes / Nuclear Applications of the MAX Phases**

Room: Coquina Salon F

Session Chairs: Miladin Radovic, Texas A&M University; Konstantina Lambrinou, SCK-CEN

8:30 AM**(ICACC-233-2022) On MXenes and Clays, or What Happens Between the Multilayers**M. Barsoum*¹

1. Drexel University, Materials Science and Engineering, USA

9:10 AM**(ICACC-234-2022) Solvent Co-Intercalation Induced Change to the Pseudocapacitive Charge Storage Mechanism of Few-/Multi-Layered MXenes in Lithium Ion Batteries (Invited)**P. Bärmann*¹; T. Petit¹; T. Placke³; J. Gonzalez-Julian²

1. Helmholtz-Zentrum Berlin, Nanoscale Solid-Liquid Interfaces, Germany
2. Forschungszentrum Juelich, Germany
3. Münster Electrochemical Energy Technology, Materials, Germany

9:40 AM**Break****10:00 AM****(ICACC-235-2022) Operando infrared spectroscopy as a tool to probe confined water and protons within Ti₃C₂T_x MXene interlayers (Invited)**M. Lounasvuori*¹

1. Helmholtz-Zentrum Berlin, Germany

10:30 AM**(ICACC-236-2022) Wear behaviour of Hot-pressed Ti₃SiC₂ and Cr₂AlC MAX phases**E. Tabares*¹; M. Kitzmantel²; E. Neubauer²; A. Jiménez-Morales¹; S. A. Tsipas¹

1. Universidad Carlos III de Madrid, Materials Science and Engineering, Spain
2. RHP Technology GmbH, Austria

10:50 AM**(ICACC-237-2022) Synthesis and He⁺ irradiation of high-entropy MAX phases (Invited)**K. Lambrinou*¹; B. Tunca²; J. Hinks¹; G. Greaves¹; S. Huang²; N. Goossens²; J. Vleugels²

1. University of Huddersfield, School of Computing & Engineering, United Kingdom
2. KU Leuven, Materials Engineering, Belgium

11:20 AM**(ICACC-238-2022) Phase Transformation in High-entropy MAX phases (Ti, M)₂SnC (M=V, Nb, Zr, Hf) and V₂(Sn, A)C (A=Fe, Co, Ni, Mn)**S. Zhao*¹; C. Wang¹

1. PKU, School of Physics, China

Methods for Improving Damage Tolerance, Oxidation/Corrosion and Thermal Shock Resistance

Room: Coquina Salon F

Session Chairs: Surojit Gupta, University of North Dakota; Jesus Gonzalez-Julian, Forschungszentrum Juelich

1:30 PM**(ICACC-239-2022) Strategies for improving the oxidation resistance of Cr₂AlC: On the incorporation of reactive elements (Invited)**C. Azina*¹; T. Bartsch¹; J. M. Schneider¹

1. RWTH Aachen University, Materials Chemistry, Germany

2:00 PM**(ICACC-240-2022) Oxidation in wedge-shaped Ti₂AlC with different grain size**D. Ha*¹; M. Radovic²

1. Texas A&M University, Material science and engineering, USA
2. Texas A&M University, Materials Science & Engineering, USA

2:20 PM**(ICACC-241-2022) Oxidative stability of Nb_{n+1}C_nT_z MXenes**I. Echols*¹; D. Holta²; V. Kotasthane²; Z. Tan²; M. Radovic²; J. Lutkenhaus¹; M. Green¹

1. Texas A&M University, Chemical Engineering, USA
2. Texas A&M University, Materials Science & Engineering, USA

2:40 PM**(ICACC-242-2022) Microstructure's influence on the high temperature oxidation behavior of bulk Cr₂AlC**A. Zuber*¹; V. Gauthier-Brunet¹; S. Dubois²; T. Ouisse³; J. Roger⁴

1. Institut PPRIME, Physics and Mechanics of Materials, France
2. PPRIME Institute, France
3. Grenoble INP, France
4. University of Bordeaux, Chemistry, France

3:00 PM**Break**

3:20 PM**(ICACC-243-2022) Room temperature crack-healing in an atomically layered ternary carbide (Invited)**H. J. Rathod¹; T. Ouisse²; M. Radovic¹; A. Srivastava*¹

1. Texas A&M University, USA
2. Université Grenoble-Alpes, France

3:50 PM**(ICACC-244-2022) Buckling of alumina scale grown during high temperature oxidation of Cr₂AlC**A. Zuber²; V. Gauthier¹; C. Coupeau¹; S. Dubois*¹

1. PPRIME Institute, France
2. Institut PPRIME, Physics and Mechanics of Materials, France

4:10 PM**(ICACC-245-2022) MAX phases-based electroconductive coating for application in oxidizing environment at high-temperatures**T. Prikhna*¹; T. Serbenyuk¹; O. Ostash¹; A. Kuprin²; V. Podhurska²; V. Sverdun¹; S. Ponomaryov¹; M. Karpets¹; V. Moshchil¹; G. Tolmachova³; M. Bortnitskaya³; T. Zimych¹; A. Matsenko

1. Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Ukraine
2. Karpenko Physico-Mechanical Institute of the National Academy of Sciences of Ukraine, Ukraine
3. National Science Center Kharkov Institute of Physics and Technology, Ukraine
4. Institute of Semiconductor Physics of the National Academy of Sciences of Ukraine, Ukraine

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems**Advanced Characterization Techniques and Methods**

Room: Grand Ballroom Salon 4

8:30 AM**(ICACC-246-2022) 3D and 2D Image-Based Analysis of Damage and Crack Propagation Resistance in Polygranular Nuclear Graphite and SiC-SiC Composites (Invited)**J. Marrow*¹

1. University of Oxford, Materials, United Kingdom

9:00 AM**(ICACC-247-2022) In-situ microstructure observation of oxidized SiC layer in surrogate TRISO fuel particles**K. Lu*¹; Y. Cho¹

1. Virginia Tech, USA

9:20 AM**(ICACC-248-2022) In situ X-ray tomography imaging of SiC/SiC cladding under C-ring compression at 1200°C**G. Yuan*¹; P. F. Kretzler¹; J. Ell¹; H. Barnard²; R. O. Ritchie²; P. Xu³; T. Nishimura⁴; E. J. Lahoda⁵; D. Liu¹

1. University of Bristol, Physics, United Kingdom
2. Lawrence Berkeley National Laboratory, USA
3. Idaho National Lab, USA
4. Toshiba Corporation, Japan
5. Westinghouse Electric, USA

9:40 AM**(ICACC-249-2022) X-ray computed tomography analysis of SiC composite materials**T. Koyanagi*¹; J. D. Arregui-Mena²; O. Karakoc¹; Y. Katoh³

1. Oak Ridge National Laboratory, USA
2. Oak Ridge National Lab, Nuclear Materials Science & Technology Group, USA
3. Oak Ridge National Laboratory, USA

10:00 AM**Break****Novel Ceramics and Composites for Nuclear Systems I**

Room: Grand Ballroom Salon 4

10:20 AM**(ICACC-250-2022) ZrN and ZrC nano-phase powders for use as matrix in nuclear fuels: Synthesis and characterisation**S. Naim Katea*²; L. Riekehr¹; G. Westin²

1. University of Antwerpen, Belgium
2. Uppsala University, Sweden

10:40 AM**(ICACC-251-2022) Non-Destructive Microstructural Analysis of various Fully Ceramic Microencapsulated Fuels**D. Sproutster*¹; C. Ang²; B. Cheng¹; B. Ahmadi³; J. Favata³; S. Shahbazmohamadi³; L. Snead¹; J. Trelewicz¹

1. Stony Brook University, USA
2. University of Tennessee, Nuclear Engineering, USA
3. University of Connecticut, USA

11:00 AM**(ICACC-252-2022) Kinetics of Hydrogen Desorption from Yttrium Hydride: The Development of Material Characterization Methods**T. Koyanagi*¹; H. Gietl¹; B. Garrison¹

1. Oak Ridge National Laboratory, USA
2. Oak Ridge National Laboratory, USA

11:20 AM**(ICACC-253-2022) Single-step additive manufacturing of silicon carbide through laser-induced phase separation**O. Karakoc¹; K. Mao¹; T. Koyanagi*²; Y. Katoh³

1. Oak Ridge National Lab, Materials Science and Technology, USA
2. Oak Ridge National Laboratory, USA
3. Oak Ridge National Laboratory, USA

11:40 AM**(ICACC-254-2022) Fast fabrication of electrical conductivity-controlled silicon carbide ceramics by spark plasma sintering**H. Li*¹; W. Shen¹; C. Lu¹; Y. Ma¹; W. Zheng¹; Y. He¹

1. Zhejiang University of Technology, Institute of Process Equipment and Control Engineering, China

Material Technologies for Enhanced Accident Tolerance LWR Fuels and Core I

Room: Grand Ballroom Salon 4

1:30 PM**(ICACC-255-2022) High and very high temperature oxidation of SiC ceramic matrix composites (Invited)**M. K. Grosse*¹; M. Steinbrück¹; C. Tang¹; C. Deck¹; C. Lorrette³

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany
2. General Atomics, USA
3. CEA, France

2:00 PM**(ICACC-256-2022) High temperature steam oxidation behavior of SiC matrix for FCM nuclear fuel**H. Lee*¹; D. Kim²; J. Park³; W. Kim⁴

1. Korea Atomic Energy Research Institute, Republic of Korea
2. Korea Atomic Energy Research Institute, Nuclear Materials Development Division, Republic of Korea
3. Korea Atomic Energy Research Institute, Nuclear Materials Development Division, Republic of Korea
4. Korea Atomic Energy Research Institute, Republic of Korea

2:20 PM**(ICACC-257-2022) Development of CVI/CVD-SiC/SiC Composite for Accident-Tolerant Core Materials of LWR Application**S. Suyama*¹; M. Ukai¹; T. Nishimura¹; T. Mitsuhashi¹

1. Toshiba Energy Systems & Solutions Corporation, Japan

2:40 PM**(ICACC-258-2022) Silicon carbide composite technology for accident-tolerant fuels – recent progress and updated R&D needs**Y. Katoh^{*1}; T. Koyanagi²; P. Xu³; C. Deck⁴; K. Shirvan⁵; L. Snead⁶

1. Oak Ridge National Laboratory, USA
2. Oak Ridge National Laboratory, USA
3. Idaho National Lab, USA
4. General Atomics, USA
5. Massachusetts Institute of Technology, USA
6. Stony Brook University, USA

3:00 PM**Break****Novel Ceramics for Nuclear Fusion Systems**

Room: Grand Ballroom Salon 4

3:20 PM**(ICACC-259-2022) Fusion Blanket systems based on advanced SiCf/SiC composite with LiPb for near term commercial fusion reactors (Invited)**S. Konishi^{*1}; T. Hinoki¹; k. mukai¹; R. Pearson²; C. Baus²; T. Nagao²

1. Kyoto University, Institute of Advanced Energy, Japan
2. Kyoto Fusioning Ltd., Japan

3:50 PM**(ICACC-260-2022) Thermal stability of hafnium hydride**J. P. Pollard^{*1}; F. Giuliani²; S. A. Humphry-Baker³

1. Imperial College London, Materials, United Kingdom
2. Imperial College London, United Kingdom
3. Imperial College London, Materials, United Kingdom

4:10 PM**(ICACC-261-2022) Mechanical and Thermal Performance of W₂B₅ for High Energy Neutron Shielding**J. Davidson^{*1}; W. Xiong²; M. Reece²; S. A. Humphry-Baker¹

1. Imperial College London, Materials, United Kingdom
2. Queen Mary University of London, School of Engineering and Materials Science, United Kingdom

4:30 PM**(ICACC-262-2022) ENHANCED Shield: A Critical Materials Technology Enabling Compact Superconducting Tokamaks**B. Cheng¹; j. gentile¹; E. Peterson²; D. Sproutster¹; T. Ironman²; S. Agarwal³; G. Kohse³; S. J. Zinkle⁴; J. Trelewicz⁵; L. Snead^{*1}

1. Stony Brook University, USA
2. University of Tennessee, USA
3. University of Tennessee, Material Science and Engineering, USA
4. University of Tennessee, USA
5. Massachusetts Institute of Technology, USA

4:50 PM**(ICACC-263-2022) W₂C-reinforced tungsten: a solution for divertor material in fusion reactors?**A. Abram^{*1}; M. Kocen¹; P. Jenus¹; A. Ivekovic¹; S. Novak¹

1. Jozef Stefan Institute, Department for nanostructured materials, Slovenia

5:10 PM**(ICACC-264-2022) Development and Radiation Effects of UHTCs for Plasma Facing Components**D. Sproutster^{*1}; B. Cheng¹; J. Trelewicz¹; L. Snead¹

1. Stony Brook University, USA

S15: 6th International Symposium on Additive Manufacturing and 3-D Printing Technologies**Emerging Technology**

Room: Coquina Salon C

Session Chairs: Alberto Ortona, SUPSI; Andrew Allen, NIST

8:30 AM**(ICACC-265-2022) Finding the best compromise between design for function and design for manufacturing in 3D printing of ceramic components (Invited)**A. Ortona^{*1}

1. SUPSI, MEMTI, Switzerland

9:00 AM**(ICACC-266-2022) A multi-material design approach for tailoring the strength of 3D-printed alumina ceramics**J. Schlacher^{*1}; A. Hofer¹; S. Geier²; I. Kraveva¹; R. Papšik¹; M. Schwentenwein²; R. Bermejo¹

1. Montanuniversitaet Leoben, Austria
2. Lithoz GmbH, Austria

9:20 AM**(ICACC-267-2022) 3D-printed highly textured alumina ceramics through templated grain growth**A. Hofer^{*1}; I. Kraveva¹; M. Schwentenwein²; R. Bermejo¹

1. Montanuniversitaet Leoben, Materials Science, Austria
2. Lithoz GmbH, Austria

9:40 AM**(ICACC-268-2022) Hexagonal Barium Titanate Ceramics Fabricated by Direct Selective Laser Sintering**X. Zhang^{*1}; F. Wang²; Z. Wu²; Y. Lu²; X. Yan²; M. Nastasi²; Y. Chen²; Y. Hao²; X. Hong²; B. Cui³

1. University of Nebraska-Lincoln, Mechanical & Materials Engineering, USA
2. University of Nebraska-Lincoln, USA
3. University of Nebraska-Lincoln, Mechanical & Materials Engineering, USA
4. Oak Ridge National Lab, USA
5. TEXAS A&M UNIVERSITY, USA

10:00 AM**Break****10:20 AM****(ICACC-269-2022) Densification process of ceramic AM green bodies using cold sintering**A. J. Allen^{*1}; R. Maier¹; F. Zhang¹; I. Levin¹; I. Kuzmenko²

1. NIST, Materials Measurement Science Division, USA
2. Argonne National Lab, X-ray Science Division, USA

10:40 AM**(ICACC-270-2022) Design and Analysis of Additively Manufactured Battery Thermal Management Systems**W. Nelson^{*1}; A. S. Almansour²; M. Singh³; M. C. Halbig⁵; E. McNichols⁴

1. St. Cloud State University, USA
2. NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA
3. Ohio Aerospace Institute, USA
4. NASA Glenn Research Center, Turbomachinery and Turboelectric Systems Branch, USA
5. NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA

11:00 AM**(ICACC-271-2022) Binder jet printing of ceramic powders: the role of in-bed binders towards industrialization**P. Vilarinho^{*1}; P. Duarte¹; J. Marinheiro²

1. University of Aveiro, Department of Materials and Ceramics, Portugal
2. Costa Verde, Portugal

11:20 AM**(ICACC-272-2022) On Mechanical Behavior of Additively Manufactured Functionally Graded Shell-Lattices based on Triply Periodic Minimal Surfaces**R. K. Abu Al-Rub^{*1}

1. Khalifa University, Advanced Digital & Additive Manufacturing Center, United Arab Emirates

11:40 AM**(ICACC-273-2022) Stereolithographic Additive Manufacturing of Ceramic Graded Stacks for Effective Thermoacoustic Conversions**T. Ito*¹; S. Kirihara²

- Osaka University, Joining and Welding Research Institute, Japan
- Osaka University, Joining and Welding Research Institute, Japan

Multimaterial & Hybrid Printing

Room: Coquina Salon C

Session Chair: Hui-suk Yun, Korea Institute of Materials Science

1:30 PM**(ICACC-274-2022) Novel multi-material additive manufacturing technologies for biomedical applications (Invited)**H. Yun*¹

- Korea Institute of Materials Science, Republic of Korea

2:00 PM**(ICACC-275-2022) Hybrid additive manufacturing for the fabrication of freeform glass components**A. De Marzi*¹; G. Giometti¹; P. Colombo¹; G. Franchin¹

- University of Padova, Industrial Engineering, Italy

2:20 PM**(ICACC-276-2022) Effect of Processing Parameters on Mechanical Behavior of 3-D Printed Polymer Composites with Metallic Particulates and Carbon Fiber Reinforcements**V. Vakharia*¹; M. Singh²; M. C. Halbig³; J. Salem⁴

- NASA Glenn Research Center, USA
- Ohio Aerospace Institute, USA
- NASA Glenn Research Center, USA
- NASA Glenn Research Center, Materials and Structures, USA

2:40 PM**(ICACC-277-2022) Fabrication of dense SiC ceramics by a novel hybrid additive manufacturing process**M. Pellanconi*²; G. Bianchi²; S. Bottacin²; P. Colombo¹; A. Ortona²

- University of Padova, Industrial engineering, Italy
- MEMTI, SUPSI, DTI, Switzerland

3:00 PM**Break****3:20 PM****(ICACC-278-2022) Multi-Material Additive Manufacturing for Making High-Strength Alumina Components**M. Schwentenwein*¹; S. Geier¹; J. Schlacher²; R. Bermejo²

- Lithoz GmbH, Austria
- Montanuniversität Leoben, Institut fuer Struktur- und Funktionskeramik, Austria

3:40 PM**(ICACC-279-2022) Combining nanoscale 3D printing with spark ablation to achieve novel nanostructured surfaces for photovoltaic applications**I. Panzic*¹; F. Radovanović-Perić¹; A. Jelinek²; D. Kiener²; V. Mandić¹

- Faculty of Chemical Engineering and Technology, University of Zagreb, Croatia
- Montanuniversität Leoben, Department of Materials Physics, Austria

4:00 PM**(ICACC-280-2022) Gradient Controlled Feldspathic Porcelain Crown Fabrication for Aesthetic Dentistry**I. A. Sutejo*²; C. Gal¹; Y. Choi¹; H. Park¹; H. Yun²

- Korea Institute of Materials Science, Advanced Biomaterials Research, Republic of Korea
- Korea Institute of Materials Science / Korea University of Science and Technology, Advanced Biomaterials Research, Republic of Korea

4:20 PM**(ICACC-281-2022) Extrusion-Based 3D Printing of Magnetocaloric Structures**V. Sharma*¹; L. Balderson²; R. Heo²; C. Hunt²; H. Zhao¹; R. Hadimani¹; R. Barua¹

- Virginia Commonwealth University, Department of Mechanical & Nuclear Engineering, USA
- Virginia Commonwealth University, Department of Biomedical Engineering, USA
- Virginia Commonwealth University, Department of Chemistry, USA
- University of Virginia, Department of Mechanical and Aerospace Engineering, USA

S16: Geopolymers, Inorganic Polymers and Sustainable Materials**Synthesis, Processing and Microstructure I**

Room: Coquina Salon A

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

8:30 AM**(ICACC-282-2022) Understanding and manipulating geopolymer nanostructure and microstructure – a brief overview (Invited)**J. L. Provis*¹

- University of Sheffield, United Kingdom

9:00 AM**(ICACC-283-2022) Influence of Carbon-based Nanofillers on the Structure and Mechanical Properties of Metakaolin-Based Geopolymers (Invited)**A. Akono*¹

- Northwestern University, Civil and Environmental Engineering, USA

9:30 AM**(ICACC-284-2022) Synthetic glassy precursors for alkali activated binders (Invited)**A. M. Fernandez*¹; I. Garcia-Lodeiro¹; A. Palomo¹

- Instituto Ciencias de la Construcción Eduardo Torroja (IETcc-CSIC), Materiales, Spain

10:00 AM**Break****10:20 AM****(ICACC-285-2022) Ferrisilicates formation during the geopolymerization of laterites: Impact on some structural and functional applications (Invited)**E. Kamseu*¹

- MIPROMALO, Research, Cameroon

10:40 AM**(ICACC-286-2022) Investigation of Suitability of Pumice from Turkey for Geopolymer Formation (Invited)**C. Bagci*¹; D. Kafkas¹; D. Samuel²; W. M. Kriven³

- Hitit University, Department of Metallurgical and Materials Engineering, Turkey
- University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
- University of Illinois at Urbana-Champaign, USA

11:00 AM**(ICACC-287-2022) Synthesis of Organo-modified Hydrophobic Geopolymer Nanoaggregates from Silicone Oil as Organic Precursor (Invited)**D. Seo*¹; M. Maurer¹

- Arizona State University, School of Molecular Sciences, USA

11:30 AM**(ICACC-288-2022) Frontal geopolymerization: toward fast and on-demand curing (Invited)**C. Leonelli*²; G. Malucelli⁴; A. Mariani¹; A. Spinella³

- University of Sassari, Department of Chemistry and Pharmacy, Italy
- University of Modena and Reggio Emilia, Dipartimento di Ingegneria "Enzo Ferrari", Italy
- University of Palermo, Italy
- Politecnico di Torino, Italy

Synthesis, Processing and Microstructure II

Room: Coquina Salon A

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

1:30 PM**(ICACC-290-2022) Machine learning and analysis of microstructural evolution of porosity in geopolymer composites**J. Gruber^{*1}; P. F. Keane²; R. Dingreville³; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of South Australia, Future Industries Institute, Australia
3. Sandia National Laboratories, Center for Integrated Nanotechnologies, USA

Mechanical Properties

Room: Coquina Salon A

Session Chair: Ana Carolina Trindade, Pontifical Catholic University of Rio de Janeiro (PUC-Rio)

2:20 PM**(ICACC-291-2022) Effect of Temperature and Humidity on the Flexural Strengths of Metakaolin Based Geopolymer Composites**A. Kozych^{*1}; W. M. Kriven²

1. UIUC, MatSE, USA
2. University of Illinois at Urbana-Champaign, USA

2:40 PM**(ICACC-292-2022) Water retention and flexural strength of metakaolin geopolymer composites with surface coatings cast in ambient conditions**D. Samuel^{*1}; W. M. Kriven¹

1. University of Illinois at Urbana-Champaign, USA

3:00 PM**Break****3:20 PM****(ICACC-293-2022) Basalt Mini-rod and Mini-bar Reinforced Geopolymer Composites**V. Chadha^{*1}; A. J. Steveson³; W. M. Kriven²

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
3. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA

3:40 PM**(ICACC-294-2022) Optimization of alkaline-earth-based geopolymers for fire-resistant applications**P. Scanferla^{*1}; A. Gharzouni¹; S. Rossignol²; X. Bourbon³; N. Texier-Mandoki³

1. University of Limoges, IRCER, France
2. Laboratoire SPCTS, France
3. ANDRA, France

4:00 PM**(ICACC-295-2022) Fatigue Response of Metakaolin-Based Geopolymer**A. Akono^{*1}

1. Northwestern University, Civil and Environmental Engineering, USA

4:20 PM**(ICACC-296-2022) Stabilization of Coastal Soil using Metakaolin-based Geopolymer**O. D. Huang^{*1}; J. Jang²; S. S. Congress²; A. Puppala²; M. Radovic¹

1. Texas A&M University, Materials Science & Engineering, USA
2. Texas A&M University, Zachry Department of Civil and Environmental Engineering, USA

Geopolymer Composites I

Room: Coquina Salon A

4:40 PM**(ICACC-297-2022) Properties of Metakaolin Based Engineered Geopolymer Composites**R. Abufarsakh^{*1}; G. Arce¹; M. Hassan¹; M. Radovic²; O. D. Huang³; S. Sukhishvili²

1. Louisiana State University, USA
2. Texas A&M University, Materials Science & Engineering, USA
3. Texas A&M University, Materials Science & Engineering, USA

S18: Ultra-High Temperature Ceramics**Novel Processing Methods for Coatings, Thin Films, Fibers**

Room: Flagler A/B

Session Chair: William Fahrenholtz, Missouri University of Science & Technology

8:30 AM**(ICACC-298-2022) The “small”, the “wide” and the “high” - horizontal and vertical scale up of sintered UHTCMCs (Invited)**D. Sciti^{*1}; L. Zoli¹; P. Galizia¹; A. Vinci¹

1. ISTECCNR, Italy

9:00 AM**(ICACC-299-2022) Boride synthesis and modelling for nuclear fuel and fusion systems (Invited)**S. C. Middleburgh^{*1}; W. E. Lee¹; F. Martini¹; P. Makurunje¹

1. Bangor University, Nuclear Futures Institute, United Kingdom

9:30 AM**(ICACC-300-2022) Rapid fabrication of ZrB₂-based composites by PIP (Precursor Impregnation & Pyrolysis) process**S. Lee^{*1}; Y. Zou¹; H. Kim²

1. Korea Institute of Materials Science, Republic of Korea
2. Korea Institute of Materials Science, Republic of Korea

9:50 AM**(ICACC-301-2022) Porous zirconium diboride for transpiration cooling of hypersonic flight**R. Hedgecock^{*1}; M. Grossman¹; L. J. Vandeperre¹

1. Imperial College London, Materials, United Kingdom

10:10 AM**Break****10:30 AM****(ICACC-302-2022) Synthesis and Flash Sintering of Zirconium Nitride Powder**S. Das^{*1}; D. Dubois²; M. Sozal²; V. Drozd³; A. Durygin³; Z. Cheng²

1. Florida International University, Mechanical and Materials Engineering, USA
2. Florida International University, Mechanical & Materials Engineering, USA
3. Florida International University, Center for the Study of Matter at Extreme Conditions (CeSMEEC), USA

10:50 AM**(ICACC-303-2022) Laser-Driven CVD SiC Fiber Performance in Composite Materials**S. Harrison^{*1}; M. C. Schaefer¹; J. Vervlied¹; J. Pegna²; R. K. Goduguchinta¹K. L. Williams¹

1. Free Form Fibers, USA
2. Free Form Fibers, USA

11:10 AM**(ICACC-304-2022) Processing of UHTCs with anisotropic porosity aligned in various directions using electrospun polystyrene fibers as sacrificial fillers**J. Shiraishi^{*1}; C. Tallon²; G. Liu³

1. Virginia Tech, Materials Science and Engineering, USA
2. Virginia Tech, Materials Science and Engineering, USA
3. Virginia Tech, Chemistry, USA

11:30 AM**(ICACC-305-2022) Reactive sintering of 2.5D Cf/ZrC-SiC ceramic matrix composite (Invited)**J. Zou*¹

1. Wuhan University of Technology, China

Processing-microstructure-property Relationships in Existing or New Systems

Room: Flagler A/B

Session Chair: Lavina Backman, U.S. Naval Research Laboratory

1:30 PM**(ICACC-306-2022) Mechanical and Thermal Properties of Zeta-Phase Tantalum Carbide (Invited)**W. Fahrenholtz*¹; E. C. Schwind²; G. Hilmas²

1. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
2. Missouri University of Science & Technology, Materials Science and Engineering, USA

2:00 PM**(ICACC-307-2022) Additive Manufacturing of Chopped Fiber Ultra-High Ceramic Composites (Invited)**J. W. Kemp*¹; B. Lam²; E. Malek²; W. J. Costakis²; C. Wycoff²; L. M. Rueschhoff²

1. UES, Inc., Materials and Manufacturing Directorate Air Force Research Lab, USA
2. Air Force Research Labs, Materials and Manufacturing Directorate, USA
3. Air Force Research Lab, Materials and Manufacturing Directorate, USA

2:30 PM**(ICACC-308-2022) Thermal and Electrical Property Effects in Refractory Metal-Ceramic Joints**J. Jarman*¹; W. Fahrenholtz²; G. Hilmas¹; J. Watts³; T. Huang⁴

1. Missouri University of Science & Technology, Department of Material Science and Engineering, USA
2. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
3. Missouri University of Science & Technology, Materials Science and Engineering, USA
4. KCNSC, USA

2:50 PM**Break****3:10 PM****(ICACC-309-2022) Flexible TiB₂ tapes for new applications: role of suspension additives in microstructure and properties**K. Shirey*¹; C. Tallon²

1. Virginia Polytechnic Institute and State University, Materials Science and Engineering, USA
2. Virginia Tech, Materials Science and Engineering, USA

3:30 PM**(ICACC-310-2022) Advanced Suspension Formulations for Cost-Effective Near-Net-Shaping of UHTCs Based on Gelcasting**J. N. Goyer*¹; C. Tallon²

1. Virginia Tech, Materials Science and Engineering, USA
2. Virginia Tech, Materials Science and Engineering, USA

3:50 PM**(ICACC-311-2022) Oxidation behavior of Nb coatings on ZrB₂**J. E. Förster*¹; R. Naraparaju¹; G. Hilmas²; W. Fahrenholtz²

1. DLR - German Aerospace Center, Institute of Materials Research, Germany
2. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

4:10 PM**(ICACC-312-2022) Design of Ultra-High Temperature Ceramics for Oxidation Resistance**N. Smith*¹; E. J. Opila²

1. University of Virginia, Materials Science and Engineering, USA
2. University of Virginia, Materials Science and Engineering, USA

4:30 PM**(ICACC-313-2022) Composition Control of ZrC_x and ZrC₂N_{1-x} Microspheres Synthesized Utilizing Sol-Gel Chemistry and Microfluidics for Use as Ultra-High Temperature Ceramic Powder Feedstock**J. M. Kurlley*¹; R. Hunt²; J. W. McMurray²; W. Cureton⁴; D. Drey³; M. Lang⁴

1. Oak Ridge National Laboratory, Nuclear Fuel Development Section, USA
2. Oak Ridge National Lab, Materials Science and Technology Division, USA
3. Oak Ridge National Lab, Fuel Cycle Chemistry Group, USA
4. University of Tennessee, Nuclear Engineering, USA

11th Global Young Investigator Forum**Advanced Ceramics for Barrier Coatings and Catalysis Applications**

Room: Coquina Salon G

9:00 AM**(ICACC-314-2022) A duplex bond coat EBC concept for SiC-based composites (Invited)**J. Deijkers*¹; H. Wadley¹

1. University of Virginia, Materials Science & Engineering, USA

9:30 AM**(ICACC-315-2022) Regenerative spinel oxide catalysts for methane utilizations (Invited)**S. Yamaguchi*¹; M. Ootani²; T. Ozaki¹; T. Suyama¹

1. Osaka Research Institute of Industrial Science and Technology Izumi Center, Research Division of Applied Material Chemistry, Japan
2. Kansai Catalyst Co., Ltd., Japan

10:00 AM**Break****Novel Ceramic Processing and Synthesis Routes**

Room: Coquina Salon G

10:20 AM**(ICACC-316-2022) Pre-ceramic polymer assisted nucleation and growth of nanostructures (Invited)**V. Doan-Nguyen*¹; P. A. Loughney²; K. Martin²; P. Cuillier²; E. Trigg³; T. Prun³; M. Dickerson³

1. MSE, The Ohio State University, Columbus, OH, United States., Materials Science and Engineering, USA
2. Ohio State University, Materials Science Engineering, USA
3. Air Force Research Lab, USA

10:50 AM**(ICACC-317-2022) Zirconium oxalate intermediate route to zirconium diboride ceramics (Invited)**P. S. Makurunge*¹; I. Ipatova³; D. Goddard²; W. E. Lee¹; S. C. Middleburgh¹

1. Bangor University, Nuclear Futures Institute, United Kingdom
2. National Nuclear Laboratory, United Kingdom
3. University of Birmingham, School of Metallurgy and Materials, United Kingdom

11:20 AM**(ICACC-318-2022) Effect of reactive binders on the mechanics of sintering ceramic powder aggregates (Invited)**L. O. Grant*¹; C. F. Higgs III²; Z. C. Cordero³

1. Rice University, Materials Science and NanoEngineering, USA
2. Rice University, Department of Mechanical Engineering, USA
3. Massachusetts Institute of Technology, Department of Aeronautics and Astronautics, USA

11:50 AM**(ICACC-319-2022) Electric field and current assisted novel and sustainable manufacturing of ceramics with tailored microstructures**T. Mishra*¹; O. Guillon²; M. Bram³

1. Institute of Energy and Climate Research IEK-1: Materials Synthesis and Processing, Forschungszentrum Jülich GmbH, Germany
2. Forschungszentrum Jülich, IEK-1, Germany
3. Forschungszentrum Jülich, Institute IEK-1, Germany

Ceramic Materials for Photonics and Energy

Room: Coquina Salon G

Session Chair: Kaline Furlan, Hamburg University of Technology

1:30 PM**(ICACC-320-2022) Thermal engineering using infrared photonic structures: probing coherent thermal emission in a single nano-object (Invited)**S. Shin*¹

1. National University of Singapore, Department of Mechanical Engineering, Singapore

2:00 PM**(ICACC-321-2022) Influence of structural parameters on the thermal stability and mechanical properties of inverse opal structures**A. Gómez Gómez*¹; G. Shang²; B. Winhard¹; A. Y. Petrov²; M. Eich²; G. Schneider²; E. Lilleodden⁴; R. Janssen³; K. P. Furlan¹

1. Hamburg University of Technology, Institute of Advanced Ceramics, Integrated Materials Processing Group, Germany
2. Hamburg University of Technology, Institute of Optical and Electronic Materials, Germany
3. Hamburg University of Technology, Institute of Advanced Ceramics, Germany
4. Helmholtz-Zentrum Hereon, Institute of Materials Mechanics, Germany

2:20 PM**(ICACC-322-2022) Interface Engineering of Nanoscale Cathode Materials for Lithium Ion Batteries (Invited)**S. Dahl*¹; C. Roitzheim²; M. Finsterbusch²; D. Fattakhova-Rohlfing²; B. P. Uberuaga³; R. Castro⁴

1. University of California, Davis, Chemical Engineering, USA
2. Forschungszentrum Juelich, IEK-1, Germany
3. Los Alamos National Laboratory, Materials Science and Technology Division, USA
4. University of California, Davis, Material Science & Engineering, USA

2:50 PM**(ICACC-323-2022) MOF-derived nickel oxide-carbon nanohybrid photocathodes for photoelectrochemical hydrogen generation**L. Shi*¹; D. Benetti¹; F. Li¹; Q. Wei²; F. Rosei¹

1. Institut National de la Recherche Scientifique, Énergie Matériaux Télécommunications, Canada
2. University of Jinan, China

3:10 PM**Break****3:30 PM****(ICACC-324-2022) Contact to contactless: challenges and solutions in different approaches to flash sintering of solid-state electrolytes (Invited)**G. M. Jones*¹; C. Green²; S. Ghanizadeh²; D. Pearmain²; G. West¹; E. Kendrick³; C. E. Dancer¹

1. University of Warwick, WMG, United Kingdom
2. Lucideon Limited, United Kingdom
3. University of Birmingham, Metallurgy and Materials, United Kingdom

4:00 PM**(ICACC-325-2022) Colloidal Core/Shell Quantum Dots for Solar Energy Conversion**L. Jin*¹; D. Benetti¹; F. Rosei¹; Z. Wang²; D. Perepichka³

1. Institut National de la Recherche Scientifique, Centre for Energy, Materials and Telecommunications, Canada
2. University of Electronic Science and Technology of China, China
3. McGill University, Canada

4:20 PM**(ICACC-326-2022) Plasmon-enhanced Carbon dots for Semi-transparent luminescent solar concentrator**X. Liu*¹; D. Benetti¹; F. Rosei¹

1. University du Quebec, Institut National de la Recherche Scientifique, Centre - Energie Matériaux Telecommunications, Canada

FS3: Molecular-level Processing and Chemical Engineering of Functional Materials**Molecular Precursors II**

Room: Ponce de Leon

Session Chair: Gurpreet Singh, Kansas State University

8:30 AM**(ICACC-327-2022) Ab initio Molecular Dynamic Simulations of Polymer-to-Ceramic Transformations (Invited)**P. Kroll*¹

1. University of Texas, Arlington, USA

9:00 AM**(ICACC-328-2022) Facile Formation of Nickel Nanocrystallites Embedded in Amorphous Silicon Nitride towards Catalytic Applications**N. Asakuma*¹; S. Tada¹; S. Honda¹; Y. Daiko¹; S. Bernard²; Y. Iwamoto¹

1. Nagoya Institute of Technology, Japan
2. CNRS, IRCER, France

9:20 AM**(ICACC-329-2022) Influence of Molecular Architecture on the Pyrolysis of Silane-Containing 1,2,3-triazoles**B. J. Ackley*¹; M. B. Dickerson²; T. Pruy²

1. ARCTOS, Technology Solutions, USA
2. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

9:40 AM**(ICACC-330-2022) Precursors for Cathode Materials for Lithium-Ion Batteries**R. M. Laine*¹; T. G. Brandt²; J. Shangraw¹; C. Cappiletti¹

1. University of Michigan, Materials Science and Engineering, USA
2. University of Michigan, Materials Science and Engineering, USA

10:00 AM**Break****Additive Manufacturing I**

Room: Ponce de Leon

Session Chair: Pavol Sajgalik, Institute of Inorganic Chemistry, Slovak Academy of Sciences

10:20 AM**(ICACC-331-2022) Chemical modification of silicon carbide precursors for Direct Ink Writing**M. Cheype*²; M. Greenough³; R. Bordia¹; A. Ballester¹; O. Durand⁴; S. Bernard²

1. Clemson University, Materials Science and Engineering, USA
2. CNRS, IRCER, France
3. Clemson University, Materials Science and Engineering, USA
4. Centre de transfert de technologies céramiques, France

10:40 AM**(ICACC-332-2022) Design and characterization of UV-curable preceramic polymers for microfabrication and additive manufacturing**Q. Hanniet¹; P. Miele²; B. Charlot³; C. Salameh*¹

1. Institut Européen des Membranes, France
2. Ecole Nationale Supérieure de Chimie de Montpellier, France
3. Institut d'électronique et des systèmes, France

11:00 AM**(ICACC-333-2022) Advanced Porous Ceramic Structures via Direct Ink Writing**J. Bowen*¹; S. Mooraj²; J. Goodman³; B. Roman-Manso⁴; E. Davidson⁵; K. Martin¹; S. Schiffrés³; W. Chen²; M. Dickerson⁴; J. Lewis⁴

1. UES, Inc., USA
2. University of Massachusetts-Amherst, USA
3. Binghamton University, USA
4. Harvard University, USA
5. Princeton University, USA
6. Air Force Research Lab, USA

11:20 AM**(ICACC-334-2022) Multiscale 2D/3D microshaping of property-contrast polymer-derived SiCN**L. Hagelüken^{*1}; M. G. Makowska²; J. Brugger¹

1. EPFL, Switzerland
2. Paul Scherrer Institute, Switzerland

11:40 AM**(ICACC-335-2022) Metal Coordinated Pre-ceramic Polymer Grafted Nanoparticles (PPGN) for the Development of UHTC Precursors with Rheological Properties Defined by the Corona Core Interface**K. L. Martin^{*1}; C. Thompson³; M. J. Parvulescu¹; M. B. Dickerson²

1. UES, Inc., USA
2. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA
3. University of Kentucky, USA

Additive Manufacturing II

Room: Ponce de Leon

Session Chair: Rick Laine, University of Michigan

1:30 PM**(ICACC-337-2022) Strategies for printing and densifying pre-ceramic polymers with fibers, particles, and additives (Invited)**C. L. Cramer^{*1}; S. Bullock¹; G. Larsen¹; C. Hershey¹; V. Kunc¹

1. Oak Ridge National Lab, Manufacturing Science Division, USA

2:00 PM**(ICACC-338-2022) From Structural to Functional non-oxide Ceramic Fibers based on PDC Technology (Invited)**G. Motz^{*1}; A. Viard¹; B. Weber²

1. University of Bayreuth, Ceramic Materials Engineering, Germany
2. Inorganic Chemistry II, Germany

2:30 PM**Break****Biomedical and Environmental Applications**

Room: Ponce de Leon

Session Chair: Aitana Tamayo, Institute of Ceramics and Glass, CSIC

3:20 PM**(ICACC-339-2022) Chemically Engineered Iron Oxide Nanocrystals for Transport of Biomolecules Across Biological Barriers (Invited)**S. Mathur^{*1}

1. University of Cologne, Institute of Inorganic Chemistry, Germany

3:40 PM**(ICACC-340-2022) Is silicon nitride based ceramics suitable for the drug delivery? (Invited)**P. Sajgalik^{*1}; M. Hičák¹; L. Medvecký²; M. Hnatko³; R. Štulajterová²; M. Giretová²; M. Tatarková¹; Z. Lencses¹

1. Institute of Inorganic Chemistry, Slovak Academy of Sciences, Ceramic Department, Slovakia
2. Institute of Materials Research, Slovak Academy of Sciences, Slovakia
3. Centre of Excellence for Advanced Materials Application, Slovak Academy of Sciences, Slovakia

4:10 PM**(ICACC-341-2022) Silicone blends as highly versatile feedstock for novel carbon containing bioceramic composites (Invited)**P. Ozog²; F. Dogrul²; H. Elsayed³; D. Galusek²; N. Travitzky⁴; E. Bernardo^{*1}

1. University of Padova, Department of Industrial Engineering, Italy
2. IIC SAS, Joint Glass centre, Slovakia
3. University of Padova, Department of Industrial Engineering, Italy
4. University of Erlangen-Nuremberg, Germany
5. University of Trencin, FunGlass, Slovakia

4:40 PM**(ICACC-342-2022) Molecular design towards high-performance electromagnetic wave absorbing/shielding materials used in harsh environment (Invited)**Q. Wen^{*1}; Z. Yu²; X. Xiong¹; E. Ionescu³; R. Riedel³

1. Central South University, State Key Laboratory of Powder Metallurgy, China
2. Xiamen University, College of Materials, China
3. Technische Universität Darmstadt, Institut für Materialwissenschaft, Germany

Poster Session A

Room: Ocean Center Arena

5:30 PM**(ICACC-P001-2022) Composite materials development from ceramics from primary battery waste**S. Restrepo Tobón^{*1}; H. A. Colorado L.¹

1. Universidad de Antioquia, Colombia

(ICACC-P002-2022) Exploration of Particle Size Engineering and Microencapsulation Technologies for Multifunctional ApplicationsD. Trieff^{*1}; S. Shawn¹; M. Dunn¹; M. Geigle¹; M. Dey¹; V. L. Wiesner²; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA
2. NASA Langley Research Center, Advanced Materials and Processing Branch, USA

(ICACC-P003-2022) Rotating Four-Point Bend Test FixtureM. P. Maclsaac^{*1}; G. Subhash³; S. Bavdekar²; J. Nance²; B. Sankar¹; N. Kim¹

1. University of Florida, Mechanical & Aerospace Engineering, USA
2. University of Florida, Mechanical & Aerospace Engineering, USA
3. University of Florida, Mechanical and Aerospace Engineering, USA
4. University of Florida, Material Science Engineering, USA

(ICACC-P004-2022) Novel Methods for Evaluating Interfaces in CMCsT. Patel^{*1}; R. Wheeler²; E. E. Boakye²; D. Petry²; M. Cinibulk¹

1. Air Force Research Laboratory, USA
2. UES, Inc., USA

(ICACC-P005-2022) Nanoindentation hardness of ceramics pre- and post- sinteringJ. M. Cornell^{*1}; S. Bavdekar²; G. Subhash³

1. University of Florida, Mechanical and Aerospace Engineering, USA
2. University of Florida, Mechanical & Aerospace Engineering, USA
3. University of Florida, Mechanical and Aerospace Engineering, USA

(ICACC-P006-2022) ASTM International Standards for Properties & Performance of Advanced Ceramics – Standards Worldwide to Help Our World Work BetterM. G. Jenkins^{*1}; J. Salem²; S. T. Gonczy²; J. Westbrook⁴; G. D. Quinn⁵

1. Bothell Engineering and Science Technologies, USA
2. NASA Glenn Research Center, Materials and Structures, USA
3. Gateway Materials Technology, USA
4. Corning Incorporated, USA
5. Consultant, USA

(ICACC-P007-2022) The effect of current on the densification and microstructure of ZnO during spark plasma sinteringW. Jin^{*1}; J. Cho²; S. Lim¹; S. Bae³; M. Siyar⁴; H. Jang¹; C. Park⁵

1. Seoul National University, Republic of Korea
2. SK hynix, Republic of Korea
3. Kyungnam University, Republic of Korea
4. National University of Sciences and Technology, Republic of Korea
5. Seoul National University, Republic of Korea

(ICACC-P008-2022) Thermal Property Optimization of Reaction Bonded Diamond/SiC/Si CompositesJ. Wang^{*1}; M. Aghajanian¹; J. Coppola¹; N. Coombs¹

1. M Cubed Technology, Inc., USA

(ICACC-P009-2022) Physio-mechanical characteristic and alkali immobilization mechanism of red mud - clay-based composite using sucrose as binder.V. Pandey^{*1}; M. K. YADAV¹; A. GUPTA¹; K. MOHANTA¹; S. K. PANDA²

1. Indian Institute of Technology(BHU), DEPARTMENT OF CERAMIC ENGINEERING, India
2. Indian Institute of Technology(BHU), DEPARTMENT OF MECHANICAL ENGINEERING, India

(ICACC-P010-2022) Characteristics of Yttria-stabilized Zirconia with WC Dispersed ParticlesS. Kim^{*}; H. Jeong¹; Y. Han¹; Y. Oh¹; S. Lee¹

1. Korea Institute of Ceramic Engineering and Technology (KICET), Engineering Ceramics Center, Republic of Korea

(ICACC-P011-2022) Reactive Spark Plasma Sintering of SiC-TiC-Diamond CompositesC. Garcia^{*}; J. Smith¹; J. Rodriguez¹; A. A. DiGiovanni²; J. LaSalvia³; T. W. Scharf¹

1. University of North Texas, Department of Materials Science and Engineering, USA
2. US Army Research Laboratory, Ceramic and Transparent Materials, USA
3. U.S. Army Research Laboratory, DEVCOM, USA

(ICACC-P012-2022) Spark Plasma Sintering of B₄C-SiC Composites: Deformation and Fracture Mechanisms under Quasistatic LoadingJ. Rodriguez^{*}; J. Smith¹; C. Garcia¹; T. Shoulders²; T. W. Scharf¹

1. University of North Texas, Department of Materials Science and Engineering, USA
2. CCDC Army Research Laboratory, USA

(ICACC-P013-2022) Effects of Aliovalent Substitution in Argyrodite Li_{6+x}P_{1-x}Si_xCl Solid Electrolytes for All-Solid-State BatteriesJ. Song^{*}; J. Wang²; X. Dai²; D. Kim²; D. Kim¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea
2. University of New South Wales, School of Chemistry, Australia

(ICACC-P014-2022) Design of Electrode Structure by Utilizing One-dimensional Carbon Derived Microspheres for High-Areal-Capacity Lithium-Sulfur BatteriesS. Yang^{*}; J. Yun¹; D. Kim¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea

(ICACC-P015-2022) Self-supporting Carbon-rich SiOC Ceramic Electrodes for Lithium-ion Batteries and Aqueous SupercapacitorsS. Mujib^{*}; C. Gervais²; G. Singh²

1. Kansas State University, Mechanical & Nuclear Engineering, USA
2. Kansas State University, Mechanical and Nuclear Engineering Dept., USA
3. Sorbonne University, France

(ICACC-P016-2022) Niobium pentoxide decorated multi-walled carbon nanotube electrode material for sodium-ion electrochemical energy storage devicesC. Real^{*}; G. Singh²; H. Zanin¹

1. Unicamp, FEEC, Brazil
2. Kansas State University, Mechanical and Nuclear Engineering Dept., USA

(ICACC-P017-2022) Boron – challenging and exciting elementT. Schmidt^{*}; S. E. Vogel²

1. Höganäs Germany GmbH, Applied Technology, Germany
2. North American Höganäs High Alloys LLC, USA

(ICACC-P018-2022) Highly oriented hydroxyapatite ceramics fabricated by both wet-jet milling and high magnetic fieldY. Otsuka^{*}; J. Tatami¹; I. Yamamoto¹; M. Iijima¹

1. Yokohama National University, Japan

(ICACC-P019-2022) Design and Development of Biomass based Scaffolds for Multifunctional ApplicationsN. Ziamahmoodi^{*}; S. McPherson¹; C. Yunxiang¹; L. Anyim²; Y. Ji²; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA
2. University of North Dakota, USA

(ICACC-P020-2022) Fabrication of Spark Plasma Sintered ZrC with WC Additions for Nuclear Thermal PropulsionH. Martin^{*}; J. Watts²; G. Hillmas¹

1. Missouri University of Science & Technology, USA
2. Missouri University of Science & Technology, Materials Science and Engineering, USA

(ICACC-P021-2022) Effect of eutectic reaction on RE-silicate formation by surface modification of SiCH. Sakai^{*}; T. Hinoki²

1. Kyoto University, Graduate School of Energy Science, Japan
2. Kyoto University, Open Innovation Institute, Japan

(ICACC-P022-2022) Burner Rig Optimization for High Temperature Materials and Coating SystemsC. A. Ferguson^{*}; G. N. Morscher²

1. The University of Akron, Mechanical Engineering, USA
2. University of Akron, Mechanical Engineering Dept., USA

(ICACC-WW-P023-2022) Nanomechanical characterization of 3D printed ceramicsB. Regan^{*}; S. Zhang¹; N. Ross²; N. Voellm²; R. Fordham²; S. M. Allan²; U. Schwarz²; A. Datye¹

1. Yale University, Material Science and Engineering, USA
2. Lithoz America, LLC, USA

(ICACC-WW-P024-2022) WW - Studying the low-temperature crystallization of TiO₂ using design of experimentsJ. Rodrigues^{*}; G. Reilly¹; F. Claeysens¹

1. The University of Sheffield, Department of Materials Science and Engineering, United Kingdom

(ICACC-WW-P025-2022) Pre-Service Crystallization and Thermal Cracking in Ytterbium Disilicate EBCsD. Smith^{*}; N. Afandi¹; J. Rohman¹; S. Park¹; M. O'Connor²; B. Jarosinsky²; A. L. Chamberlain³; S. Gong³; R. Trice¹

1. Purdue University, MSE, USA
2. Praxair Surface Technologies, USA
3. Rolls Royce, USA

(ICACC-WW-P026-2022) Evaluating Extrusion Deposited Additively Manufactured Fiber-Reinforced Thermoplastic Polymers as Carbon/Carbon Green BodiesE. Romero^{*}; E. Barocio Vaca²; R. Pipes²; R. Trice¹

1. Purdue University, Materials Engineering, USA
2. The Composites Manufacturing and Simulation Center, USA

(ICACC-WW-P027-2022) DEVELOPMENT OF MECHANICALLY ROBUST TRANSPARENT ALUMINA FOR INFRARED (IR) WINDOWSA. Sivakumar^{*}; L. G. Alexander¹; A. Schlup²; J. P. Youngblood¹; R. Trice¹

1. Purdue University, Materials Science and Engineering, USA
2. Air Force Research Lab, USA

(ICACC-WW-P028-2022) Magnesium and Strontium substituted Hydroxyapatite in Polycaprolacton Matrix for the usage as Bone FillerD. Syla^{*}

1. The University of Sheffield, Material Science and Engineering, United Kingdom

(ICACC-WW-P029-2022) Changes of elastic properties in the CaO – Al₂O₃ – SiO₂ ceramics during heat treatment determined via temperature-dependent impulse excitationP. Simonova^{*}; E. Gregorova¹; W. Pabst¹

1. University of Chemistry and Technology, Prague, Department of Glass and Ceramics, Czechia

(ICACC-WW-P030-2022) Magnesium phosphate micromortars developed with industrial aluminium wasteA. Alfocea Roig^{*}; S. Huete Hernández²; A. Maldonado Alameda¹; J. Giró Paloma¹; J. Chimenos Ribera¹; J. Formosa Mitjans¹

1. Universitat de Barcelona, Departament de Ciència de Materials i Química Física, Spain

Wednesday, January 26, 2022

Emerging Technologies Symposium**Emergent Materials and Technologies V**

Room: Coquina Salon D

Session Chairs: Hagen Klemm, FhG IKTS Dresden; Gerard Vignoles, University Bordeaux

8:30 AM**(ICACC-343-2022) Interaction of advanced silicon carbide fibers with liquid silicon during LSI process (Invited)**H. Klemm^{*}; K. Schönfeld¹

1. FhG IKTS Dresden, Germany

9:00 AM**(ICACC-344-2022) Revisiting the potential of non-oxide CMC fabrication processes by the gas route (Invited)**G. L. Vignoles*¹

1. University Bordeaux, LCTS - Lab for ThermStructural Composites, France

9:30 AM**(ICACC-345-2022) A New EBC Concept for High Temperature Materials with Oxides Eutectic Structure (Invited)**S. Ueno*¹

1. Nihon University, College of Engineering, Japan

10:00 AM**Break****Materials for Sustainable Energy and Environmental Systems III**

Room: Coquina Salon D

Session Chairs: Hagen Klemm, FhG IKTS Dresden; Gerard Vignoles, University Bordeaux

10:20 AM**(ICACC-346-2022) Highly porous ultra-high temperature ceramic thermal insulators with controlled microstructure and outstanding properties (Invited)**J. Wang*¹

1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

10:50 AM**(ICACC-347-2022) Assessment of high temperature ionic percolation through composite ceramic membranes for carbon dioxide capture (Invited)**R. Muccillo*¹; S. G. Carvalho¹; R. L. Denaldi¹; E. N. Muccillo¹

1. IPEN, Brazil

11:20 AM**(ICACC-348-2022) Gelation freezing process for advanced engineering porous ceramics (Invited)**M. Fukushima*¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

Emergent Materials and Technologies VI

Room: Coquina Salon D

Session Chair: Monica Ferraris, Politecnico di Torino

1:30 PM**(ICACC-349-2022) Smart Powder Processing for Excellent Advanced Materials (Invited)**M. Naito*¹; T. Kozawa¹; A. Kondo¹

1. JWRI, Osaka University, 11-1, Mihogaoka, Japan

2:00 PM**(ICACC-350-2022) The need of ceramic research in emerging energy technologies (Invited)**C. Balazsi*¹; K. Balazsi²

1. ELKH Centre for Energy Research, Hungary
2. Centre for Energy Research HAS, Thin Film Physics, Hungary

2:30 PM**(ICACC-351-2022) A Progress Report on Design and Development of Sustainable Technologies (Invited)**S. Gupta*¹

1. University of North Dakota, Mechanical Engineering, USA

3:00 PM**Break****Technologies for Human Health and Societal Welfare**

Room: Coquina Salon D

Session Chair: Monica Ferraris, Politecnico di Torino

3:20 PM**(ICACC-352-2022) Sputtering: A sustainable manufacturing technology to hybrid and multifunctional antimicrobial/virucidal composite coatings (Invited)**M. Ferraris*¹

1. Politecnico di Torino, Department of Applied Science and Technology, Italy

3:50 PM**(ICACC-353-2022) Hydrophilic property of titanium oxide aiming for bio-applications (Invited)**T. Ishikawa*¹; K. Niidome¹

1. Tokyo University of Science, Yamaguchi (Sanyo-Onoda City University), Applied Chemistry, Japan

4:20 PM**(ICACC-354-2022) Cold Crystallization and Morphology Control of SnO₂ Nanosheets, TiO₂, and ZnO for Gas Sensors and Chemical Sensors (Invited)**Y. Masuda*¹; P. Choi¹; K. Kim¹; T. Itoh¹

1. National Institute of AIST, Japan

S1: Mechanical Behavior and Performance of Ceramics & Composites**Fracture Mechanics, Failure Analysis and Fractography**

Room: Coquina Salon B

8:30 AM**(ICACC-355-2022) Spiral Cracks in Fractured Glass Plates**G. D. Quinn*¹; J. Swab²; p. patel²

1. National Institute of Standards and technology, Materials Measurement Sciences Division, USA
2. Army Research Laboratory, USA

8:50 AM**(ICACC-356-2022) Crack growth behavior of an orthogonal 3-D woven SiC fiber/SiC composite under cyclic tensile loading at elevated temperature in air**Y. Ikarashi*¹; T. Ogasawara²; T. Aoki³

1. Tokyo University of Agriculture and Technology, Japan
2. Tokyo University of Agriculture and Technology, Japan
3. Japan Aerospace Exploration Agency, Advanced Composite Research Center, Institute of Aeronautical Technology, Japan

9:10 AM**(ICACC-357-2022) Finding the "Real" Fracture Toughness of Glass: Draft ASTM Standards Using CNSB, DCB, DT, SEPB Test Methods**M. G. Jenkins*¹; J. Salem²; J. Westbrook³; G. D. Quinn⁴; E. Aaldenberg⁵; B. Meenakshi Sundaram³

1. Bothell Engineering and Science Technologies, USA
2. NASA Glenn Research Center, Materials and Structures, USA
3. Corning Incorporated, USA
4. National Institute of Standards and technology, Materials Measurement Sciences Division, USA

9:30 AM**(ICACC-358-2022) Mechanical characterization of thin brittle substrates for microelectronic applications**M. Gruber*¹; P. Supancic¹; I. Kraveva¹; R. Bermejo¹

1. University of Leoben, Institute of Structural and Functional Ceramics, Austria

9:50 AM**Break**

Environmental and Thermomechanical Performance

Room: Coquina Salon B

10:20 AM

(ICACC-359-2022) Fatigue of a SiC/SiC Ceramic Composite with an Ytterbium-Disilicate Environmental Barrier Coating at Elevated Temperature

M. Ruggles-Wrenn^{*1}; T. Williams¹

1. Air Force Institute of Technology, Aeronautics & Astronautics, USA

10:40 AM

(ICACC-360-2022) Effect of Steam Exposure on the Tensile Behavior of 2700°F EBC-CMC System

A. S. Almansour^{*1}; J. D. Kiser¹; D. Gorican¹; K. Lee²; J. Setlock³

1. HX5, LLC at NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA
2. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
3. NASA Glenn Research Center, University of Toledo, USA

11:00 AM

(ICACC-361-2022) Impact of environmental conditions on coating recession effects in SiC/BN/SiC composite strength

V. Collier^{*1}; F. W. Zok¹; M. Begley²

1. University of California, Santa Barbara, Materials, USA
2. University of California, Santa Barbara, USA

11:20 AM

(ICACC-362-2022) Role of fiber architecture on the thermal shock response of C/C composites

H. Tewani^{*1}; P. Prabhakar¹

1. University of Wisconsin - Madison, Department of Civil and Environmental Engineering, USA

11:40 AM

(ICACC-363-2022) Oxidation of bare Si-O-C fibers in water vapor

V. Christensen^{*1}; S. Sehr¹; M. Begley¹; F. W. Zok¹

1. UC Santa Barbara, Materials, USA

Design and Computational Modeling

Room: Coquina Salon B

1:30 PM

(ICACC-364-2022) Silicon Nitride Collimator Bench for Copernicus CO2M Spectrometer

N. Louh^{*1}; U. Schenderlein²; D. Haas²; D. Serre¹

1. THALES ALENIA SPACE, France
2. FCT Ingenieurkeramik, Germany

1:50 PM

(ICACC-365-2022) Analytical Simulation of the Effects of Local Mechanisms and Microstructure on the Creep Response of Unidirectional Ceramic Matrix Composites

R. K. Goldberg^{*1}; A. S. Almansour¹; R. M. Sullivan¹

1. NASA Glenn Research Center, Ceramic and Polymer Composites Branch, USA

2:10 PM

(ICACC-366-2022) A machine learning framework for damage mechanism identification from acoustic emission in unidirectional SiC/SiC CMCs

C. Muir^{*1}; B. Swaminathan²; K. Fields³; A. S. Almansour³; M. J. Presby⁴; K. M. Sevener⁵; C. Smith⁶; J. D. Kiser⁷; S. Daly⁸

1. University of California, Santa Barbara, Materials, USA
2. University of California, Santa Barbara, Materials, USA
3. NASA Glenn Research Center, Mechanical Engineering, USA
4. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
5. University of Michigan, Materials Science and Engineering Dept., USA
6. Ohio Aerospace Institute, USA
7. NASA Glenn Research Center, Ceramic and Polymer Composites, USA
8. University of California, Santa Barbara, Mechanical Engineering, USA

S2: Advanced Ceramic Coatings for Structural, Environmental, and Functional Applications

CMAS related issues and mitigation strategies II

Room: Coquina Salon E

Session Chair: Collin Holgate, University of California, Santa Barbara

8:40 AM

(ICACC-367-2022) Oxidation of CMAS-Exposed Environmental Barrier Coatings

B. J. Harder^{*1}; B. Kowalski¹; J. L. Stokes¹; J. Setlock²

1. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
2. University of Toledo, USA

9:00 AM

(ICACC-368-2022) Stress evolution caused by sand ingress ion in 7 wt% yttria-stabilized zirconia aero-engine ceramic coatings assessed by confocal Raman Spectroscopy

Z. Stein^{*1}; R. Naraparaju²; U. Schulz²; L. Teta³; S. Raghavan¹

1. University of Central Florida, Mechanical & Aerospace, USA
2. DLR - German Aerospace Center, Materials Research, Germany
3. University of Central Florida, Physics, USA

9:20 AM

(ICACC-369-2022) Gadolinium Aluminum Perovskite Topcoats for Improved Thermochemical Resistance to Calcium-Magnesium-Aluminosilicate (CMAS) for Next Generation Thermal Barrier Coatings

P. E. Lauer^{*1}; D. E. Wolfe¹; M. Schmitt¹; A. K. Rai³; P. Albert¹; J. Reiss¹; S. Stepanoff¹

1. Pennsylvania State University, USA
2. HAMR Industries LLC, USA
3. UES Inc., USA

9:40 AM

(ICACC-370-2022) Current Progress on the Processing and CMAS Infiltration Behavior of Ytterbium Disilicate Environmental Barrier Coatings (Invited)

J. Zhang^{*1}; J. Wang¹; H. Wang¹

1. Institute of Metal Research, Advanced Ceramics and Composites, China

10:10 AM

(ICACC-371-2022) Thermochemical Degradation of HfSiO₄ by Molten CMAS

J. L. Stokes^{*1}; N. P. Bansal²; V. L. Wiesner³

1. NASA Glenn Research Center, Environmental Effects and Coatings Branch, USA
2. NASA Glenn Research Center, USA
3. NASA Langley Research Center, Advanced Materials and Processing Branch, USA

Advanced Multifunctional Ceramic Coatings

Room: Coquina Salon E

Session Chair: Eugene Medvedovski, Consultant

10:30 AM

(ICACC-372-2022) Hexagonal boron nitride and graphite bi-materials for electric propulsion

C. S. Chari^{*1}; K. Faber¹; B. W. McEnerney³; R. R. Hofer³; C. M. Marrese-Reading³; J. Wollmershauser²

1. California Institute of Technology, Materials Science, USA
2. U.S. Naval Research Laboratory, Materials Science & Technology Division, USA
3. Jet Propulsion Laboratory, California Institute of Technology, USA

10:50 AM

(ICACC-373-2022) Design of Solar Heat Reflective and High Temperature Hydrophobic Functional Ceramic Coatings

A. Solaippan^{*1}

1. CSIR National Institute for Interdisciplinary Science and Technology, Materials Science and Technology, India

11:10 AM

(ICACC-374-2022) Growing Integration Layer [GIL] Strategy for Direct Formation of Bio-Active Ceramic Coating on Titanium based Metallic AlloysM. Yoshimura*¹

1. National Cheng Kung University, Mater. Sci. & Eng., Taiwan

11:30 AM

(ICACC-375-2022) Advanced Coatings for Erosion, Abrasion and Combined Wear-Corrosion ApplicationsE. Medvedovski*¹

1. Endurance Technologies Inc., Canada

S3: 19th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology**Materials: Proton Conducting Cells**

Room: Grand Ballroom Salons 1/2

8:30 AM

(ICACC-376-2022) Ceramic Proton Conductors: From Energy Conversion to Green Chemistry (Invited)M. E. Ivanova*¹; W. Deibert¹; C. Lenser¹; O. Guillon¹; N. H. Menzler¹

1. Forschungszentrum Jülich GmbH, IEK-1, Germany

9:00 AM

(ICACC-377-2022) Nanocomposite materials for membranes with selective hydrogen permeabilityY. N. Bespalko*¹; S. N. Kharina¹; N. F. Ereemeev¹; M. N. Simonov¹; V. A. Sadykov¹

1. Borekov Institute of Catalysis, Heterogeneous catalysis, Russian Federation

9:20 AM

(ICACC-378-2022) Effects of H₂O and CO₂ on Electrochemical Behaviors of PrNi_{0.5}Co_{0.5}O_{3-δ} (PNC) cathode for Proton Conducting IT-SOFCM. Sozal*¹; A. Durygin²; V. Drozd²; S. Das¹; B. Jafarizadeh¹; C. Wang¹; Z. Cheng¹

1. Florida International University, Mechanical & Materials Engineering, USA
2. Florida International University, Center for the Study of Matter at Extreme Conditions (CeSMEC), USA

9:40 AM

(ICACC-379-2022) Transport Properties and Thermodynamic Stability of BaCo_{0.4}Fe_{0.4}Zr_{0.2-x}Y_xO_{3-δ} Model Triple Conducting MaterialsJ. H. Duffy*¹; Y. Meng¹; N. Birkner¹; S. Estes²; H. W. Abernathy³; G. Hackett³; K. Brinkman¹

1. Clemson University, Materials Science and Engineering, USA
2. Clemson University, Environmental Engineering & Earth Sciences, USA
3. National Energy Technology Laboratory, USA

10:00 AM

Break

Materials: rSOC Electrodes

Room: Grand Ballroom Salons 1/2

10:20 AM

(ICACC-380-2022) Multi-doped Stabilized Bismuth Oxides for Reversible Solid Oxide Cells at Reduced Temperatures (Invited)K. Lee*¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Mechanical Engineering, Republic of Korea

10:50 AM

(ICACC-381-2022) Rare-Earth Nickelate Based Oxygen Electrodes for Reversible Solid Oxide Cells (Invited)S. Gopalan*¹; J. Banner²; A. Akter²

1. Boston University, Mechanical Engineering, USA
2. Boston University, Division of Materials Science and Engineering, USA

Materials: Oxygen Electrode I

Room: Grand Ballroom Salons 1/2

11:20 AM

(ICACC-382-2022) Unconventional Highly Active and Stable Oxygen Reduction Catalysts Informed by Computational Design StrategiesJ. Liu*¹; R. Jacobs²; B. Na³; B. Guan⁴; T. Yang¹; S. Lee¹; G. Hackett³; T. Kalapas¹; H. W. Abernathy²; D. MORGAN²

1. NETL-LRST, Department of Energy, USA
2. University of Wisconsin-Madison, Department of Materials Science and Engineering, USA
3. NETL, Department of Energy, USA
4. West Virginia University Research Corporation, USA

11:40 AM

(ICACC-383-2022) Anode supported solid oxide cells with hybrid oxygen electrodeR. Kluczkowski*¹; Y. Naumovich¹; A. Zurawska¹; M. Blesznowski¹; S. Jagielski¹; J. Kupecki¹; K. Zakharchuk²

1. Institute of Power Engineering – Research Institute, Poland
2. University of Aveiro, Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, Portugal

Materials: Oxygen Electrode II

Room: Grand Ballroom Salons 1/2

1:30 PM

(ICACC-384-2022) A study of ion and electron conduction in LSCF by AC and DC techniquesC. Lei*¹; M. Simpson¹; A. V. Virkar¹

1. University of Utah, Materials Science & Engineering, USA

1:50 PM

(ICACC-385-2022) Correlation between material properties and electrochemical performance of LSM / stabilized zirconia composite cathodesM. Kusnezoff*¹; N. Trofimenko¹; S. Mosch¹

1. Fraunhofer IKTS, Germany

Interconnects and Coatings

Room: Grand Ballroom Salons 1/2

2:10 PM

(ICACC-386-2022) Metallic Interconnects - Degradation Mechanisms and Mitigation Strategies (Invited)J. Froitzheim*¹; V. Asokan¹; A. Chyrkin¹; C. Cossu¹; L. Gagliani¹; M. Reddy¹; M. Tomas¹; A. Visibile¹; J. Svensson¹

1. Chalmers University of Technology, Sweden

2:40 PM

(ICACC-387-2022) Electrophoretic deposition and rapid thermal processing of MnCo protective coatings for SOC application: Towards a faster processing (Invited)A. Sabato*¹; E. Zanchi²; S. Anelli¹; M. Torrelli¹; A. Morata¹; F. Smeacetto²; A. Tarancón¹

1. IREC- Institut de Recerca en Energia de Catalunya, Department of Advanced Materials for Energy, Spain
2. Politecnico di Torino, Department of Applied Science and Technology, Italy

3:10 PM

(ICACC-388-2022) Effect of Bi₂O₃ Sintering Aid on Thermal, Electrical, and Mechanical Property of LSCo/Al₂O₃ Composite Contact MaterialY. Chou*¹; J. Kim¹; N. L. Canfield¹; J. S. Hardy²

1. Pacific Northwest National Lab, Materials, USA
2. Pacific Northwest National Laboratory, Materials Science, USA

Joining and Mechanical Integrity

Room: Grand Ballroom Salons 1/2

3:30 PM**(ICACC-389-2022) Development of SOFC Stack Using a New Separator Module Fabricated by Brazing Technology (Invited)**J. Yu^{*1}; H. Kim¹; K. Yun¹

1. Korea Institute of Energy Research, Republic of Korea

4:00 PM**(ICACC-390-2022) Ensuring the mechanical integrity of solid oxide stack glass-ceramic seals**H. L. Frandsen^{*1}; I. Ritucci¹; S. Yu¹; X. Miao¹; S. Goutianos²; R. Kiebach¹

1. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark
2. NTNU, Department of Manufacturing and Civil Engineering, Norway

4:20 PM**(ICACC-391-2022) Novel glass-ceramic sealants for reversible solid oxide cells: Design, characterization, interfacial issues and test in relevant conditions**F. Smeacetto^{*1}; H. Javed²; K. Herbrig²; E. Zanchi¹; C. Bert³; D. Ferrero³; C. Walter²; M. Santarelli²

1. Politecnico di Torino, Applied Science and Technology, Italy
2. sunfire GmbH, Germany
3. Politecnico di Torino, Energy, Italy

S6: Advanced Materials and Technologies for Rechargeable Energy Storage**Solid Electrolytes for Batteries / Diagnostics and Materials Characterization for Lithium Batteries**

Room: Grand Ballroom Salons 7/8

Session Chairs: Palani Balaya, National University of Singapore; Naoaki Yabuuchi, Yokohama National University

8:30 AM**(ICACC-392-2022) Anionic redox in li-on cathode materials: A spectroscopic point of view (Invited)**M. Sougrati^{*1}

1. CNRS ICGM, France

9:00 AM**(ICACC-393-2022) A material search of lithium ion conducting solids based on crystal structures and chemical compositions (Invited)**K. Suzuki^{*1}; R. Kanno¹

1. Tokyo Institute of Technology, Institute of Innovative Research, Japan

9:30 AM**(ICACC-394-2022) Single Li-Ion Conducting Semi-Solid Electrolytes (Invited)**S. Lee^{*1}

1. Yonsei University, Chemical and Biomolecular Engineering, Republic of Korea

10:00 AM**Break****10:20 AM****(ICACC-395-2022) Fast Charging of Lithium-ion Cells: Electrode Characterization and Protocol Development (Invited)**D. Abraham^{*1}

1. Argonne National Laboratory, USA

10:50 AM**(ICACC-396-2022) Cold sintering of metal doped LLZO for solid state battery electrolytes**D. Dabera¹; P. Tabrizian¹; G. M. Jones¹; S. Gorman²; E. Kendrick²; C. E. Dancer^{*1}

1. University of Warwick, Warwick Manufacturing Group, United Kingdom
2. University of Birmingham, School of Metallurgy and Materials, United Kingdom

11:10 AM**(ICACC-397-2022) Ionic and Thermal Transport Properties of Li- and Na-ion conducting Glass-Ceramic Solid Electrolytes**M. Rohde^{*1}; H. J. Seifert²

1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany
2. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

11:30 AM**(ICACC-398-2022) Surface Modification of Li₇La₃Zr₂O₁₂ Ceramic for Lithium Dendrite Suppression (Invited)**C. Ban^{*1}

1. University of Colorado, Boulder, MECHANICAL ENGINEERING, USA

12:00 PM**(ICACC-399-2022) 3D printing of LAGP electrolyte for all solid state Lithium batteries**A. Sabato^{*1}; M. Nuñez Eroles¹; S. Anelli¹; M. Torrell¹; A. Morata¹; A. Tarancón¹

1. IREC, Nanoionics and Fuel Cells, Spain

Lithium Batteries and Technology

Room: Grand Ballroom Salons 7/8

Session Chairs: Valerie Pralong, CNRS ENSICAEN; Mickael Dollé, Université de Montreal

1:30 PM**(ICACC-400-2022) Computational design of Co-free layered cathode and metal-doped Li₄Ti₅O₁₂ anode in Li ion batteries (Invited)**S. Lin^{*1}

1. National Cheng Kung University, Materials Science and Engineering, Taiwan

2:00 PM**(ICACC-401-2022) Fluorinated cyclic phosphate-based electrolytes for high-voltage and safe batteries (Invited)**Y. Yamada^{*1}

1. Osaka University, SANKEN, Japan

2:30 PM**(ICACC-402-2022) Computation design of in situ formed protective layer in LiNi_{0.5}Mn_{1.5}O₄/Li_{0.33}La_{0.56}TiO₃/Li₄Ti₅O₁₂ all-solid-state battery**C. Lin^{*1}; S. Lin²

1. National Cheng Kung University, Materials Science and Engineering, Taiwan
2. National Cheng Kung University, Materials Science and Engineering, Taiwan

2:50 PM**Break****3:10 PM****(ICACC-403-2022) Polymeric Organo-Sulfur Cathodes (Invited)**L. Djuandhi¹; N. Sharma^{*1}

1. University of New South Wales, Chemistry, Australia

3:40 PM**(ICACC-404-2022) Ion Hopping Conduction in Molten Solvates of Li Salts for Li-S Batteries (Invited)**K. Dokko^{*1}

1. Yokohama National University, Japan

4:10 PM**(ICACC-405-2022) In-Operando Study of Electrochemical Strain and Charge Storage Mechanisms MnO₂ nanosheet electrodes**M. N. Flint^{*1}; P. Metz¹; P. Gao¹; R. Koch¹; S. T. Mistry²

1. Alfred University, School of Engineering, USA
2. Alfred University, MSE, USA

S7: 16th International Symposium on Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications

Nanoparticles for Biomedical Applications I

Room: Coquina Salon H

Session Chair: Thomas Fischer, University of Cologne

8:40 AM

(ICACC-406-2022) Development of Custom-designed Nanoparticles with Various Surface Functionalities for Biomedical Applications (Invited)

M. S. Toprak*¹

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden

9:10 AM

(ICACC-407-2022) Antibacterial Activity of Glycan Iron Oxide Nanoparticles based on Carbohydrate-Lectin Interactions (Invited)

I. Yazgan*¹; M. S. Toprak²; G. Saladino³; B. Hamawandi³; M. A. Demir¹

1. Kastamonu University, Biology, Turkey
2. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden
3. KTH Royal Institute of Technology, Applied Physics, Sweden

9:40 AM

(ICACC-408-2022) Anti-Microbial and Anti-Viral Ceramic Glazes for Sanitaryware with the additive of NP's ZnO prepared by chemical precipitation technique.

V. Rajendran*¹

1. Roca Bathroom Products (P) Ltd, Research and Development, India

10:00 AM

Break

Nanoparticles for Biomedical Applications II

Room: Coquina Salon H

Session Chair: Muhammet Toprak, KTH Royal Institute of Technology

10:20 AM

(ICACC-409-2022) XFCT imaging and the quest to find possible in vivo toxicity markers (Invited)

C. Vogt*¹; G. Saladino²; K. Shaker¹; Y. Li¹; Y. Katsu-Jiménez³; R. Kuiper⁴; M. S. Toprak⁵; B. Brodin¹; H. M. Hertz¹

1. KTH (Royal Institute of Technology), Applied Physics, Sweden
2. KTH Royal Institute of Technology, Applied Physics, Sweden
3. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden
4. Norwegian Veterinary Institute, Norway
5. Karolinska Institutet, Sweden

10:50 AM

(ICACC-410-2022) Functional Passivating Coatings for X-ray Fluorescent Nanoparticles

G. Saladino*¹; N. Kilic¹; K. Shaker¹; Y. Li¹; B. Hamawandi¹; C. Vogt¹; B. Brodin¹; M. Svenda¹; I. Yazgan²; H. M. Hertz¹; M. S. Toprak¹

1. KTH Royal Institute of Technology, Applied Physics, Sweden
2. Kastamonu University, Biology, Turkey

11:10 AM

(ICACC-411-2022) Dual-conjugated nanoprobe for site-specific biomedical applications.

S. Ilyas*¹; H. A. Schlöber¹; S. Mathur¹

1. Institute of Inorganic Chemistry, University of Cologne, Greinstraße 6, 50939, Germany
2. Center for Molecular Medicine Cologne and Translational Immunology, University Hospital Cologne, 50931, Germany

Functional Oxides for Sensing

Room: Coquina Salon H

Session Chair: Thomas Fischer, University of Cologne

1:30 PM

(ICACC-412-2022) Optimization of 1D core-shell heterostructures for gas sensing (Invited)

N. Pinna*¹

1. Humboldt-Universität zu Berlin, Department of Chemistry, Germany

2:00 PM

(ICACC-413-2022) Automotive Onboard Ceramic Sensors for Nitric Oxide Detection Using Double Perovskite Oxide (DPO)-Based Sensing Electrodes (Invited)

S. Mathur¹; A. Bhardwaj*¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

Functional Oxides for Catalysis

Room: Coquina Salon H

Session Chair: Nicola Pinna, Humboldt-Universität zu Berlin

2:30 PM

(ICACC-414-2022) Rational design of highly active metal-carbon heterojunctioned electrocatalysts by interface engineering for ion mobility enhancement

H. Choi*¹

1. University of Cologne, Germany

2:50 PM

(ICACC-415-2022) The Fermi level dependency on the catalytic activity of a semiconductor : A first-principles study

S. Ji*¹; M. Je¹; H. Choi¹

1. university of cologne, Institute of Inorganic Chemistry, Germany

3:10 PM

Break

3:30 PM

(ICACC-416-2022) Built-in electric field enhancing electrocatalysis of CoO/N-doped graphene for oxygen evolution reaction electrocatalysts

O. H. Li²; M. Je*¹; S. Ji¹; H. Choi¹

1. University of Cologne, Germany
2. Pusan National University, Materials Science and Engineering, Republic of Korea

3:50 PM

(ICACC-417-2022) Ni-Co(Cu)/ Ce_{1-x}Zr_xO_{2-σ} bimetallic catalysts prepared in supercritical alcohol media for dry reforming of methane

Y. N. Bespalko*¹; V. E. Fedorova¹; E. A. Smal¹; K. R. Valeev¹; V. A. Sadykov¹; M. N. Simonov¹

1. Borekov Institute of Catalysis, Heterogeneous catalysis, Russian Federation

Precursor derived Functional Materials

Room: Coquina Salon H

Session Chair: Heechae Choi, University of Cologne

4:10 PM

(ICACC-418-2022) A novel approach to Niobium-Carbide – Nickel-Niobium alloy composites: from a precursor to product (Invited)

S. Naim Katea*¹; C. Tai²; P. Ström²; P. Larsson⁴; H. Vidarsson⁴; G. Westin²

1. Uppsala University, Chemistry-Ångström, Sweden
2. Uppsala University, Sweden
3. Stockholm University, Department of Environmental and Materials, Sweden
4. Höganäs AB, Sweden

4:40 PM**(ICACC-419-2022) Scalable, cost-effective facile synthesis at ambient conditions of 1D and 2D metal oxides, their properties, and applications**H. O. Badr^{*1}; M. Barsoum²

1. Drexel University, Materials Science and Engineering, USA
2. Drexel University, Materials Science and Engineering, USA

5:00 PM**(ICACC-420-2022) Pre-ceramic Polymer-Assisted Nucleation and Growth (PPANG) of Anisotropic Cu₂S Nanostructures**P. A. Loughney^{*1}; K. Martin²; P. Cuillier¹; E. Trigg³; M. B. Dickerson³; T. Pruyn³; V. Doan-Nguyen¹

1. Ohio State University, Materials Science Engineering, USA
2. Air Force Research Lab, Materials and Manufacturing Directorate, USA
3. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA
4. MSE, The Ohio State University, Columbus, OH, United States., Materials Science and Engineering, USA

S8: 16th International Symposium on Advanced Processing and Manufacturing Technologies for Structural and Multifunctional Materials and Systems (APMT16)

Design-Oriented Processing

Room: Grand Ballroom Salon 5

Session Chair: Tohru Suzuki, National Institute for Materials Science

8:30 AM**(ICACC-421-2022) Structural and optical properties of epitaxial rare-earth-doped β -(Al_xGa_{1-x})₂O₃ films grown by spin-coating method (Invited)**I. Milisavjevic¹; Y. Wu^{*1}

1. Alfred University, Kazuo Inamori School of Engineering, New York State College of Ceramics, USA

9:00 AM**(ICACC-422-2022) Approaches to determine the thermoelectric transport parameters by using experimental results (Invited)**K. Lee^{*1}

1. Yonsei University, Republic of Korea

9:30 AM**(ICACC-423-2022) Green State Processability and Final Mechanical Properties of SiC Prepared by Co-Extrusion**R. Orta Guerra^{*1}; O. Brandt²; R. Trice³; J. P. Youngblood⁴

1. Purdue University, Materials Engineering, USA
2. Purdue University, Materials Engineering, USA
3. Purdue University, Department of Materials Engineering, USA
4. Purdue University, School of Materials Engineering, USA

9:50 AM**(ICACC-424-2022) Investigation of Lamination Approaches of SiC Ceramic-Filled Polymer Blends for Co-Extrusion**O. Brandt^{*1}; R. Orta Guerra¹; R. Trice¹; J. P. Youngblood¹

1. Purdue University, Department of Materials Engineering, USA

10:10 AM**Break****Hybrid Process and Applications II**

Room: Grand Ballroom Salon 5

10:30 AM**(ICACC-425-2022) Stainless steel microfibers with amorphous-nanosized microstructure**E. Sharifkholouei^{*1}; B. Sarac²; J. Eckert²

1. Politecnico Torino, Applied Science and Technology, Italy
2. Erich Schmid Institute of Materials Science, Austria

10:50 AM**(ICACC-426-2022) Tailoring the dielectric properties of cordierite based glass ceramics**P. Kumari^{*1}; R. Gangwar¹; P. M. Sarun²; D. Kumar³

1. IIT (ISM) Dhanbad, Electronics Engineering, India
2. IIT ISM Dhanbad, Physics, India
3. IIT(BHU), Ceramics Engineering, India

11:10 AM**(ICACC-427-2022) Transient Liquid Phase Bonding of SiC Ceramics Using Ti/Cu Interlayer**T. Ozaki^{*1}; H. Tsuda²; S. Mori³

1. Osaka Research Institute of Industrial Science and Technology, Applied Material Chemistry, Japan
2. Osaka Prefecture University, Materials Science, Japan
3. Osaka Prefecture University, Materials Science, Japan

11:30 AM**(ICACC-428-2022) Surface strengthening of ceramic materials by high-temperature laser shock peening**F. Wang¹; X. Chen¹; D. P. DeLellis²; A. Krause²; Y. Lu¹; B. Cui^{*1}

1. University of Nebraska-Lincoln, USA
2. University of Florida, USA

Advanced Powder Synthesis and Processing I

Room: Grand Ballroom Salon 5

Session Chair: Enrico Bernardo, University of Padova

1:30 PM**(ICACC-429-2022) Synthesis of a Compositionally Complex Rare-Earth Carbonate Hydroxide and its Conversion into a High-Entropy Sesquioxide (Invited)**E. Ionescu^{*1}

1. Technical University Darmstadt, Materials Science, Germany

2:00 PM**(ICACC-430-2022) Compaction behavior of Al₂O₃ green body characterized by liquid immersion, X-ray tomography, and computer simulation (Invited)**M. Kang¹; H. Bae¹; R. Biswas¹; D. Yoon^{*1}

1. Yeungnam University, School of Materials Science and Engineering, Republic of Korea

2:30 PM**(ICACC-431-2022) Suppression effect of coarse defects by addition of ZrO₂ to Al₂O₃ ceramics**S. Tanaka^{*1}

1. Nagaoka University of Technology, Materials Science and Technology, Japan

2:50 PM**Break****Advanced Powder Synthesis and Processing II**

Room: Grand Ballroom Salon 5

Session Chair: Emanuel Ionescu, Technical University Darmstadt

3:20 PM**(ICACC-432-2022) Double-life construction materials from discarded glass and volcanic ash**L. Contrafatto²; E. Bernardo^{*1}

1. University of Padova, Department of Industrial Engineering, Italy
2. University of Catania, Department of Civil Engineering and Architecture, Italy

3:40 PM**(ICACC-433-2022) High pressure synthesis of CuSr₂CaCu₂O_y superconductor and the optimization of hole doping level**H. Suematsu^{*1}; Z. Feng¹; L. Q. Phuc¹; T. Do¹; T. Nakayama¹

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

4:00 PM**(ICACC-434-2022) Compositional Tuning of the Magnetic Properties of Fe₃Ga₄**O. Bishop*¹; B. Wilfong²; V. Sharma¹; A. Fedorko³; D. Heiman³; M. E. Jamer²; R. Barua¹

1. Virginia Commonwealth University, Department of Mechanical & Nuclear Engineering, USA
2. United States Naval Academy, Physics Department, USA
3. Northeastern University, Physics Department, USA

4:20 PM**(ICACC-435-2022) The effect of electron radiation on the mechanical properties of potassium and metakaolin-based geopolymers**Y. Yang*¹; H. Suematsu²; I. Kudou²; T. Do³; T. Le³; G. Thorogood¹

1. ANSTO, Australia
2. ADVAN ENG.Co., Japan
3. Extreme Energy-Density Research Institute, Nagaoka University of Technology, Japan
4. Extreme Energy-Density Research Institute, Nagaoka University of Technology, Japan

4:40 PM**(ICACC-436-2022) Effects of BN additive on electrical, thermal, and mechanical properties of porous SiC ceramics**S. Kultayeva*¹; Y. Kim¹

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea

5:00 PM**(ICACC-437-2022) A new irradiation target of β -MoO₃ to produce ⁹⁹Mo/^{99m}Tc by neutron capture method**N. M. Chu*¹; T. Suzuki²; T. Do¹; T. Nakayama⁴; K. Niihara¹; H. Suematsu³

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
2. Nagaoka University of Technology, Nuclear system safety engineering, Japan
3. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
4. Nagaoka University of Technology, Japan

S10: Modeling and Design of Ceramics and Composites**Informatics and Machine Learning**

Room: Flagler C

8:30 AM**(ICACC-439-2022) Computational determination of microstructural state of C/C-SiC through image analysis (Invited)**T. Lehnert*²; D. Koch¹; N. Jain²; L. Klopsch²

1. University of Augsburg, Institute for Materials Resource Management MRM, Materials Engineering, Germany
2. DLR - German Aerospace Center, Ceramic Composites and Structures, Germany

9:00 AM**(ICACC-440-2022) Development of Deep Learning Potentials for Zirconium and High-Entropy Stabilized Diborides**N. Octovian*¹; B. Timalina¹; W. Fahrenholtz²; G. Hilmas²; R. Sakidja¹

1. Missouri State University, Dept. Physics, Astronomy and Materials Science, USA
2. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

9:20 AM**(ICACC-441-2022) Simulations of Complex Materials with Neural Network Potentials (Invited)**J. Behler*¹

1. Göttingen University, Chemistry, Germany

9:50 AM**Break****10:10 AM****(ICACC-442-2022) Non-parametric machine learning for orbital-free DFT simulations (Invited)**S. Manzhos*¹; M. Ihara¹

1. Tokyo Institute of Technology, School of Materials and Chemical Technology, Japan

10:40 AM**(ICACC-443-2022) A data informatics approach for polymer-derived silicon oxycarbides**K. Lu*¹; Y. Cho¹

1. Virginia Tech, USA

High Throughput Design and Characterization

Room: Flagler C

1:30 PM**(ICACC-444-2022) Design of ABO₃ perovskites with low thermal conductivity combining theoretical and experimental methods (Invited)**B. Liu*¹

1. Shanghai University, China

2:00 PM**(ICACC-445-2022) AI-assisted accelerated discovery of novel materials for ballistic applications**S. Bavdekar*²; R. G. Hennig¹; G. Subhash²

1. University of Florida, Materials Science and Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

2:20 PM**(ICACC-446-2022) High-throughput screening for 2D electrocatalysts (Invited)**L. Shen*¹

1. National University of Singapore, Mechanical Engineering, Singapore

2:50 PM**(ICACC-447-2022) High-throughput Engineering of Oxidation Behavior in Disordered MAX phases**D. Saucedo*¹; P. Singh⁴; M. Radovic²; R. Arroyave²

1. Texas A&M University, Materials Science and Engineering, USA
2. Texas A&M University, Materials Science and Engineering, USA
3. Texas A&M University, Materials Science & Engineering, USA
4. Ames Laboratory, U.S. Department of Energy, USA

3:10 PM**(ICACC-448-2022) Application of Machine Learning to the Theory of X-ray Spectroscopy (Invited)**J. Lueder*¹

1. National Sun Yat-Sen University, Department of Materials and Optoelectronic Science, Taiwan

S12: On the Design of Nano-Laminated Ternary Transition Metal Carbides/Nitrides (MAX Phases) and Borides (MAB Phases), Solid Solutions Thereof, and 2D Counterparts (MXenes, MBenes)**Theoretical Calculations of Designing and Predicting**

Room: Coquina Salon F

Session Chairs: Deniz Cakir, University of North Dakota; Surojit Gupta, University of North Dakota

8:30 AM**(ICACC-449-2022) Ab initio modeling of MAB phase solid solutions (Invited)**D. Cakir*¹

1. University of North Dakota, Physics and Astrophysics, USA

9:00 AM**(ICACC-450-2022) Energy resolved contributions of the functionalization groups on the valence band spectra of the $T_3C_2T_x$ MXene**F. Brette*¹; H. Pazniak¹; R. Larciprete²; A. Liedl³; P. Lacovig⁴; D. Lizzit⁴; E. Tosi⁴; C. Canaff⁵; S. Celerier⁶; F. Boucher⁶; V. Mauchamp¹

1. Institut PPRIME, Physics and Mechanics of Materials, France
2. CNR-Institute for Complex Systems ISC, Italy
3. INFN-LNF, Italy
4. Elettra-Sincrotrone Trieste, Italy
5. Institut de Chimie des Milieux et Matériaux de Poitiers IC2MP UMR7285, France
6. Institut of Materials Jean Rouxel, France

9:20 AM**(ICACC-451-2022) Stability predictions of quaternary MAX and MAB phases (Invited)**M. Dahlqvist*¹

1. Linköping University, IFM, Sweden

9:50 AM**(ICACC-452-2022) Effects of MX and A layers on the non-classical crystallographic slip in MAX phases**Z. Zhan*¹; M. Radovic²; A. Srivastava³

1. Texas A&M University, MSEN, USA
2. Texas A&M University, Materials Science & Engineering, USA
3. Texas A&M University, USA

10:10 AM**(ICACC-453-2022) Novel PEEK-MAX or PEEK-MAB Composites for Fuel-lubricated Sliding**C. Matzke¹; N. Murthy²; S. Berkebile²; S. Gupta*¹

1. University of North Dakota, Mechanical Engineering, USA
2. US Army Research Laboratory (DEVCOM), USA

S13: Development and Applications of Advanced Ceramics and Composites for Nuclear Fission and Fusion Energy Systems**Material Technologies for Enhanced Accident Tolerance LWR Fuels and Core II**

Room: Grand Ballroom Salon 4

8:30 AM**(ICACC-454-2022) Response of SiC/SiC Cladding to Loss-of-Coolant Accident Burst Testing and Steam Oxidation (Invited)**K. Kane*¹; C. Deck²; S. Bell³; T. Koyanagi⁴

1. Oak Ridge National Laboratory, USA
2. General Atomics, USA
3. University of Tennessee, Materials Science and Engineering, USA
4. Oak Ridge National Laboratory, USA

9:00 AM**(ICACC-455-2022) Development of Corrosion Protection Coatings of SiC Ceramics for Application of Accident Tolerant Fuel**W. Kim*¹; D. Kim¹; H. Lee¹; J. Park¹

1. Korea Atomic Energy Research Institute, Republic of Korea

9:20 AM**(ICACC-456-2022) Hydrothermal Corrosion of CVD SiC: New Corrosion Model and Mitigation Strategies**A. Seshadri¹; K. Shirvan*¹

1. Massachusetts Institute of Technology, USA

9:40 AM**(ICACC-457-2022) Hydrothermal Corrosion behavior of Additively Manufactured SiC fibers: Effect of Irradiation and Thermal pre-treatment**A. Seshadri*¹; J. Pegna⁴; S. Harrison³; K. Shirvan²

1. Massachusetts Institute of Technology, Nuclear Science and Engineering, USA
2. Massachusetts Institute of Technology, USA
3. Free Form Fibers, USA
4. Free Form Fibers, USA

10:00 AM**Break****Mechanical Properties of SiC Composites**

Room: Grand Ballroom Salon 4

10:20 AM**(ICACC-458-2022) Experimental Investigation of Multiaxial Failure Criterion of SiC/SiC Composites**C. Hu¹; J. F. Labuz²; J. Le*¹; T. Koyanagi²

1. University of Minnesota, USA
2. Oak Ridge National Laboratory, USA

10:40 AM**(ICACC-459-2022) Impact of grinding process on the mechanical behavior of CVI-SiC/SiC tubes for nuclear application**C. Morel*¹; C. Marques²; E. Baranger²; C. Lorrette¹; J. Braun¹; J. L. Lamon²

1. CEA, LTMEX, France
2. LMT, ENS Paris-Saclay, Université Paris-Saclay, CNRS, France

11:00 AM**(ICACC-460-2022) Estimation of Variability in Elastic Constants of Silicon Carbide Composite Tubes**H. Thandaga Nagaraju*¹; J. Nance²; B. Sankar¹; G. Subhash³; N. Kim¹

1. University of Florida, Mechanical and Aerospace Engineering, USA
2. University of Florida, Material Science Engineering, USA
3. University of Florida, Mechanical and Aerospace Engineering, USA

11:20 AM**(ICACC-461-2022) Relationship Between SiC_n/SiC Microstructure Heterogeneity and Strength of SiC_n/SiC**J. Nance*¹; G. Subhash²; N. Kim²; B. Sankar²

1. University of Florida, Material Science Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

11:40 AM**(ICACC-462-2022) Quantifying Residual Stress in SiC Fibers of SiC/SiC Composites Using Raman Spectroscopy**J. Nance*¹; G. Subhash²; N. Kim²; B. Sankar²

1. University of Florida, Material Science Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

Novel Ceramics and Composites for Nuclear Systems II

Room: Grand Ballroom Salon 4

1:30 PM**(ICACC-463-2022) Progress in Homogeneous Joining of Silicon Carbide Ceramic Matrix Composites**J. Pegna*¹; K. L. Williams¹; S. Harrison²

1. Free Form Fibers, USA
2. Free Form Fibers, USA

1:50 PM**(ICACC-464-2022) Pressure-less glass-ceramic joining of SiC/SiC nuclear fuel clads for Light Water Reactors**S. De La Pierre*¹; M. Ferraris²

1. Politecnico di Torino, DISAT, Italy
2. Politecnico di Torino, Department of Applied Science and Technology, Italy

2:10 PM**(ICACC-465-2022) Development of Pressureless Liquid Phase Sintered SiC Ceramics and SiC_x/SiC Composites**J. Lee*¹; T. Hinoki²

1. Kyoto University, Graduate School of Energy Science, Japan
2. Kyoto University, Japan

2:30 PM**(ICACC-466-2022) Comparative characterization of Tyranno™ SA3 and SA4 SiC fibers**H. Gietl*¹; T. Koyanagi²; O. Karakoc³; Y. Katoh³

1. Oak Ridge National Laboratory, USA
2. Oak Ridge National Laboratory, USA
3. Oak Ridge National Laboratory, USA
4. Oak Ridge National Lab, Materials Science and Technology, USA

2:50 PM**Break****Material Technologies and Test Method for Nuclear Systems**

Room: Grand Ballroom Salon 4

3:20 PM**(ICACC-467-2022) PVD Cr Coatings for Enhanced Hydrothermal Corrosion Resistance of SiC-SiC, Fuel Cladding in LWRs**K. Quillin*¹; H. Yeom¹; T. Dabney¹; T. Kim¹; S. Chemerisov²; A. Couet¹; K. Sridahran¹

1. University of Wisconsin, USA
2. Argonne National Laboratory, USA

3:40 PM**(ICACC-468-2022) Advanced Pre- and Post Irradiation Characterization and Multiscale Testing for SiC Ceramic Matrix Composite Cladding as Accident Tolerant Fuel Candidate Materials for LWR Applications**P. Xu*¹; D. Frazer¹; T. Pavlov¹; N. Cordes¹; F. Cappia¹; J. Schulthess¹; D. Kamerman¹; S. Gonderman²; C. Deck²; J. Gazza²

1. Idaho National Lab, USA
2. General Atomics, USA
3. General Atomics, USA

4:00 PM**(ICACC-469-2022) Flexural Strength of Continuous Fiber-Reinforced Advanced Ceramic Tubular Test Specimens at Ambient Temperature: ASTM Standard Test Method 1899**M. G. Jenkins*¹; J. E. Gallego¹

1. Bothell Engineering and Science Technologies, USA

4:20 PM**(ICACC-470-2022) Nuclear Applications of SiC-SiC CMCs and Graphite: Update on Revised Design and Construction Rules in the ASME BPV Code Section III, Division 5**M. G. Jenkins*¹; S. T. Gonczyk²; J. W. Geringer²; Y. Katoh⁴

1. Bothell Engineering and Science Technologies, USA
2. Gateway Materials Technology, USA
3. Oak Ridge National Lab, Nuclear Materials Research Projects, USA
4. Oak Ridge National Laboratory, USA

4:40 PM**(ICACC-471-2022) Experimental evaluation of radiation-induced bowing in SiC/SiC components**C. Petrie*¹; J. W. Geringer²; A. James¹; J. Burns¹; C. Deck²; T. Koyanagi³; Y. Katoh⁴

1. Oak Ridge National Lab, Nuclear Energy and Fuel Cycle Division, USA
2. General Atomics, USA
3. Oak Ridge National Laboratory, USA
4. Oak Ridge National Laboratory, USA

S14: Crystalline Materials for Electrical, Optical and Medical Applications**Processing and Fundamentals I**

Room: Flagler A/B

Session Chairs: Kiyoshi Shimamura, National Institute for Materials Science; Tetsuo Tsuchiya, National Institute of Advanced Industrial Science and Technology (AIST)

1:30 PM**(ICACC-472-2022) New synthesis method of non-stoichiometric rare earth niobates using rubidium carbonate flux (Invited)**K. Toda*¹

1. Niigata University, Japan

2:00 PM**(ICACC-473-2022) Local characterization of high entropy materials using X-ray absorption fine structure spectroscopy (Invited)**C. M. Rost*¹; T. Valentine¹; D. Rossi¹; G. Niculescu¹; A. Mazza³; M. Webb²; J. L. Braun⁴; P. Hopkins⁴; J. Heron²; T. Z. Ward³; J. Maria⁵

1. James Madison University, Physics and Astronomy, USA
2. University of Michigan, Materials Science and Engineering, USA
3. Oak Ridge National Laboratory, USA
4. University of Virginia, Mechanical and Aerospace Engineering, USA
5. The Pennsylvania State University, USA

2:30 PM**(ICACC-474-2022) Electric properties of epitaxial Pb(Zr, Ti)O₃ thin film transferred from SrTiO₃(100) to flexible printed circuit made of polyimide and Cu electrodes (Invited)**H. Nishikawa*¹; T. Mizuyama¹; T. Nishigaki¹; N. Hirotsaki²

1. Kindai University, Japan
2. Taiyo Industrial Co., LTD, Japan

3:00 PM**Break****Processing and Fundamentals II**

Room: Flagler A/B

Session Chair: Kenji Toda, Niigata University

3:20 PM**(ICACC-475-2022) Augmenting optical-grade surface finishing in ultra-precision machining of brittle materials (Invited)**H. Wang*¹

1. National University of Singapore, Mechanical Engineering, Singapore

3:50 PM**(ICACC-476-2022) Band gap engineering of Ga₂O₃-Al₂O₃ solid solution ceramics (Invited)**G. Zhang*¹; Y. Wu¹

1. Alfred University, Kazuo Inamori School of Engineering, New York State College of Ceramics, USA

4:20 PM**(ICACC-477-2022) Processing and Thermal Properties of Oxide-Based Nanocomposite Ceramics**J. Wollmershauser*¹; K. Anderson²; b. greenberg³; H. Ryou¹; E. Gorzkowski¹; B. Feigelson³

1. U.S. Naval Research Laboratory, Materials Science & Technology Division, USA
2. National Research Council Postdoctoral Research Fellow sited at U.S. Naval Research Laboratory, USA
3. Electronic Science & Technology Division, U.S. Naval Research Laboratory, USA

S15: 6th International Symposium on Additive Manufacturing and 3-D Printing Technologies

NIST Discussion Panel: Direct Ink Writing

Room: Coquina Salon C

Session Chairs: Igor Levin, NIST; Andrew Allen, NIST

8:30 AM

(ICACC-478-2022) Developing and Characterizing Ceramic Feedstock for DLP Additive Manufacturing (Invited)

D. Cillessen*¹

1. Sandia National Laboratories, USA

8:45 AM

(ICACC-479-2022) Are Standards For Ceramic Feedstocks For Additive Manufacturing Feasible? (Invited)

J. Cesarano*¹

1. Robocasting Enterprises LLC, USA

9:00 AM

(ICACC-480-2022) Additive Manufacturing for Advanced Ceramics at the DEVCOM Army Research Lab (Invited)

N. Ku*¹; J. Pelz¹; A. T. Rosenberger¹; L. Vargas-Gonzalez¹

1. DEVCOM - Army Research Laboratory, Ceramics and Transparent Materials Branch, USA

9:15 AM

(ICACC-481-2022) High Performance requirements on ceramic based Printed Circuit Structures (Invited)

C. M. Newton¹, P. Deffenbaugh*²

1. nScript Inc., USA
2. Sciperio, Inc., USA

9:30 AM

(ICACC-482-2022) Direct Writing (Robocasting) of ceramics towards industrialization (Invited)

P. Vilarinho*¹; P. Lemos Marques¹; J. Marinheiro²

1. University of Aveiro, Department of Materials and Ceramics, Portugal
2. Costa Verde Porcelanas SA, Portugal

9:45 AM

Panel Discussion

10:00 AM

Break

10:20 AM

(ICACC-483-2022) Symposium S15 NIST Panel Discussion Participation (Invited)

B. Cox*¹

1. Honeywell, USA

10:35 AM

(ICACC-484-2022) NIST Panel Discussion on the Requirements for Standards Development and Materials Database for Ceramic Additive Manufacturing (Invited)

J. Weigner*¹

1. Lockheed Martin, USA

10:50 AM

(ICACC-485-2022) Ceramics Multi Materials Additive Manufacturing (AM) (Invited)

A. Michaelis*¹

1. Fraunhofer IKTS, Germany

11:05 AM

(ICACC-486-2022) NIST Panel Discussion - Ceramic Direct-Ink-Write Additive Manufacturing Technology Maturation Requirements and Standardization (Invited)

B. D. Ribic*¹

1. NCDMM/America Makes, USA

11:20 AM

(ICACC-487-2022) Defect Characterisation and Length Scale in Ceramics Additive Manufacture (Invited)

B. Derby*¹

1. University of Manchester, Department of Materials, United Kingdom

11:35 AM

Panel Discussion and Wrap-up

Direct Writing & Inkjet Printing

Room: Coquina Salon C

Session Chairs: Hiroya Abe, Osaka University; Russell Maier, National Institute of Standards and Technology

1:30 PM

(ICACC-488-2022) Facile Syntheses of Ceramics Nanoparticles for Direct Ink Writing (Invited)

H. Abe*¹; F. Li¹

1. Osaka University, Joining and Welding Research Institute, Japan

2:00 PM

(ICACC-489-2022) Direct Ink Writing of Solid Infilled Specimens with Aqueous-based Silicon Nitride In

W. J. Costakis*¹; C. Wyckoff¹; A. Schlup¹; A. Hilmas¹; L. M. Rueschhoff²

1. Air Force Research Labs, Materials and Manufacturing Directorate, USA
2. Air Force Research Lab, Materials and Manufacturing Directorate, USA

2:20 PM

(ICACC-490-2022) Optimizing Cure Depth of Photocurable Silver Ink for Direct Writing

S. Kondapalli*¹; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

2:40 PM

(ICACC-491-2022) Optimizing Functionally Graded ZrB₂-Mo Components by Ceramic On-Demand Extrusion (CODE)

A. J. Martin*¹; J. Watts¹; G. Hilmas¹; M. C. Leu²; T. Huang³

1. Missouri University of Science & Technology, Materials Science and Engineering, USA
2. Missouri University of Science & Technology, Mechanical and Aerospace Engineering, USA
3. NNSA's Kansas City National Security Campus, USA

3:00 PM

Break

3:20 PM

(ICACC-492-2022) Ceramic Additive Manufacturing: New Insights Into Direct-Ink Writing and Cold Sintering

R. Maier*¹

1. National Institute of Standards and Technology, USA

3:40 PM

(ICACC-493-2022) Easily applicable protocol to formulate inks for extrusion-based 3D printing

H. Le Ferrand*¹

1. Nanyang Technological University, Singapore

4:00 PM

(ICACC-494-2022) Anisotropic microstructures in silicon carbide via direct ink writing

T. Marconie*¹; K. Cox¹; R. Trice¹; J. P. Youngblood¹

1. Purdue University, Department of Materials Engineering, USA

Material Extrusion & Fused Deposition

Room: Coquina Salon C

Session Chair: Hiroya Abe, Osaka University

4:20 PM**(ICACC-495-2022) Colloidal feedstock with a high content of graphite particles for self-supporting 3D conductive electrodes by FFF**O. Urra Sanchez*¹

1. Institute of Ceramics and Glass, CSIC, Chemical physics of surfaces, Spain

4:40 PM**(ICACC-496-2022) Integrating polymer derived ceramics with fused filament fabrication 3-D printing**A. Kulkarni*¹; G. Soraru²; J. M. Pearce³

1. University of Trento, Department of Industrial Engineering, Italy
2. University of Trento, Industrial Engineering, Italy
3. University of Western Ontario, Department of Electrical and Computer Engineering, Canada

S16: Geopolymers, Inorganic Polymers and Sustainable Materials**Geopolymer Composites II**

Room: Coquina Salon A

Session Chair: Ghassan Al-Chaar, US Army Engineer Research and Development Center

8:30 AM**(ICACC-497-2022) Characterization of geopolymer composites under extreme conditions (Invited)**A. C. Trindade*¹; F. d. Silva²

1. Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Civil and Environmental Engineering, Brazil
2. Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio), Civil Engineering, Brazil

9:00 AM**(ICACC-498-2022) Geopolymer-composite adsorbents for the treatment of polluted flows (Invited)**E. Papa*¹; E. Landi¹; A. Natali Murri¹; V. Medri¹

1. CNR ISTECC, Italy

9:30 AM**(ICACC-499-2022) Natural fibers reinforced geopolymer plates (Invited)**M. G. Sá Ribeiro*¹; I. P. Miranda¹; W. M. Kriven²; R. A. Sa Ribeiro³

1. Bionorte Network / INPA / UIUC, Biodiversity and Biotechnology, Brazil
2. University of Illinois at Urbana-Champaign, USA
3. National Institute for Amazonian Research (INPA), Green Building and Engineering Laboratory (LECVerde), Brazil

10:00 AM**Break****10:20 AM****(ICACC-500-2022) Corrosion Behavior of Reinforced Metakaolin-based Geopolymer Concrete**O. D. Huang*¹; C. Kim¹; H. Castaneda-Lopez¹; M. Radovic¹

1. Texas A&M University, Materials Science & Engineering, USA

10:40 AM**(ICACC-501-2022) A Comparison of the Mechanical Strengths of OPC and Geopolymer Composites (Invited)**W. Mendoza*¹; A. Myers²; G. K. Al-Chaar¹; W. M. Kriven³

1. Construction Engineering Research Laboratory, USA
2. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
3. University of Illinois at Urbana-Champaign, USA

Novel Applications of Geopolymers I

Room: Coquina Salon A

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

11:00 AM**(ICACC-502-2022) Geopolymer Crossties Prestressed with Basalt Fiber Reinforced Polymer (Invited)**G. K. Al-Chaar*¹; A. Saroufim²; M. Issa³

1. US Army Engineer Research and Development Center, Materials and Structure, USA
2. UIC, Civil, USA
3. UIC, Structural and Materials Engineering, USA

11:30 AM**(ICACC-503-2022) Solid solutions as precursors for high strength geopolymer composites: Effects of particles on the microstructure and mechanical properties (Invited)**E. Kamseu*¹

1. MIPROMALO, Research, Cameroon

Novel Applications of Geopolymers II

Room: Coquina Salon A

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

1:30 PM**(ICACC-504-2022) Steps of hydrothermal hydrogen release of NaBH₄ stored in geopolymer and zeolite (SOD), a new chance of reload? (Invited)**C. Rüscher*¹

1. Leibniz University Hannover, Mineralogy, Germany

2:00 PM**(ICACC-505-2022) Low cost, amorphous self-healing, geopolymer composites (Invited)**P. F. Keane*¹; R. Jacob²; M. Belusko³; N. Stanford¹; W. M. Kriven⁴; F. Bruno¹

1. University of South Australia, Future Industries Institute, Australia
2. Forschungszentrum Juelich GmbH, Germany
3. Mondial Advisory Pty Ltd, Australia
4. University of Illinois at Urbana-Champaign, USA

2:30 PM**(ICACC-506-2022) Geopolymers in Heterogeneous Catalysis: Progress and Prospective (Invited)**M. Alzeer*¹; M. Illikainen¹

1. University of Oulu, Fibre and particle engineering research unit, Finland

3:00 PM**Break****3:20 PM****(ICACC-507-2022) Understanding configuration of geopolymer materials for application in solar-cells**A. Bafti*¹; F. Brlekovic¹; V. Mandic¹; I. Panzic¹; G. Mali²

1. Faculty of Chemical Engineering and Technology, Department for Inorganic Chemical Technology and Non-metals, Croatia
2. National Institute of Chemistry, Department of Inorganic Chemistry and Technology, Slovenia

3:40 PM**(ICACC-508-2022) Effect of different strain rates on the mechanical and bond behavior of polymer and impregnated carbon fibers (Invited)**R. Mansur de Castro Silva*¹; J. Zhao²; M. Liebscher²; I. Curosu²; F. d. Silva¹; V. Mechtcherine²

1. Pontifícia Universidade Católica do Rio de Janeiro, Department of Civil and Environmental Engineering, Brazil
2. Technische Universität Dresden, Institute of Construction Materials, Germany

4:00 PM**(ICACC-509-2022) hydrophobic mineral coatings for geopolymers (Invited)**S. Rossignol*¹; A. Gharzouni¹

1. IRCER, France

4:30 PM

(ICACC-510-2022) Geopolymer-derived Hybrid Superhydrophobic Materials (Invited)D. Wang^{*1}; L. He¹; D. Guo¹; G. Zhang¹

1. University of Massachusetts Amherst, Civil and Environmental Engineering, USA

S17: Advanced Ceramic Materials and Processing for Photonics and Energy**Multifunctional Materials I**

Room: Coquina Salon E

Session Chair: Alberto Vomiero, Lulea University of Technology

1:30 PM

(ICACC-511-2022) Ternary metal fluoride nanostructures – From microwave-assisted synthesis to opto-magnetic applications (Invited)E. Hemmer^{*1}

1. University of Ottawa, Chemistry and Biomolecular Sciences, Canada

2:00 PM

(ICACC-512-2022) MOCVD growth of BiFeO₃ based films: structural and multiferroic properties (Invited)Q. Micard¹; G. Malandrino^{*1}

1. Università degli Studi di Catania, Dipartimento Scienze Chimiche, Italy

2:30 PM

(ICACC-513-2022) Polymer Assisted Growth of Composite Metal Oxide/graphene Based Nanofibers for Energy and Sensing Applications (Invited)D. Kisailus^{*1}

1. University of California at Irvine, Materials Science and Engineering, USA

3:00 PM

Break

3:20 PM

(ICACC-514-2022) Additive Manufacturing of Materials with Small-Scale Features for Medical Applications (Invited)R. Narayan^{*1}

1. North Carolina State University, USA

3:50 PM

(ICACC-515-2022) Electronic, optical and plasmonic properties of transparent conducting TiO₂-based nanostructures and thin films (Invited)B. R. Bricchi¹; M. Sygletou²; G. Terraneo¹; F. Bisio³; C. Mancarella¹; F. Rusconi¹; E. Moggi¹; P. Biagioni¹; A. Li Bassi^{*1}

1. Politecnico di Milano, Italy
2. University of Genova, Italy
3. CNR-SPIN, Italy

4:20 PM

(ICACC-516-2022) Metallic materials for environmental remediation: the case of MoO₂ (Invited)M. Epifani^{*1}

1. CNR-IMM, Italy

4:50 PM

(ICACC-517-2022) Understanding the Origin of the Thermo-chromic Property Changes in Doped Vanadium Dioxide (Invited)D. Koch^{*2}; M. Chaker¹

1. INRS, Energie Matériaux Télécommunications, Canada
2. INRS, Energie Matériaux Télécommunications, Canada

S18: Ultra-High Temperature Ceramics**Entropy-stabilized Compositionally Complex UHTCs and Superhard UHTCs**

Room: Flagler A/B

Session Chair: Bai Cui, University of Nebraska–Lincoln

8:30 AM

(ICACC-518-2022) From Bulk Single-Phase High-Entropy (MB₂, MB, M₃B₄, MB₄, and MB₆) Borides to Dual-Phase High-Entropy UHTCs and Compositionally Complex Ceramics (CCCs) (Invited)J. Luo^{*1}

1. University of California, San Diego, USA

9:00 AM

(ICACC-519-2022) Transformation of metastable dual-phase (Ti_{0.25}V_{0.25}Zr_{0.25}Hf_{0.25})B₂ to stable high entropy single-phase boride by thermal annealingA. C. Feltrin^{*1}; D. Hedman²; F. Akhtar¹

1. Luleå University of Technology, Materials Engineering, Sweden
2. Institute for Basic Science (IBS), Center for Multidimensional Carbon Materials, Republic of Korea

9:20 AM

(ICACC-520-2022) Carbon Fiber Induced Strengthening in Multi-Component Ultra-High Temperature CeramicsA. Nisar^{*1}; C. Zhang¹; B. Boesl¹; A. Agarwal²

1. Florida International University, Mechanical & Materials Engineering, USA
2. Florida International University, USA

9:40 AM

(ICACC-521-2022) Dual phase high entropy boride – carbide ceramics synthesized by boro/carbothermal reductionP. Brune^{*1}; L. Feng²; J. Watts³; G. Hilmars⁴; W. Fahrenholtz²

1. Missouri University of Science & Technology, Ceramic Engineering, USA
2. Missouri University of Science & Technology, Materials Science and Engineering, USA
3. Missouri University of Science & Technology, Materials Science and Engineering, USA
4. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA

10:00 AM

Break

10:20 AM

(ICACC-522-2022) The synthesis of high-entropy ultra-high temperature ceramic powders (Invited)Y. Chu^{*1}

1. South China University of Technology, China

10:50 AM

(ICACC-523-2022) A High Entropy Route To Tough CeramicsN. S. McIlwaine^{*1}; M. D. Hossain¹; A. Chatterjee²; J. Maria¹; T. Borman¹; A. Misra²

1. The Pennsylvania State University, Materials Science and Engineering, USA
2. University of Michigan, Materials Science and Engineering, USA

11:10 AM

(ICACC-524-2022) High Entropy Boride-Carbide Ceramics by Boro/carbothermal Co-synthesisS. M. Smith^{*1}; L. Feng²; W. Fahrenholtz²; G. Hilmars⁴; T. Huang⁴

1. Missouri University of Science & Technology, Materials Science and Engineering, USA
2. Missouri University of Science & Technology, Materials Science and Engineering, USA
3. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
4. Honeywell Federal Manufacturing & Technologies, USA

11:30 AM

(ICACC-525-2022) Developing High-Entropy Carbide Ceramics for Extreme EnvironmentsF. Wang¹; X. Yan¹; Y. Lu¹; B. Cui^{*1}

1. University of Nebraska-Lincoln, USA

11:50 AM**(ICACC-526-2022) Towards Superhard Binderless Nanocrystalline Tungsten Carbide**K. Anderson*; J. Wollmershauser¹; H. Ryou¹; E. Gorzkowski¹; B. Feigelson¹

1. U.S. Naval Research Laboratory, USA

12:10 PM**(ICACC-527-2022) Synthesis, densification, microstructure, and mechanical properties of superhard (Ti,Cr)B₂ ceramics**L. Feng*; W. Fahrenholtz²; L. Silvestroni³

1. Missouri University of Science & Technology, Materials Science and Engineering, USA
2. Missouri University of Science & Technology, Dept. of Materials Science and Engineering, USA
3. CNR, ISTE, Italy

FS1: Bio-inspired, Green Processing, and Related Technologies of Advanced Materials**Advances in Densification Technologies for Green Processing of Ceramics**

Room: Coquina Salon G

Session Chairs: Katherine Faber, California Institute of Technology; Manoj Mahapatra, University of Alabama at Birmingham; Henry Colorado L., Universidad de Antioquia

8:50 AM**(ICACC-528-2022) Bioinspired microstructured ceramics and composites: texturing methods, ultra-fast sintering, and life cycle assessment (Invited)**H. Le Ferrand*¹

1. Nanyang Technological University, Singapore

9:20 AM**(ICACC-529-2022) In situ dilatometry study on the densification kinetics of zinc oxide by hydro-solvothermal sintering**L. Villatte*; M. Rua-Taborda¹; A. Ndayishimiye²; A. Largeteau¹; G. Goglio³; C. Elissalde⁴; S. Bordère⁴

1. ICMCB-CNRS, France
2. Pennsylvania State University, USA
3. University Bordeaux, France
4. I2M - Dpt TREFLE, France

9:40 AM**(ICACC-530-2022) Chemical pathways in Cold Sintering**A. Ndayishimiye*; C. Randall²

1. Pennsylvania State University, USA
2. Penn State University, Materials Science and Engineering, USA

10:00 AM**Break****Green Processing of Functional Materials and Environmental Sustainability**

Room: Coquina Salon G

Session Chairs: Steven Naleway, University of Utah; Diletta Giuntini, Eindhoven University of Technology

10:20 AM**(ICACC-531-2022) Development of a Bioinspired Tubular PEM Fuel Cell (Invited)**J. Jankovic*¹

1. University of Connecticut, USA

10:50 AM**(ICACC-532-2022) Arapaima gigas scales: a composite material**H. A. Colorado L.*¹; S. Neves²

1. Universidad de Antioquia, Colombia
2. Instituto Militar de Engenharia - IME, Brazil

11:10 AM**(ICACC-533-2022) On the Design of Novel Biomass based Environmentally Friendly Binders**M. Fuka*; M. Dey¹; S. Javaid¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

11:30 AM**(ICACC-534-2022) In-vitro biodegradation of precursor phases and stable electrodeposited calcium phosphate compounds**M. Mahapatra*¹

1. University of Alabama at Birmingham, USA

Advances in Bio-inspired Ceramic Processing and Related Applications

Room: Coquina Salon G

1:30 PM**(ICACC-535-2022) Ceramic Membranes for Pathogen Capture and Bio-processing (Invited)**K. Faber*; O. Bateman¹; N. Arai²; L. Quinn³; J. Kornfield¹; M. Diallo¹

1. California Institute of Technology, USA
2. California Institute of Technology, Materials science, USA
3. California Institute of Technology, USA

2:00 PM**(ICACC-536-2022) Extrinsic control of advanced manufacturing techniques for bioinspired materials**S. E. Naleway*; D. Porter¹; J. Fernquist¹; T. Yin¹; M. Schmitz¹; E. Hotz¹; J. Alexander¹; M. Mroz¹

1. University of Utah, Department of Mechanical Engineering, USA

2:20 PM**(ICACC-537-2022) Recombinant Melanin as a Template for High-Temperature Materials**M. Parvulescu¹; C. Clarkson¹; K. Martin¹; C. Hung¹; M. B. Dickerson*¹

1. Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

2:40 PM**(ICACC-538-2022) Self-assembled supercrystalline nanocomposites with tailored functional and mechanical properties**D. Giuntini*; B. Domenech²; B. Bor²; A. Plunkett²; G. Schneider²

1. Eindhoven University of Technology, Netherlands
2. Hamburg University of Technology, Germany

3:00 PM**Break****FS3: Molecular-level Processing and Chemical Engineering of Functional Materials****Environmental Applications**

Room: Ponce de Leon

Session Chair: Martin Freiss, DLR - German Aerospace Center

8:30 AM**(ICACC-539-2022) Multiple thermal resistance induced low thermal conductivity in porous SiC ceramics with hierarchical porosity (Invited)**Y. Kim*; E. Kang¹

1. University of Seoul, Dept. of Materials Science & Engineering, Republic of Korea

9:00 AM**(ICACC-540-2022) Novel hydrogen chemisorption properties of polymer-derived amorphous SiAlN compounds (Invited)**S. Tada¹; S. Bernard²; R. Riedel³; Y. Iwamoto*¹

1. Nagoya Institute of Technology, Japan
2. CNRS, IRCER, France
3. TU Darmstadt, Materials Science, Germany

9:30 AM**(ICACC-541-2022) Preparation of Organic-Inorganic Hybrid Materials by Surface-Initiated Atom Transfer Radical Polymerization from Inorganic Nanomaterials (Invited)**Y. Sugahara*¹

1. Waseda University, Department of Applied Chemistry and Kagami Memorial Institute for Materials Science and Technology, Japan

10:00 AM**Break****Molecular Precursors III**

Room: Ponce de Leon

Session Chair: Chrystelle Salameh, Institut Européen des Membranes

10:20 AM**(ICACC-542-2022) Fabrication of high quality ceramic powders with controlled size, size distribution and shape (Invited)**S. Lee*¹; Y. Park¹; I. Song²

1. Korea Institute of Materials Science, Republic of Korea
2. Korea Institute of Materials Science, Republic of Korea

10:50 AM**(ICACC-543-2022) Y-containing SiAlONs based on Pre-ceramic Polymers Applied for EBC-Coatings of SiC/SiC (Invited)**M. Freiss*¹

1. DLR - German Aerospace Center, Institute of Structures and Design, Germany

11:20 AM**(ICACC-544-2022) Vapor-phase growth of carbon- and oxygen-contained boron nitride films by chemical vapor deposition**H. Katsui*¹; H. Katsuyoshi²; M. Hotta³

1. National Institute of Advanced Industrial Science and Technology (AIST), Multi-Material Research Institute, Japan
2. Institute of Materials and System for Sustainability, Nagoya University, Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:40 AM**(ICACC-545-2022) Synthesis and Characterizations of Rare Earth Doped BaTiO₃ Nano-Particles by Sol-Gel-Hydrothermal Reaction**S. Lee*¹; S. Oh¹; J. Oh²; D. Kim¹

1. Korea Advanced Institute of Science and Engineering (KAIST), Dept. of Mater Sci & Eng, Republic of Korea
2. Materials Development Group, Corporate R&D Institute, Samsung Electro-Mechanics, Republic of Korea

Molecular Precursors IV

Room: Ponce de Leon

Session Chair: Sanjay Mathur, University of Cologne

1:30 PM**(ICACC-546-2022) New Insights into the Molecular Design and Properties of 0D-Nanocarbon-Based Ceramic Composites (Invited)**G. Mera*¹

1. TU Darmstadt, Materials Science, Germany

2:00 PM**(ICACC-547-2022) In-situ monitoring of the micropore evolution during the pyrolytic conversion of preceramic polymers (Invited)**T. Konegger*¹; C. Drechsel¹; M. Stöger-Pollach²; H. Peterlik²

1. TU Wien - Vienna University of Technology, Institute of Chemical Technologies and Analytics, Austria
2. University of Vienna, Faculty of Physics, Austria
3. TU Wien, University Service Center for Transmission Electron Microscopy (USTEM), Austria

2:30 PM**(ICACC-548-2022) Reactions of Metal Chlorides with Hexamethyldisilazane. Novel Precursors to Metal Nitrides (Invited)**R. M. Laine*¹; S. Indris²

1. University of Michigan, Materials Science and Engineering, USA
2. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

3:00 PM**Break****Energy Applications II**

Room: Ponce de Leon

3:20 PM**(ICACC-549-2022) In-situ modification of silicon carbonitride-based ceramics by transition metals as highly efficient electrocatalysts for oxygen evolution reactions (Invited)**R. M. Ferreira¹; R. K. Nishihara¹; N. Christophe³; R. Machado²; A. Habrioux³; S. Celerier³; S. Bernard*³

1. CNRS, IRCER, France
2. Federal University of Santa Catarina, Chemical Engineering, Brazil
3. Institut de Chimie des Milieux et Matériaux de Poitiers IC2MP UMR7285, France

3:50 PM**(ICACC-550-2022) SiC-based nanocomposites: Molecular-level synthesis, microstructural evolution and advanced functional properties (Invited)**Z. Yu*¹

1. Xiamen University, College of Materials, China

4:20 PM**(ICACC-551-2022) An electrically conductive SiBCN film prepared via polymer-derived ceramic and chemical vapor deposition methods (Invited)**X. Luan*¹; R. Riedel²; S. Gu¹

1. Northwestern Polytechnical University, China
2. TU Darmstadt, Materials Science, Germany

FS5: Current Challenges in Microstructural Evolution: From Fundamentals to Engineering Applications**Advanced Sintering Methods**

Room: Coquina Salon F

Session Chairs: Wolfgang Rheinheimer, Jülich Research Center; John Blendell, Purdue University

1:30 PM**(ICACC-552-2022) From Flash Sintering to Ultrafast Sintering without an Electric Current and Electrochemically Controlled Microstructural Evolution (Invited)**J. Luo*¹

1. University of California, San Diego, USA

2:00 PM**(ICACC-553-2022) Effect of Pressure on the Electrical Resistance Flash Sintering of Tungsten Carbide (Invited)**V. M. Sglavo*¹; I. Mazo¹

1. University of Trento, Italy

2:30 PM**(ICACC-554-2022) Machine learning model and experimental observations of microstructure evolution during ultrafast laser sintering of alumina (Invited)**X. Geng¹; J. Tang²; D. Li³; J. Tong¹; H. Xiao²; F. Peng¹; R. Bordia*¹

1. Clemson University, Materials Science and Engineering, USA
2. Clemson University, Electrical and Computer Engineering, USA
3. Advanced Manufacturing LLC, USA

3:00 PM**Break**

3:20 PM**(ICACC-555-2022) Indirect investigations of the role of interfaces in ultra-rapid densification (Invited)**R. I. Todd*; Y. Kubota¹; Z. Guo¹; J. Singh¹

1. University of Oxford, Department of Materials, United Kingdom

3:50 PM**(ICACC-556-2022) Towards new interfacial transport mechanism-informed sintering models (Invited)**S. J. Dillon*¹

1. University of California, Irvine, USA

4:20 PM**(ICACC-557-2022) On the role of plasticity in high heating rate sintering: Does flash sintering involve plastic flow?**W. Rheinheimer*; L. Porz²; M. Scherer²; X. Phuath²; H. Wang⁴

1. Jülich Research Center, Institute of Energy and Climate Research - Materials Synthesis and Processing, Germany
2. Purdue University, School of Materials Engineering, USA
3. TU Darmstadt, Germany
4. Purdue University, School of Materials Engineering, USA

4:40 PM**(ICACC-558-2022) Field assisted grain growth: How defects, AC and DC electric fields and the atmosphere influence the microstructure evolution in SrTiO₃**J. Preusker*; W. Rheinheimer²; M. J. Hoffmann¹

1. Karlsruhe Institute of Technology, Institute for Applied Materials Ceramic Materials and Technologies, Germany
2. Jülich Research Center, Institute of Energy and Climate Research - Materials Synthesis and Processing, Germany

5:00 PM**(ICACC-559-2022) Solute Adsorption and Grain Boundary Mobility in Alumina (Invited)**L. Cohen¹; Y. Shalabi¹; N. Fabri¹; R. Moshe¹; P. Ghosh¹; R. Marder¹; W. D. Kaplan*¹

1. Technion - Israel Institute of Technology, Dept. of Materials Science and Engineering, Israel

Poster Session B

Room: Ocean Center Arena

5:30 PM**(ICACC-P032-2022) Low-cost residual strength evaluation for a composite cylinder after impact loading**S. Kobayashi*; T. Osada¹

1. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P033-2022) Effect of molding temperature on the Interlaminar tensile strength for curved CFRTPS. Kobayashi*; T. Osada¹

1. Tokyo Metropolitan University, Mechanical Engineering, Japan

(ICACC-P034-2022) Improvement of Mechanical Properties of Adhesively Bonded Joints Using MetamaterialsS. Oshima*; T. Ogasawara²; K. Tan³

1. Tokyo Metropolitan University, Department of Aeronautics and Astronautics, Japan
2. Tokyo University of Agriculture and Technology, Japan
3. The University of Akron, Department of Mechanical Engineering, USA

(ICACC-P035-2022) Interlaminar reinforcement with carbon fiber arrangement for 3D printingJ. Kajimoto*; R. Matsuzaki²; J. KOYANAGI³; A. Fujii⁴

1. Tokyo University of Science, Japan
2. Tokyo University of Science, Japan
3. Tokyo University of Science, Department of Materials Science and Technology, Japan
4. Tokyo University of Science, Japan

(ICACC-P036-2022) Effect of resonant frequency of AE sensors on evaluation of AE signals in CFRPT. Shiraishi¹; K. Kageyama¹; T. Sakai*¹

1. Saitama University, Japan

(ICACC-P037-2022) Effect of atmospheric pressure plasma treatment on mechanical properties and impregnation of plain weave carbon fiber reinforced polypropyleneM. Sakaguchi*¹

1. Salesian Polytechnic, Mechanical and Electronic Engineering, Japan

(ICACC-P038-2022) Development of Solid Oxide Electrolysis Electrodes and Their Evaluation in Electrochemical Cells and StacksA. Wallace*; E. Dogdibegovic²; D. Kopechek¹; J. Funk¹; P. Harasyn²; J. Garzanich¹; G. Arkenberg¹; S. Swartz¹

1. Nexxeris, LLC, Fuel cells business unit, USA
2. Nexxeris, USA

(ICACC-P039-2022) Ionic and electronic transport in zircon-type PrVO₄ based ceramicsR. G. Pinto*; B. I. Arias Serrano¹; A. Yaremchenko¹

1. University of Aveiro, Materials and Ceramic Engineering, Portugal
2. Leibniz Institute for Plasma Science and Technology, Germany

(ICACC-P040-2022) Synthesis and characterization of porous diopside bio-ceramic scaffold using rice husk as a space holder for tissue engineering application.M. K. Yadav*; V. Pandey²; K. Mohanta¹; V. K. Singh²

1. Indian Institute of Technology(BHU), Department of Ceramic Engineering, India
2. Indian Institute of Technology(BHU), DEPARTMENT OF CERAMIC ENGINEERING, India

(ICACC-P041-2022) Characterization and Environmental-friendly preparation of Calcium-SilicatesM. H. Kaou*; C. Balazsi²; K. Balazsi²

1. Óbuda University, Doctoral School on Materials Sciences and Technologies, Hungary
2. Institute of Technical Physics and Materials Science, Centre for Energy Research, ELKH, Hungary

(ICACC-P042-2022) Water-soluble ceramic 3D molds for composite implants formationD. Golubchikov*; P. Evdokimov¹; D. Zuev²; V. Putlyaev¹

1. Lomonosov Moscow State University, Chemistry Department/Materials Science Department, Russian Federation
2. Lomonosov Moscow State University, Materials Science Department, Russian Federation

(ICACC-P043-2022) Effect of the pore size on mechanical properties in macroporous bioresorbable ceramics based on tricalcium phosphateA. Kiseleva*; P. Evdokimov¹; V. Putlyaev¹

1. Lomonosov Moscow State University, Chemistry Department/Materials Science Department, Russian Federation
2. Lomonosov Moscow State University, Materials Science Department, Russian Federation
3. Lomonosov Moscow State University/Kurnakov Institute of General and Inorganic Chemistry, Chemistry Department/Materials Science Department, Russian Federation

(ICACC-P044-2022) Design and Development of Hydroxyapatite based Scaffolds from BioplasticsE. Eades¹; M. Geigle*; S. Javaid¹; Y. Ji¹; S. Gupta¹

1. University of North Dakota, Mechanical Engineering, USA

(ICACC-P045-2022) ZnO films towards gas sensingC. R. Foschini*; H. Baumgart²; E. Longo³; A. Z. Simões⁴

1. Universidade Estadual Paulista - UNESP, Department of Mechanical Engineering, Brazil
2. Old Dominion University, Department of Electrical and Computer Engineering, USA
3. Universidade Federal de São Carlos - UFSCar, Department of Chemistry, Brazil
4. Universidade Estadual Paulista - UNESP, School of Engineering of Guaratinguetá, Brazil

(ICACC-P046-2022) Thermoluminescence properties of Sr₂B₂O₇:Eu ceramics for neutron dosimetryH. Komiya*; H. Kawamoto¹; Y. Fujimoto¹; M. Koshimizu¹; G. Okada²; Y. Koba³; G. Wakabayashi¹; M. Nogami²; K. Hitomi²; K. Watanabe²; T. Yanagida²; K. Asai¹

1. Tohoku University, Department of Applied Chemistry, Japan
2. Kanazawa Institute of Technology, Japan
3. The National Institutes of Quantum and Radiological Science and Technology, Japan
4. Kindai University Atomic Energy Research Institute, Japan
5. Department of Quantum Science and Energy Engineering, Tohoku University, Japan
6. Department of Quantum Physics and Engineering, Kyushu University, Japan
7. Nara Institute of Science and Technology, Japan

(ICACC-P047-2022) Near-infrared scintillation properties of Nd-doped Bi₄Ge₃O₁₂ single crystalsK. Okazaki*; D. Onoda¹; H. Fukushima¹; D. Nakauchi¹; T. Kato¹; N. Kawaguchi¹; T. Yanagida²

1. Nara Institute of Science and Technology, Graduate School of Materials Science, Japan
2. Nara Institute of Science and Technology, Japan

(ICACC-P048-2022) Scintillation properties of $(\text{C}_6\text{H}_5\text{C}_2\text{H}_4\text{NH}_3)_2\text{PbI}_4$ single crystal: organic-inorganic perovskite-type compoundK. Okazaki^{*}; D. Onoda¹; D. Nakauchi¹; N. Kawano²; H. Fukushima¹; T. Kato¹; N. Kawaguchi¹; T. Yanagida¹

1. Nara Institute of Science and Technology, Graduate School of Materials Science, Japan
2. Akita university, Graduate School of Engineering Science, Japan

(ICACC-P049-2022) Scintillation and dosimetric properties of Ce-doped Mg_2SiO_4 single crystalsK. Ichiba^{*}; Y. Takebuchi¹; H. Kimura²; T. Kato¹; D. Nakauchi¹; N. Kawaguchi³; T. Yanagida⁴

1. Nara Institute of Science and Technology, Division of Materials Science, Japan
2. Nara Institute of Science and Technology, Japan
3. Nara Institute of Science and Technology, Graduate School of Materials Science, Japan
4. Nara Institute of Science and Technology, Japan

(ICACC-P050-2022) Characterization of Ce-doped $25\text{Li}_2\text{O}-10\text{MgO}-65\text{SiO}_2$ glasses for dosimeter applicationsK. Ichiba^{*}; Y. Takebuchi¹; H. Kimura¹; D. Shiratori¹; T. Kato¹; D. Nakauchi¹; N. Kawaguchi¹; T. Yanagida²

1. Nara Institute of Science and Technology, Division of Materials Science, Japan
2. Nara Institute of Science and Technology, Japan

(ICACC-P051-2022) Optical and Scintillation Properties of ZnO Translucent CeramicsT. Kunikata^{*}; T. Kato¹; D. Shiratori¹; D. Nakauchi¹; N. Kawaguchi¹; T. Yanagida¹

1. Nara Institute of Science and Technology, Japan

(ICACC-P052-2022) Scintillation Properties of Li-doped ZnO Translucent CeramicsT. Kunikata^{*}; T. Kato¹; D. Shiratori¹; D. Nakauchi¹; N. Kawaguchi¹; T. Yanagida¹

1. Nara Institute of Science and Technology, Japan

(ICACC-P053-2022) TCR control of flexible RuO₂ thin film prepared by using photo-reaction of hybrid solution process (PRHS)Y. Uzawa^{*}; T. Nakajima²; T. Tsuchiya¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Advanced Manufacturing Research Institute, Japan

(ICACC-P054-2022) Optimization of Particle Size Distribution and Crystallinity for High-Performance Undoped KNN Piezoelectric CeramicsL. M. Vaschalde^{*}; E. G. Villora²; K. Shimamura³

1. National Institute for Materials Science (NIMS), Japan
2. National Institute for Materials Science (NIMS), Japan
3. National Institute for Materials Science, Japan

(ICACC-P055-2022) Additive manufacturing of CMCs by DIW of preceramic polymersF. Da Rin Betta¹; S. Ferris²; B. A. Baker³; C. J. Footer²; G. Franchin³; P. Colombo^{*1}

1. University of Padova, Industrial engineering, Italy
2. QinetiQ, United Kingdom
3. University of Padova, Industrial Engineering, Italy

(ICACC-P056-2022) Analysis of Degree of Polymerization in Photocurable Ceramic Suspensions through Raman SpectroscopyF. F. Maniaci^{*}; C. Hwang²; M. K. Alazzawi¹; R. A. Haber¹

1. Rutgers University, Department of Materials Science and Engineering, USA
2. Rutgers University, Dept. of Materials Science and Engineering, USA
3. Rutgers University, Materials Science and Engineering, USA

(ICACC-P057-2022) Development of 3D Printing System with Extrusion Nozzles for Ceramics and Metal CompoundsK. Yamada^{*}; F. Tsumori¹

1. Kyushu University, Department of Aeronautics and Astronautics, Japan

(ICACC-P058-2022) Fabrication of Fiber-Reinforced Polymer Ceramic Composites by Wet ElectrospinningY. Xu^{*}; J. Ndayikengurukiye²; A. Akono¹; P. Guo²

1. Northwestern University, Civil and Environmental Engineering, USA
2. Northwestern University, Mechanical Engineering, USA

(ICACC-P059-2022) Thixotropic, Shear Thinning and Bingham Fluid Properties of Geopolymer PastesA. S. Brandvold^{*}; W. M. Kriven²

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA

(ICACC-P060-2022) Hydrothermal synthesis of hexagonal kalsilite using kaolin clay as aluminosilicate precursorE. F. Yusslee^{*}; N. Dahon¹; M. Abdul Rajak¹; S. E. Arshad¹

1. Universiti Malaysia Sabah, Malaysia

(ICACC-P061-2022) Study of the addition of recycled concrete on the physical-mechanical properties of permeable concrete in hardened stateE. Murillo-Mosquera^{*2}; Y. P. Arias²; H. A. Colorado L.¹

1. Universidad de Antioquia, Colombia
2. Universidad Nacional de Colombia, Colombia

(ICACC-P062-2022) Evaluation of industrial byproducts as pozzolans for concreteG. Agudelo¹; H. A. Colorado L.^{*1}

1. Universidad de Antioquia, Colombia

(ICACC-P063-2022) Parametric Study of Metakaolin-based Geopolymer MortarO. D. Huang¹; J. Elder^{*1}; N. Lies¹; G. Arce²; M. Hassan²; M. Radovic¹

1. Texas A&M University, Materials Science & Engineering, USA
2. Louisiana State University, Bert S. Turner Department of Construction Management, USA

(ICACC-P064-2022) Freeze Thaw Resistance of Sodium and Potassium Alkali Geopolymer CompositesA. Kozych^{*1}; G. K. Al-Chaar²; W. M. Kriven²

1. UIUC, MatSE, USA
2. University of Illinois at Urbana-Champaign, USA
3. CERL, USA

(ICACC-P065-2022) Mechanical Properties of waste glass-reinforced geopolymer compositesJ. Bachkaniwala^{*1}; W. M. Kriven²

1. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
2. University of Illinois at Urbana-Champaign, USA

(ICACC-P066-2022) Bundle-Type Columnar Cuprous oxide Photoabsorbers and Their Enhanced Photoelectrochemical EfficiencyH. Cho^{*1}

1. Sungkyunkwan University, Republic of Korea

Thursday, January 27, 2022

Emerging Technologies Symposium**Materials for Sustainable Energy and Environmental Systems IV**

Room: Coquina Salon D

Session Chairs: Sanjay Mathur, University of Cologne; Kiyoshi Shimamura, National Institute for Materials Science

8:30 AM**(ICACC-560-2022) Efficient Photon-harvesting Technologies for Water Splitting Reactions (Invited)**S. Mathur^{*1}

1. University of Cologne, Institute of Inorganic Chemistry, Germany

9:00 AM**(ICACC-561-2022) Bioprocess-inspired Strategy for Synthesis and Fabrication of New Materials (Invited)**Z. Fu^{*1}

1. Wuhan University of Technology, State Key Lab of Advanced Technology for Materials Synthesis and Processing, China

9:30 AM**(ICACC-562-2022) Novel single crystals for electro-optical applications (Invited)**K. Shimamura*¹; E. G. Villora²

1. National Institute for Materials Science, Japan
2. National Institute for Materials Science (NIMS), Japan

10:00 AM**Break****Emergent Materials and Technologies VII**

Room: Coquina Salon D

Session Chairs: Sanjay Mathur, University of Cologne; Kiyoshi Shimamura, National Institute for Materials Science

10:20 AM**(ICACC-563-2022) B₄C-TiB₂-SiC-BN composite fabricated by reactive hot pressing from TiCN-B-Si mixture (Invited)**W. Wang*¹

1. Wuhan University of Technology, China

10:50 AM**(ICACC-564-2022) Microstructure Control of Ceramics by colloidal processing and external fields (Invited)**T. S. Suzuki*¹

1. National Institute for Materials Science, Ceramics Processing Group, Japan

11:20 AM**(ICACC-565-2022) Synthesis of β -MoO₃ nanosized powder by pulsed wire discharge (Invited)**H. Suematsu*¹; N. M. Chu¹; H. D. Nguyen¹; T. Do¹; T. Nakayama¹; K. Niihara¹

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

Emergent Materials and Technologies VIII

Room: Coquina Salon D

1:30 PM**(ICACC-566-2022) Recent trends of advanced ceramics industry and JFCA activities (Invited)**H. Takemura*¹

1. Japan Fine Ceramics Association, Japan

2:00 PM**(ICACC-567-2022) Fabrication of Ceramic Nanocomposites with Renewable Self-Crack-Healing Ability (Invited)**T. Nakayama*¹; S. T. Nguyen²; K. Niihara¹

1. Nagaoka University of Technology, Japan
2. National Institute of Technology Koshiro College, Department of Creative Engineering, Japan

2:30 PM**Closing Remarks****S3: 19th International Symposium on Solid Oxide Cells (SOC): Materials, Science and Technology****Novel Processing**

Room: Grand Ballroom Salons 1/2

8:30 AM**(ICACC-568-2022) Novel Design and Processing of Solid Oxide Cells (Invited)**N. Q. Minh*¹

1. University of California, San Diego, Center for Energy Research, USA

9:00 AM**(ICACC-569-2022) Development History of Solid Oxide Cells: Synergy and Integration**A. Lipilin*¹; S. Shkerin²; S. Konrad³; A. Solov'ev⁴; A. Spirin¹; A. Nikonov¹; S. Krasil'nikov⁵; V. Lipilina⁵

1. Institute of Electrophysics UB RAS, Russian Federation
2. Institute of High Temperature Electrochemistry of the Ural Branch of Russian Academy of Science (IHTE UB RAS), Russian Federation
3. EN+ Group, Russian Federation
4. Institute of High Current Electronics SB RAS, Russian Federation
5. SOFC Technologies LLC, Russian Federation

9:20 AM**(ICACC-570-2022) Analysis of single-layer ceramic fuel cells fabricated through a hybrid of 3D printing and laser scribing**M. Asghar*¹; P. Lund¹

1. Aalto University, Applied Physics, Finland

9:40 AM**(ICACC-571-2022) ReScale: Increasing the size of solid oxide cells**A. L. Smitshuysen*²; S. H. Jensen¹; B. Sudireddy²; H. L. Frandsen²; K. Klemens Hansen³

1. Aalborg University, Energy, Denmark
2. Technical University of Denmark, Department of Energy Conversion and Storage, Denmark
3. Technical University of Denmark, Department of Chemistry, Denmark

10:00 AM**Break****10:20 AM****(ICACC-572-2022) Strategies for Advanced Manufacturing for High performed LSGM based SOCs at KICET (Invited)**T. Shin*¹

1. Korea Institute of Ceramic Engineering & Technology, Energy Materials Center, Republic of Korea

Cell Design & Test I

Room: Grand Ballroom Salons 1/2

10:50 AM**(ICACC-573-2022) Metal supported fuel and electrolysis cells (Invited)**A. Hagen*¹; R. Caldogno¹; F. Capotondo¹; X. Sun¹; B. Sudireddy¹; J. O. Christensen¹

1. Technical University of Denmark, DTU Energy, Denmark

11:20 AM**(ICACC-574-2022) Electrochemical Performance of Metal-supported Solid Oxide Fuel Cell under SOFC and SOEC modes**C. Chang*¹

1. Institute of Nuclear Energy Research, Physics Division, Taiwan

Cell Design & Test II

Room: Grand Ballroom Salons 1/2

1:30 PM**(ICACC-575-2022) Metal-Supported Solid Oxide Electrolysis Cells: Challenges and Opportunities**M. Tucker*¹; M. Welander¹; F. Shen¹

1. Lawrence Berkeley National Laboratory, USA

1:50 PM**(ICACC-576-2022) Characterization of solid oxide electrolysis cells with a modified microstructure of cathode support manufactured by high-pressure injection molding**A. Niemczyk*¹; S. Jagielski¹; R. Kluczewski²; J. Kupecki¹; M. Kosiorek¹

1. Institute of Power Engineering, Department of High Temperature Electrochemical Processes, Poland
2. Institute of Power Engineering, Ceramic Department CEREL, Poland

2:10 PM**(ICACC-577-2022) Latest Trends in Metal-Based Solid Oxide Fuel Cells (Invited)**M. Abdul Jabbar*¹

1. Nissan, USA

2:40 PM

(ICACC-578-2022) Performance Benchmark of Solid Oxide Cells and the Influence of Material Development, Design, and Processing

C. Vorkötter^{*2}; D. Udomsilp²; O. Guillon¹; N. H. Menzler²

1. Forschungszentrum Juelich, IEK-1, Germany
2. Forschungszentrum Jülich GmbH, IEK-1, Germany

3:00 PM

(ICACC-579-2022) Solid Oxide Cells: Accelerated Measurements and Durability of Oxygen Electrodes (Invited)

X. Zhou^{*1}

1. University of Louisiana at Lafayette, Chemical Engineering, USA

S4: Armor Ceramics - Challenges and New Developments

Processing, Structure, Properties I

Room: Coquina Salon G

Session Chair: Anthony DiGiovanni, US Army Research Laboratory

8:30 AM

(ICACC-580-2022) Enhanced hardness from modified stoichiometry in nanocrystalline zinc aluminate

L. E. Sotelo Martin^{*1}; R. Castro²

1. University of California, Davis, Materials Science and Engineering, USA
2. University of California, Davis, Material Science & Engineering, USA

8:50 AM

(ICACC-581-2022) Characteristics of ZrB₂-SiC, ZrB₂-SiC-ZrC and TaB₂-SiC composites manufactured under high (4 GPa) and moderate (30 MPa) pressures

T. Prikhna^{*1}; A. Lokatkina¹; R. A. Haber²; V. Moshchil¹; T. Karpets¹; P. Barvitskyi¹; C. Hwang²

1. Institute for Superhard Materials of the National Academy of Sciences of Ukraine, Ukraine
2. The State University of New Jersey, Department of Materials Science and Engineering, Rutgers, United States Minor Outlying Islands

9:10 AM

(ICACC-582-2022) Boron Carbide-Silicon Carbide nanocomposites for next generation armour

H. Payne^{*1}; L. J. Vandeperre²; F. Giuliani³

1. Imperial College, Materials, United Kingdom
2. Imperial College London, Materials, United Kingdom
3. Imperial College London, Materials, United Kingdom

Processing, Structure, Properties II - Diamond-Ceramic Composites

Room: Coquina Salon G

Session Chair: Christopher Marvel, Lehigh University

9:30 AM

(ICACC-583-2022) Microstructure and properties of silicon infiltrated diamond-SiC composites with high diamond contents (Invited)

B. Matthey^{*1}; S. Kunze¹; M. Herrmann¹

1. Fraunhofer IKTS, Sintering and characterization, Germany

10:00 AM

Break

10:20 AM

(ICACC-584-2022) Reaction Synthesis of Powder-Based Diamond-Silicon Carbide Composites

A. A. DiGiovanni^{*1}; S. V. Raju¹; J. Ligda²; J. Rodriguez²; T. W. Scharf²

1. US Army Research Laboratory, Ceramic and Transparent Materials, USA
2. US Army Research Laboratory, USA
3. University of North Texas, Materials Science and Engineering, USA

10:40 AM

(ICACC-585-2022) Observations and Characterization of Reactions in a Hot-Pressed Diamond Particulate Reinforced Ceramic Composite

J. LaSalvia^{*1}; S. D. Walck¹; C. Garcia²; T. W. Scharf²; A. A. DiGiovanni¹

1. DEVCOM Army Research Laboratory, USA
2. University of North Texas, Department of Materials Science and Engineering, USA

11:00 AM

(ICACC-586-2022) Densification and Microstructures of Hot-Pressed Al₂O₃ - Diamond Particulate Reinforced Ceramic Composites

T. W. Moore^{*1}; K. D. Behler²; A. A. DiGiovanni³; J. LaSalvia⁴

1. DEVCOM-Army Research Lab, SURVICE Engineering, USA
2. DEVCOM-Army Research Lab, Ceramics and Transparent Materials Branch, USA
3. DEVCOM-Army Research Lab, Ceramic and Transparent Materials Branch, USA
4. DEVCOM-Army Research Lab, Ceramics and Transparent Materials Branch, USA

Dynamic Impact Experiments, Modeling, and Simulation

Room: Coquina Salon G

Session Chair: Jerry LaSalvia, U.S. Army Research Laboratory

11:20 AM

(ICACC-587-2022) Laser-Driven Projectiles for High-Throughput Ballistic Characterization of Ceramic Protection Materials

D. D. Mallick^{*1B}

1. US Army Research Laboratory, USA

11:40 AM

(ICACC-588-2022) Machine-learning-informed finite element modelling of high-velocity impact on alumina ceramic tiles

A. Yang^{*1}; J. D. Hogan²; D. Romanyk²

1. University of Alberta, Mechanical Engineering, Canada
2. University of Alberta, Edmonton, Mechanical Engineering, Canada

Army Research Laboratory's Materials in Extreme Dynamic Environments (MEDE) Program Capstone – A Ten Year Quest for a Materials-by-Design Capability

Room: Coquina Salon G

Session Chairs: Jerry LaSalvia, U.S. Army Research Laboratory; Richard Haber

1:30 PM

(ICACC-589-2022) Addressing Amorphization and Transgranular Fracture of Boron Carbide through Atomic Doping and Microparticle Reinforcing (Invited)

C. Hwang^{*1}; J. Du¹; Q. Yang²; A. M. Celik³; K. Christian¹; Q. An⁴; M. C. Schaefer⁵; K. Y. Xie⁶; J. LaSalvia⁷; K. J. Hemker⁸; W. A. Goddard⁹; R. A. Haber¹

1. Rutgers University, Dept. of Materials Science and Engineering, USA
2. Lawrence Livermore National Laboratory, Materials Science Division, USA
3. Gaziantep University, Department of Metallurgical and Materials Engineering, Turkey
4. University of Nevada, Department of Chemical and Materials Engineering, USA
5. Free Form Fibers, USA
6. Texas A&M University, Materials Science and Engineering, USA
7. U.S. Army Research Laboratory, DEVCOM, USA
8. Johns Hopkins University, Department of Mechanical Engineering, USA
9. California Institute of Technology, Materials and Process Simulation Center, USA

2:00 PM

(ICACC-590-2022) New insights into the quasi-plasticity mechanisms in boron carbide revealed by transmission electron microscopy (Invited)

M. He^{*1}; A. Zare¹; N. Mitra¹; M. Straker²; Q. Yang³; R. A. Haber²; M. Spencer²; K. Ramesh¹; K. J. Hemker¹

1. Johns Hopkins University, Mechanical Engineering, USA
2. Morgan State University, Electrical and Computer Engineering, USA
3. Rutgers University, Materials Science and Engineering, USA

2:20 PM**(ICACC-591-2022) Silicon doping of grain boundary of boron carbide (B₄C) for improved amorphization resistance (Invited)**

J. Du¹; Q. Yang²; C. Hwang³; M. He⁴; L. Ma⁵; S. DiPietro⁶; L. C. Klein¹; K. Christian¹; K. Y. Xie⁴; K. J. Hemker²; R. Haber¹

1. Rutgers University, USA
2. Rutgers University, Materials Science and Engineering, USA
3. Rutgers University, Dept. of Materials Science and Engineering, USA
4. Texas A&M University, Materials Science and Engineering, USA
5. Johns Hopkins University, Mechanical Engineering, USA
6. Exothermics Inc., USA

2:40 PM**(ICACC-592-2022) Evaluating a Pre-Reaction Method for Sintering Doped Boron Carbide (Invited)**

K. Christian¹; J. Du¹; C. Hwang¹; R. Haber¹

1. Rutgers University, Dept. of Materials Science and Engineering, USA

3:00 PM**Break****3:20 PM****(ICACC-593-2022) Extracting Grain Boundary Thermodynamic Properties in Si-doped B₄C and B₆O (Invited)**

C. J. Marvel¹; K. Behler²; J. LaSalvia²; R. Haber³; M. P. Harmer¹

1. Lehigh University, USA
2. U.S. Army Research Laboratory, DEVCOM, USA
3. Rutgers University, USA

3:50 PM**(ICACC-594-2022) Granular transition and fragment statistics of impacted ceramics (Invited)**

A. Bhattacharjee¹; R. C. Hurley²; L. Graham-Brady²

1. Johns Hopkins University, Civil Engineering, USA
2. JHU/APL, Civil Engineering, USA
3. Johns Hopkins University, Mechanical Engineering, USA

4:20 PM**(ICACC-595-2022) Ductile and Brittle Spall in Monocrystalline Boron Carbide (Invited)**

A. Cheenady¹; A. Awasthi²; G. Subhash³

1. University of Florida, Mechanical and Aerospace Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA
3. University of Florida, Mechanical and Aerospace Engineering, USA

S5: Next-Generation Bioceramics and Biocomposites**Next Generation Bioceramics and Biocomposites I**

Room: Coquina Salon B

Session Chairs: Andraz Kocjan, Jozef Stefan Institute; Min Wang, The University of Hong Kong

8:30 AM**(ICACC-596-2022) Electrospinning and Electrospun Hybrid or Nanocomposite Scaffolds for Regenerating Different Body Tissues (Invited)**

M. Wang¹

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

8:50 AM**(ICACC-597-2022) In Vivo Ageing of Dental Zirconia Ceramics (Invited)**

A. Kocjan¹; J. Cotič²; T. Kosmac³; P. Jevnikar³

1. Jozef Stefan Institute, Slovenia
2. GlaxoSmithKline, United Kingdom
3. Medical Faculty, University of Ljubljana, Slovenia

9:10 AM**(ICACC-598-2022) Better Osteogenesis of Electroconductive HA-CaTiO₃ Composites in a Rabbit Animal Model (Invited)**

P. K. Mallik¹; B. Basu²

1. Indira Gandhi Institute of Technology Sarang, Metallurgical and Materials Engineering, India
2. IISc Bangalore, Materials Research Center, India

9:30 AM**(ICACC-599-2022) Effect of Bioactivation Using Acid or Alkaline Treatment on Mechanical Properties of Zirconia-Based Ceramics**

R. Kojima¹; M. Ijiri¹; T. Osada¹; S. Kobayashi¹

1. Tokyo Metropolitan University, Mechanical Systems Engineering, Japan

9:50 AM**Break****10:10 AM****(ICACC-600-2022) Biocompatibility of geopolymer for bone tissue regenerative engineering**

A. Akono¹; X. Wang²; G. Ameer²

1. Northwestern University, Civil and Environmental Engineering, USA
2. Northwestern University, Biomedical Engineering, USA

10:30 AM**(ICACC-601-2022) Research Technology Transfer and Innovation for Entrepreneurship and Diversity (Invited)**

F. Dziike¹

1. Durban University of Technology, Technology Transfer and Innovation, South Africa

10:50 AM**(ICACC-602-2022) Fabrication of support-less bioceramic structures using support bath system with low-temperature cement reaction**

N. Raja¹; Y. Choi¹; H. Park¹; H. Yun¹

1. Korea Institute of Materials Science, Advanced Biomaterials Research, Republic of Korea

11:10 AM**(ICACC-603-2022) Synthesis and cell compatibility of fibrous TiO₂ microspheres (Invited)**

S. Chen²; A. Osaka¹

1. Okayama University, Faculty of Engineering, Japan
2. Taiyuan University of Technology, College of Biomedical Engineering, China

Next Generation Bioceramics and Biocomposites II

Room: Coquina Salon B

Session Chairs: Masanori Kikuchi, National Institute for Materials Science (NIMS); Akiyoshi Osaka, Okayama University

1:30 PM**(ICACC-604-2022) 3D Printing of Fiber Reinforced and Highly Elastic PLATMC Scaffolds Encapsulated with Growth Factor for Muscle Regeneration**

S. Chen¹; J. Chen¹; M. Wang¹

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

1:50 PM**(ICACC-605-2022) Preparation and in vitro biological properties of Hydroxyapatite/Collagen bone-like nanocomposite coating on Ti (Invited)**

M. Kikuchi¹; T. Uchikoshi²; K. Iwanami-Kadowaki³; M. Uezono³; K. Moriyama³

1. National Institute for Materials Science (NIMS), Bioceramics Group, Japan
2. National Institute for Materials Science, Japan
3. Tokyo Medical and Dental University, Japan

2:10 PM**(ICACC-606-2022) Additive Manufacturing of Oxide and Non-oxide Bioceramics for Personalised Bone Tissue Engineering (Invited)**

P. Evdokimov¹; V. Putlyayev²; I. Scherbakov³; V. Dubrov³; A. Efimenko³; G. Shipunov³; E. Novoseletskaia³; A. Kiseleva⁴; N. Leontiev⁵

1. Lomonosov Moscow State University/Kurnakov Institute of General and Inorganic Chemistry, Chemistry Department/Materials Science Department, Russian Federation
2. Lomonosov Moscow State University, Chemistry Department/Materials Science Department, Russian Federation
3. Lomonosov Moscow State University, Faculty of Fundamental Medicine, Russian Federation
4. Lomonosov Moscow State University, Materials Science Department, Russian Federation
5. Lomonosov Moscow State University, Chemistry Department, Russian Federation

2:30 PM**(ICACC-607-2022) Cold Sintering of Bioglass and Bioglass/
Polymer Composites**J. Andrews*¹; G. Bullock²; C. Miller³; J. Booth³; H. Ren⁵; J. Hanna⁴; N. Kelly⁴; I. M. Reaney²

1. University of Sheffield, Department of Materials Science and Engineering, United Kingdom
2. University of Sheffield, Materials Science and Engineering, United Kingdom
3. University of Sheffield, Department of Clinical Dentistry, United Kingdom
4. University of Warwick, Department of physics, United Kingdom
5. Johnson Matthey, United Kingdom

2:50 PM**Break****3:10 PM****(ICACC-608-2022) Developing a Printable and Shape-morphing
Hydrogel for 4D Printing**J. Lai*¹; M. Wang¹

1. The University of Hong Kong, Department of Mechanical Engineering, Hong Kong

3:30 PM**(ICACC-609-2022) Revisiting strength-aging-translucency
relations in yttria-doped zirconia for dental applications: grain
boundary engineering and nano-sized polycrystalline ceramics.
(Invited)**J. Chevalier*¹; H. Reveron²; L. Gremillard³; v. Garnier²; e. camposilvan⁴; o. Akhlaghi²; e. roitero²; F. Zhang⁵

1. INSA Lyon, Materials Science, France
2. Univ Lyon, MATEIS UMR5510, Insa de Lyon, Ceramics and Composites Group, France
3. INSA, Materials, Engineering and Science, France
4. MATHYM SAS, France
5. KU Leuven, Belgium

3:50 PM**(ICACC-610-2022) Rare Earth Doped Nanoplatfoms: Towards
Light Based Theranostics (Invited)**F. Vetrone*¹

1. Institut National de la Recherche Scientifique, Université du Québec, Centre Énergie, Matériaux et Télécommunications, Canada

4:10 PM**(ICACC-611-2022) Dual Action Nanocarriers with High Efficacy
against Triple-Negative Breast Cancer (Invited)**S. Ilyas*²; A. Szymura¹; S. Sahnoun²; P. Habib³; F. Mottaghay²; S. Mathur¹

1. Institute of Inorganic Chemistry, University of Cologne, Greinstr. 6, 50939, Germany
2. Department of Nuclear Medicine, University Hospital Aachen, RWTH Aachen University, 52074, Germany
3. Department of Nuclear Medicine, University Hospital Aachen, RWTH Aachen University, 52074, Germany
4. Department of Neurology, University Hospital, RWTH Aachen University, 52074, Germany

4:30 PM**(ICACC-612-2022) 3D Printing of Antibacterial and Biomimetic
Ceramic based Hybrid Aerogel Scaffolds for Bone Repair**H. H. Maleki*¹

1. University of Cologne, Institute of Inorganic Chemistry, Germany

**S7: 16th International Symposium on
Functional Nanomaterials and Thin
Films for Sustainable Energy Harvesting,
Environmental, and Health Applications****Nanostructured Materials for Photovoltaic and
Photoelectronic Applications**

Room: Coquina Salon H

Session Chair: Muhammet Toprak, KTH Royal Institute of Technology

8:40 AM**(ICACC-613-2022) Enhancement of Long-Term Stability of
Perovskite Solar Cells with Functional Nanocomposites in Active
Layer and Electron Transport Layer**Y. Hahn*¹

1. Jeonbuk National University, School of Chemical Engineering, Republic of Korea

9:10 AM**(ICACC-614-2022) Development of CdSe photovoltaic thin-films**L. Višić*¹; A. Baftić¹; I. Panzic¹; V. Mandić¹

1. University of Zagreb, Faculty of Chemical Engineering and Technology, Department of Inorganic Chemical Technology and Non-metals, Croatia

9:30 AM**(ICACC-615-2022) Eco-friendly InP/ZnSe Core/shell Quantum Dots
for photoelectronic applications**J. Liu*¹; D. Benetti¹; F. Rosei¹

1. INRS, EMT, Canada

9:50 AM**Break****Nanostructured Materials for Thermoelectric
Applications**

Room: Coquina Salon H

Session Chair: Thomas Fischer, University of Cologne

10:10 AM**(ICACC-616-2022) Rapid and Green Chemical Syntheses of High-
Efficiency Nanostructured Bi₂Te₃ (Invited)**M. S. Toprak*¹

1. KTH Royal Institute of Technology, Dept. of Applied Physics, Sweden

10:40 AM**(ICACC-617-2022) Fast Fabrication Process and Thermoelectric
Enhancement in Bi₂Te₃ Via Boron and Rare Earth Metals Doping
(Invited)**S. Ballikaya*¹

1. Istanbul University, Physics, Turkey

**S11: Advanced Materials and Innovative
Processing Ideas for Production Root
Technologies****Starting Materials: Mining, Particles, Bulk, and
Functional Materials and Precursors**

Room: Grand Ballroom Salon 5

Session Chairs: Sungwook Mhin, Kyonggi University; Kyoung Il Moon, KITECH

8:30 AM**(ICACC-618-2022) Solvothermal synthesis of composition and
morphology controlled inorganic materials (Invited)**C. Ellawala Kankanamge*¹; A. B. Haugen²

1. Technical University of Denmark, Energy conversion and storage, Denmark
2. Technical University of Denmark, Energy conversion and storage, Denmark

9:00 AM**(ICACC-619-2022) Development of Nano-capsuled Thermal
Interface Materials Filler using Multilayer Graphene Coated Silver
Nanoparticles (Invited)**D. Shin¹; S. Choi¹; S. Kim²; C. Yun³; Y. Tan⁴; C. Lee*¹

1. Hanyang University ERICA campus, Department of Materials Engineering, Republic of Korea
2. Seoul National University of Science and Technology, Graduate School of Nano-IT Design Convergence, Republic of Korea
3. Onsem Korea, Republic of Korea
4. ON Semiconductor, Packaging Technology, Malaysia

9:30 AM**(ICACC-620-2022) Effect of Microstructure Control by Two-Step
Spark Plasma Sintering on Optical and Luminescent Properties in
Transparent (Gd, Lu)₃Al₅O₁₂ ceramics**L. Ji Hwoan*¹; B. Kim²; B. Jang³

1. Kyushu University, Interdisciplinary Graduate School, Republic of Korea
2. National Institute for Materials Science, Fine-Grained Refractory Materials Group, Japan
3. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan

9:50 AM**(ICACC-621-2022) Surface Functionalization of Alumina Nanoparticles to Improve Suspensibility for Ceramic 3D Printing Slurry**K. Jang¹; J. Jeon²; C. Ahn³

1. Inha University, School of Materials Science and Engineering, Republic of Korea
2. Hanyang University, Department of Materials Science and Engineering, Republic of Korea
3. Korea Institute of Industrial Technology, Republic of Korea

Coating and Synthesis Processes for Enhanced Mechanical Properties

Room: Grand Ballroom Salon 5

Session Chairs: Chisung Ahn, Korea Institute of Industrial Technology; Sungwook Mhin, Kyonggi University

10:20 AM**(ICACC-622-2022) Advances in Surface Engineering for Ultra-low Friction and Wear (Invited)**A. Erdemir^{*1}

1. Texas A&M University, Department of Mechanical Engineering, USA

10:50 AM**(ICACC-623-2022) New sputtering technology of hard protective coatings based on strongly non-equilibrium processes (Invited)**S. Kos^{*1}; J. Musil²

1. University of West Bohemia, Czechia
2. University of West Bohemia, Department of Physics, Czechia

11:20 AM**(ICACC-624-2022) The effect of SiC addition to ytterbium disilicate on mechanical properties and self-healing**A. Okawa^{*2}; S. T. Nguyen¹; H. Son²; T. Do²; H. Suematsu²; T. Nakayama²

1. National Institute of Technology Koshiro College, Department of Creative Engineering, Japan
2. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

11:40 AM**(ICACC-625-2022) A Study on the Microstructures and Mechanical Properties of Al-Cr-Fe-Ti-N Coatings Deposited Using Alloying Target**K. Moon^{*1}; K. An¹; H. Park¹

1. KITECH, Republic of Korea

Recycling Process and Sustainable Energy Concept

Room: Grand Ballroom Salon 5

Session Chairs: Kyoung Il Moon, KITECH; Chisung Ahn, Korea Institute of Industrial Technology

1:30 PM**(ICACC-626-2022) Resent Status on Recycling Technology of Used Li-ion Batteries using Li Separation Method by Ionic Conductor; LiSMIC (Invited)**T. Hoshino^{*1}

1. National Institutes for Quantum and Radiological Science and Technology (QST), Breeding Functional Materials Development Group, Department of Blanket Systems Research, Rokkasho Fusion Institute, Fusion Energy Directorate, Japan

2:00 PM**(ICACC-627-2022) Two-Steps Process to Develop Y₂Ti₂O₇-based Nanocomposites with Renewable Self-Crack Healing Ability**S. T. Nguyen^{*1}; A. Okawa³; H. Iwasawa³; T. Nakayama³; H. Hashimoto²; T. Sekino²; H. Suematsu²; K. Niihara³

1. National Institute of Technology, Koshiro College, Department of Creative Engineering, Japan
2. Osaka University, The Institute of Scientific and Industrial Research, Japan
3. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

2:20 PM**(ICACC-628-2022) Transition metal based electrocatalysts for water splitting**S. Mhin^{*1}; H. Han²; T. Song³

1. kyonggi university, Advanced Materials Engineering, Republic of Korea
2. Konkuk University, Republic of Korea
3. hanyang university, Republic of Korea

2:40 PM**(ICACC-629-2022) Novel design of the hybrid electrochromic devices as quadruple glazed windows through unique electrolyte chemistry**J. Kim^{*1}; D. Shin¹; X. Diao²; C. Lee¹

1. Hanyang University, Materials Science and Chemical Engineering, Republic of Korea
2. Beihang University, China

3:00 PM**(ICACC-630-2022) MINIATURIZATION OF ALUMINUM HYDROXIDE USING NANOSECOND PULSE IN ELECTROCOAGULATION**K. Suzuki^{*1}; H. Suematsu¹; K. Niihara¹; T. Nakayama¹

1. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

New concepts and emerging technologies for enhanced product performance

Room: Grand Ballroom Salon 5

Session Chairs: Chisung Ahn, Korea Institute of Industrial Technology; Sungwook Mhin, Kyonggi University

3:20 PM**(ICACC-631-2022) In-situ OCT observation of internal structure of alumina surry under shear field (Invited)**J. Tatami^{*1}; H. Takaba¹; M. Iijima¹; T. Takahashi²

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

3:50 PM**(ICACC-632-2022) AI driven material design (Invited)**K. Doh¹; S. Kim¹; S. Kim¹; E. Ahn¹; D. Lee^{*1}

1. Pohang University of Science and Technology(POSTECH), Materials Science and Engineering, Republic of Korea

4:20 PM**(ICACC-633-2022) Optimization of the part orientation and support design during the stereolithography process for green ceramic parts printing**V. Pateloup^{*1}; P. Michaud¹; T. Chartier²

1. IRCER, Ceramic Processes, France
2. CNRS IRCER, France

4:40 PM**(ICACC-634-2022) Vibration controllability of intelligent sandwich structure embedded magnetorheological elastomer**N. Sulatchaneenopdon^{*2}; T. Katagiri²; H. Son²; A. Khantachawana³; J. Garcia-Barruetabeña¹; M. J. Elejabarrieta¹; T. Nakayama²; H. Suematsu²; K. Niihara²

1. Facultad de Ingeniería, Spain
2. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan
3. King Mongkut's University of Technology, Mechanical Engineering, Thailand

5:00 PM**(ICACC-635-2022) Development of Poling Method for Dielectric Materials Using Nanosecond Pulsed Electric Field**T. Chiyoda^{*1}; H. Suematsu²; K. Niihara²; T. Nakayama²

1. Nagaoka University of Technology, Japan
2. Nagaoka University of Technology, Extreme Energy-Density Research Institute, Japan

S14: Crystalline Materials for Electrical, Optical and Medical Applications

Optical Material

Room: Flagler A/B

Session Chair: Dongsheng Yuan, National Institute for Materials Science (NIMS)

8:30 AM

(ICACC-636-2022) Influence of Two-Step Spark Plasma Sintering on Optical Property in Transparent Y_2O_3 Ceramics

L. Ji Hwoan^{*1}; B. Kim²; B. Jang³

1. Kyushu University, Interdisciplinary Graduate School, Republic of Korea
2. National Institute for Materials Science, Fine-Grained Refractory Materials Group, Japan
3. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan

8:50 AM

(ICACC-637-2022) Entropy Stabilized Oxides

A. Voskanyan^{*1}; A. Navrotsky²

1. Arizona State University, USA
2. University of California, Davis, Peter A. Rock Thermolab and NEAT ORU, USA

9:10 AM

(ICACC-638-2022) Effect of Magnetic Field on Tool Motion during Magnetic Field-Assisted Finishing on Fused Silica Optics

J. T. Long^{*1}; K. Merino²; H. Yamaguchi²

1. University of Florida, Materials Science and Engineering, USA
2. University of Florida, Mechanical and Aerospace Engineering, USA

9:30 AM

(ICACC-639-2022) Current advancement of RPL materials and applications (Invited)

G. Okada^{*1}; M. Koshimizu²; T. Yanagida³; S. Kasap⁴; H. Nanto¹

1. Kanazawa Institute of Technology, Japan
2. Tohoku University, Department of Applied Chemistry, Japan
3. Nara Institute of Science and Technology, Japan
4. University of Saskatchewan, Canada

10:00 AM

Break

Sensor

Room: Flagler A/B

Session Chair: Christina Rost, James Madison University

10:20 AM

(ICACC-640-2022) Characterization of environmentally friendly inorganic pigments with near-infrared (NIR) reflective properties (Invited)

R. Oka^{*1}; T. Hayakawa²

1. Nagoya Institute of Technology, Japan
2. Nagoya University of Technology, department of life science and applied chemistry, Japan

10:50 AM

(ICACC-641-2022) M-I Transition Control of VO_2 Thin Film by Excimer Laser Assisted Metal Organic Deposition (ELAMOD) (Invited)

T. Tsuchiya^{*1}; T. Nakajima²; J. Nomoto³; Y. Kitanaka⁴; I. Yamaguchi⁵; Y. Uzawa¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:20 AM

(ICACC-642-2022) Flexible Ceramic Temperature Sensor Films for Free Form Devices (Invited)

T. Nakajima^{*1}; T. Tsuchiya²

1. National Institute of Advanced Industrial Science and Technology (AIST), Advanced Manufacturing Research Institute, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:50 AM

(ICACC-643-2022) Spark ablation in the development of Au-decorated copper oxide films for sensing applications

F. Radovanović-Perić^{*1}; M. Gaboardi²; V. Mandić³; I. Panzic¹

1. Faculty of Chemical Engineering and Technology, Department for Inorganic Chemical Technology and Non-metals, Croatia
2. Elettra Sincrotrone Trieste, Italy

Phosphor

Room: Flagler A/B

Session Chair: Mariya Zhuravleva, University of Tennessee

1:30 PM

(ICACC-644-2022) Research on Ligand Free Quantum Dots Light-Emitting Materials and Devices (Invited)

T. Hirai^{*1}; T. Tsuchiya²; M. Tachibana³

1. COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION (CSIRO), Manufacturing, Australia
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan
3. Yokohama City University, Japan

2:00 PM

(ICACC-645-2022) Synthesis and study of high-entropy garnet phosphors

J. Li^{*1}; Y. Wu¹

1. Alfred University, Kazuo Inamori School of Engineering, New York State College of Ceramics, USA

2:20 PM

(ICACC-646-2022) Narrow Blue and Broad Yellow Multicolor Emissions in the Eu^{2+} -activated $Na[Li_3SiO_4]$ with UCr_4C_4 crystal structure

M. Iwaki^{*1}; K. Toda²; M. Sato²

1. Niigata University, Graduate School of Science and Technology, Japan
2. Niigata University, Japan

2:40 PM

(ICACC-647-2022) Intelligent synthesis of oxide-phosphors using a microwave heating method

K. Toda^{*1}

1. Niigata University, Japan

3:00 PM

Break

Scintillator

Room: Flagler A/B

Session Chair: James Wollmershauser, U.S. Naval Research Laboratory

3:20 PM

(ICACC-648-2022) Optical and radiation response properties of gallate glasses with a rare-earth ion (Invited)

N. Kawano^{*1}; K. Shinozaki²; T. Kato³; D. Onoda³; Y. Takebuchi³; H. Fukushima³; T. Yanagida³

1. Akita University, Japan
2. AIST, Inorganic Functional Materials Research Institute, Japan
3. Nara Institute of Science and Technology, Japan

3:50 PM

(ICACC-649-2022) Ceramic Scintillator Design: Precursor Synthesis (Invited)

M. Zhuravleva^{*1}; C. Melcher²; K. Sickafus³; J. Smith³; K. Anderson³; J. Glodo⁴; Y. Wang⁴; K. Shah⁴

1. University of Tennessee, Scintillation Materials Research Center, USA
2. University of Tennessee, Materials Science and Engineering, USA
3. University of Tennessee, Nuclear Engineering, USA
4. Radiation Monitoring Devices, Inc., USA

4:20 PM

(ICACC-650-2022) Comparison of Ce^{3+} luminescence in single-crystalline and glassy $Ce:LaB_3O_6$ (Invited)

D. Yuan^{*1}; E. G. Villora²; K. Shimamura³

1. National Institute for Materials Science (NIMS), Japan
2. National Institute for Materials Science (NIMS), Japan
3. National Institute for Materials Science, Japan

S15: 6th International Symposium on Additive Manufacturing and 3-D Printing Technologies

Vat Photopolymerization & Substrate Stereolithography I

Room: Coquina Salon C

Session Chair: Christophe Chaput

8:30 AM

(ICACC-651-2022) Mass customization, with additive manufacturing

C. Chaput¹; C. Schick²; M. Bourjol^{*2}

1. 3DCeram Sinto, France
2. 3D Ceram, France

9:00 AM

(ICACC-652-2022) Understanding Stereolithography parameters to build 3D functional ceramic and ceramic/metal parts

T. Chartier¹; M. Bernard¹; P. Michaud¹; V. Pateloup^{*1}

1. IRCER, Ceramic Processes, France

9:20 AM

(ICACC-653-2022) Fabrication of Ultrasonic Oscillators with Micro Polygon Pillars by Laser Reverse Machining

Y. Uemura^{*1}; S. Kirihara²

1. Joining and Welding Research Institute Osaka University, Japan
2. Osaka University, Joining and Welding Research Institute, Japan

9:40 AM

(ICACC-654-2022) Stereolithographic Additive Manufacturing of Ceramic Heat Exchanger Using Magnetic Refrigeration

S. Hashima^{*1}

1. Osaka University, Engineering, Japan

10:00 AM

Break

10:20 AM

(ICACC-655-2022) Fast and high resolution volumetric 3D printing of SiOC components

K. Huang¹; N. König²; H. Elsayed¹; G. Franchin^{*1}; P. Colombo¹

1. University of Padova, Department of Industrial Engineering, Italy
2. xolo GmbH, Germany

10:40 AM

(ICACC-656-2022) Ceramics additive manufacturing for investment casting

C. Schick^{*1}; C. Chaput¹

1. 3dceram, France

11:00 AM

(ICACC-657-2022) Removal of excess material in additive manufacturing

B. Beyoglu¹; M. K. Alazzawi¹; F. Maniaci^{*1}; R. A. Haber¹

1. Rutgers University, Material Science and Engineering, USA

11:20 AM

(ICACC-658-2022) Optimizing Binder Removal and Mapping Binder Distribution in Stereolithography Ceramics

E. G. McAleer^{*1}; M. K. Alazzawi¹; C. Hwang¹; D. S. Hussey²; D. L. Jacobson²; J. LaManna²; E. K. Akdoğan¹; R. Haber¹

1. Rutgers University, Material Science and Engineering, USA
2. National Institute of Standards and Technology, Physical Measurement Laboratory, USA

11:40 AM

(ICACC-659-2022) Stereolithography Apparatus and the Dimensional Control of Alumina Systems

M. K. Alazzawi^{*1}; R. A. Haber¹

1. Rutgers University, Materials Science and Engineering, USA

Vat Photopolymerization & Substrate Stereolithography II

Room: Coquina Salon C

Session Chairs: Zhangwei Chen, Shenzhen University; Soshu Kirihara, Osaka University

1:30 PM

(ICACC-660-2022) Integrated design and 3D printing of Porous ceramics (Invited)

Z. Chen^{*1}

1. Shenzhen University, China

2:00 PM

(ICACC-661-2022) DLP-based stereolithography of composites in the alumina-zirconia system: the role of the ceramist.

B. Inerra¹; B. Coppola¹; T. Lacondemine²; C. Tardivat²; L. Montanaro¹; J. Tulliani¹; P. Palmero^{*1}

1. Politecnico di Torino, Applied Science and Technology, Italy
2. LSFC Laboratoire de Synthèse et Fonctionnalisation des céramiques UMR 3080 CNRS / SAINT-GOBAIN CREE, SAINT-GOBAIN RESEARCH PROVENCE, France

2:20 PM

(ICACC-662-2022) Additive Manufacturing Silicon Nitride through Stereolithography

V. Tsarkova^{*1}; M. K. Alazzawi²; C. Hwang³; R. A. Haber¹

1. Rutgers University, USA
2. Rutgers University, Materials Science and Engineering, USA
3. Rutgers University, Dept. of Materials Science and Engineering, USA

2:40 PM

(ICACC-663-2022) DLP 3D Printing Boron Based Ceramics for Thermal Management and Thermal Shock Resiliency

J. Bice^{*1}; A. Cheung¹; C. Stewart¹; R. M. Erb¹

1. Northeastern University, Mechanical and Industrial Engineering, USA

3:00 PM

Break

3:20 PM

(ICACC-664-2022) Stereolithographic Additive Manufacturing of Lithium Compound Electrolyte with Dense Microstructure

S. Kirihara^{*1}

1. Osaka University, Joining and Welding Research Institute, Japan

3:40 PM

(ICACC-665-2022) Additive manufacturing of Zirconia-toughened Alumina and Alumina-toughened Zirconia

S. M. Allan^{*1}; N. Voellm¹; R. Fordham²; N. Ross¹; T. Prochaska³

1. Lithoz America, LLC, USA
2. Lithoz America, LLC, USA
3. Lithoz GmbH, Austria

4:00 PM

(ICACC-666-2022) Micro-printing of metallized ceramics for microelectronics

K. A. Porter^{*1}; A. C. Yu¹; E. Stonkevitch¹; E. S. Wernick¹; M. R. O'Masta¹; P. P. Bui¹; T. Schaedler¹

1. HRL Laboratories, USA

4:20 PM

(ICACC-667-2022) Innovative zirconia-based material shaped by SLA 3D printing

C. Chaput^{*1}; E. Louradour¹; H. Reveron²; S. Fournier²; G. Baeza²; J. Chevalier³

1. 3DCeram-Sinto, France
2. Université de Lyon, MATEIS UMR5510, Insa de Lyon, Ceramics and Composites Group, France
3. INSA Lyon, Materials Science, France

4:40 PM

(ICACC-668-2022) Rapid manufacturing method of customized bioceramic parts

A. L. Leriche^{*1}

1. University of Valenciennes, France, France

S16: Geopolymers, Inorganic Polymers and Sustainable Materials

3D Printing of Geopolymers

Room: Coquina Salon A

Session Chair: Paolo Colombo, University of Padova

8:30 AM

(ICACC-669-2022) Direct ink writing of geopolymer and its composites with high spatial resolution and tunable mechanical properties (Invited)

P. He*¹

1. Institute for Advanced Ceramics, School of Materials Science and Engineering, China

9:00 AM

(ICACC-670-2022) Direct Ink Writing of Hierarchically Porous Geopolymeric Structures for Environmental Applications (Invited)

G. Franchin*¹; R. Botti¹; K. G. Oliveira²; M. D'Agostini¹; P. Colombo³

1. University of Padova, Industrial Engineering, Italy
2. University of Oulu, Fibre and Particle Engineering Research Unit, Finland
3. University of Padova, Industrial engineering, Italy

9:30 AM

(ICACC-671-2022) Additive manufacturing of alkali-activated materials by reactive Laser-induced Slip Casting (rLIS) (Invited)

P. Hlavacek*¹; N. Kolsch¹; S. Simon¹; G. J. Gluth¹; J. Guenster¹; H. Kuehne¹; A. Zocca¹

1. Bundesanstalt für Materialforschung und -prüfung (BAM), Germany

10:00 AM

Break

10:30 AM

(ICACC-672-2022) Large Scale Additive Manufacturing of Inorganic Geopolymer Components Using Binder Jetting

H. Elsayed²; F. Gobbin²; P. Colombo*¹

1. University of Padova, Industrial engineering, Italy
2. University of Padova, Department of Industrial Engineering, Italy

11:00 AM

(ICACC-673-2022) Production and applications of geopolymers for inert waste management and hazardous waste materials encapsulation (Invited)

M. B. Ogundiran*¹

1. University of Ibadan, Department of Chemistry, Nigeria

Acid-based Phosphate Geopolymers

Room: Coquina Salon A

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

11:30 AM

(ICACC-674-2022) Investigations of SilicoAluminoPhosphate Geopolymer Glass-Ceramics (Invited)

W. J. Monzel*¹; W. M. Kriven²; G. Gadikota³; G. Neher⁴; D. Samuel⁵; A. Hohenshil⁶; H. Asgar³

1. Air Force Research Lab Materials and Manufacturing Directorate, Structural Materials, Composites Branch, USA
2. University of Illinois at Urbana-Champaign, USA
3. Cornell University, Civil and Environmental Engineering, USA
4. Arctos Inc., USA
5. University of Illinois at Urbana-Champaign, Materials Science and Engineering, USA
6. Cornell University, Chemical and Biological Engineering, USA

Use of Waste Materials to make Geopolymers

Room: Coquina Salon A

Session Chair: Nishant Garg, University of Illinois Urbana-Champaign

1:30 PM

(ICACC-675-2022) Waste-derived glass as precursor for inorganic polymers: From binders to sorbents for dye removal (Invited)

A. Mehta³; J. Kraxner²; D. Galusek²; E. Bernardo*¹

1. University of Padova, Department of Industrial Engineering, Italy
2. IIC SAS, Joint Glass centre, Slovakia
3. University of Trencin, FunGlass, Slovakia

2:00 PM

(ICACC-676-2022) Volcanic ashes and alkali activation: a chemical approach (Invited)

I. Lancellotti*¹; G. Dal Poggetto¹; L. Barbieri¹; C. Finocchiaro²; G. Barone²; P. Mazzoleni²; C. Leonelli³

1. University of Modena and Reggio Emilia, Engineering Enzo Ferrari, Italy
2. University of Catania, Biological, Geological and Environmental Sciences, Italy
3. University of Modena and Reggio Emilia, Department of Engineering Enzo Ferrari, Italy

2:30 PM

(ICACC-677-2022) Characterization of low and high calcium pond ashes and their applicability for preparation of activated pastes (Invited)

B. Uyat¹; C. Rüscher²; T. Jadamba*¹

1. Institute of Chemistry and Chemical Technology, Mongolian Academy of Sciences, Materials Science and Technology, Mongolia
2. Leibniz University Hannover, Mineralogy, Germany

3:00 PM

Break

3:30 PM

(ICACC-678-2022) Construction and demolition residuals as raw materials for the production of geopolymer building materials (Invited)

F. Kugler*¹; W. Krčmar¹; U. Teipel²

1. University of Applied Sciences Nuremberg, Materials Engineering, Germany
2. University of Applied Sciences Nuremberg, Process Engineering, Germany

4:00 PM

(ICACC-679-2022) Alkali-activation of mineral waste: processing by traditional and 3D printing processes (Invited)

P. Palmero*¹; B. Coppola¹; C. Tardivat²; L. Montanaro¹; J. Tulliani¹

1. Politecnico di Torino, Applied Science and Technology, Italy
2. LSCF Laboratoire de Synthèse et Fonctionnalisation des céramiques UMR 3080 CNRS / SAINT-GOBAIN CREE, SAINT-GOBAIN RESEARCH PROVENCE, France

4:30 PM

(ICACC-680-2022) Alkali activated cements using construction and demolition waste (Invited)

H. A. Colorado L.*¹; R. Florez²

1. Universidad de Antioquia, Colombia
2. Queen's University, Canada

S17: Advanced Ceramic Materials and Processing for Photonics and Energy

Multifunctional Materials II

Room: Coquina Salon E

Session Chair: Federico Rosei

8:30 AM

(ICACC-681-2022) Optical and Mechanical Properties of SiCN:H Thin Films for Applications in Photonic Structures (Invited)

A. Abdelal¹; B. Ahammou¹; C. Levallois²; J. Landesman²; P. Mascher*¹

1. McMaster University, Engineering Physics, Canada
2. INSA Rennes, France
3. Université de Rennes, France

9:00 AM**(ICACC-682-2022) Ceria-titania photoactive nanosystems for energy and environmental applications (Invited)**E. Moretti*¹

1. Ca' Foscari University of Venice, Department of Molecular Sciences and Nanosystems, Italy

9:30 AM**(ICACC-683-2022) Non-hydrolytic sol-gel chemistry to functional hybrid materials (Invited)**N. Pinna*¹

1. Humboldt-Universität zu Berlin, Department of Chemistry, Germany

10:00 AM**Break****10:20 AM****(ICACC-684-2022) Upconversion Nanoparticles and Their Applications (Invited)**F. Vetronne*¹

1. Institut National de la Recherche Scientifique, Université du Québec, Centre Énergie, Matériaux et Télécommunications, Canada

10:50 AM**(ICACC-685-2022) Designing Carbon Nanomaterials For Energy and Biofuel Applications (Invited)**R. Naccache*¹

1. Concordia University, Chemistry and Biochemistry, Canada

Advanced and Nanostructured Materials I

Room: Coquina Salon E

Session Chair: Federico Rosei

1:30 PM**(ICACC-686-2022) Tuning nanostructures of self-assembled 2-D metal oxide nanosheets (Invited)**S. T. Misture*¹

1. Alfred University, MSE, USA

2:00 PM**(ICACC-687-2022) Reaching the intrinsic limit for photovoltaic performance in few layer transition metal dichalcogenides (Invited)**J. R. Caram*¹

1. University of California, Los Angeles, Chemistry, USA

2:30 PM**(ICACC-688-2022) Hybrid van der Waals heterostructures formed by molecules and quantum materials (Invited)**E. Orgiu*¹

1. Institut National de la Recherche Scientifique (INRS), EMT Centre, Canada

3:00 PM**Break****3:20 PM****(ICACC-689-2022) Nano-crystalline ZnO:Eu sponges; nature of Lanthanide-doping (Invited)**G. Westin*¹

1. Uppsala University, Sweden

3:50 PM**(ICACC-690-2022) On the interface semiconducting transistor channel-ionic gating medium from bioelectronics to energy storage (Invited)**C. Santato*¹

1. Ecole Polytechnique de Montreal, Canada

4:20 PM**(ICACC-691-2022) Biomimetic solution-based coatings for functional applications (Invited)**E. Colusso¹; A. Martucci*¹

1. University of Padova, Industrial Engineering, Italy

4:50 PM**(ICACC-692-2022) Photochromic behavior and persistent luminescence of transparent MgGa₂O₄ materials**G. Zhang*¹; Y. Wu¹

1. Alfred University, Kazuo Inamori School of Engineering, New York State College of Ceramics, USA

5:10 PM**(ICACC-693-2022) Photoelectrochemical cells based on nanomaterials for solar hydrogen production**D. Benetti*¹; F. Rosei¹

1. Institut National de la Recherche Scientifique, EMT, Canada

FS2: Materials for Thermoelectrics**Novel Thermoelectric Materials**

Room: Ponce de Leon

8:30 AM**(ICACC-694-2022) Thermoelectric Materials for Power Generation up to 1000 °C**Z. Ren*¹

1. University of Houston, Physics & TcSUH, USA

9:00 AM**(ICACC-695-2022) Thermoelectric Barium Copper Chalcogenides (Invited)**H. Kleinke*¹

1. University of Waterloo, Chemistry, Canada

9:30 AM**(ICACC-696-2022) BiCuSeO-based oxychalcogenides: review and perspectives (Invited)**D. Gourny¹; E. Amzallag¹; J. Creuze¹; N. Dragoe¹; D. Berardan*¹

1. Univ. Paris Saclay, ICMMO, France

10:00 AM**(ICACC-697-2022) Utilizing Defect Engineering to Enhance Performance of Thermoelectric Materials & Modules**T. Mori*¹

1. WPI-MANA, National Institute for Materials Science, Japan

10:20 AM**(ICACC-698-2022) Effect of Doping with Indium and Gallium on Thermoelectric Properties in Zinc Oxide**A. Jeong*¹; M. Ohtaki¹; B. Jang¹

1. Kyushu University, Interdisciplinary Graduate School of Engineering Sciences, Japan

Inorganic Thermoelectric Materials

Room: Ponce de Leon

10:40 AM**(ICACC-699-2022) Quaternary Chalcogenides: Investigations into new multinary compositions and their fundamental structure-property relationships (Invited)**G. S. Nolas*¹

1. University of South Florida, Physics, USA

11:10 AM**(ICACC-700-2022) High-performance 2D printed chalcogenides through grain interface modification for energy recovery applications (Invited)**M. Mallick*¹; A. Rösch¹; L. Franke¹; U. Lemmer¹

1. Karlsruhe Institute of Technology South Campus, Light Technology Institute, Germany

11:40 AM

(ICACC-701-2022) Correlated disorder in thermoelectric materials (Invited)

B. Brummerstedt Iversen*¹

1. Aarhus University, Department of Chemistry and iNANO, Denmark

12:10 PM

(ICACC-702-2022) Textile-Integrated Metal-Oxide:Organic Superlattice Thermoelectrics by ALD/MLD (Invited)

M. Karppinen*¹

1. Aalto University, Department of Chemistry, Finland

12:40 PM

(ICACC-703-2022) Introduction of defects to improve the thermoelectric properties of ScN (Invited)

F. Giovannelli¹; J. Barbot*²

1. CNRS, IUT de Blois, Laboratoire GREMAN, France
2. University of Poitiers, France

Advanced Manufacturing Technologies, Thermodynamics, and Devices

Room: Ponce de Leon

1:30 PM

(ICACC-704-2022) Oxide thermoelectric (Invited)

N. Pryds*¹

1. Technical University of Denmark, Denmark

2:00 PM

(ICACC-705-2022) Stretchable Thermoelectrics for Virtual Reality (VR) Thermo-haptic Application (Invited)

S. Ko*¹

1. Seoul National University, Mechanical Engineering, Republic of Korea

2:30 PM

(ICACC-706-2022) Flexible and wearable thermoelectrics for personal thermal management, energy harvesting, and thermal camouflage (Invited)

R. Chen*¹

1. University of California, San Diego, Mechanical and Aerospace Engineering, USA

3:00 PM

(ICACC-707-2022) Self-Vacuum Sealing Thin-Film Thermoelectric Generators for Wearable Applications

P. Bhatnagar*¹; D. Vashaee¹

1. North Carolina State University, Electrical and Computer Engineering, USA

3:20 PM

Break

3:40 PM

(ICACC-708-2022) Chemistry of high-temperature thermoelectric oxides and TEGs (Invited)

T. Norby*¹

1. University of Oslo, Norway

4:10 PM

(ICACC-709-2022) Fast Ion Transport for Synthesis and Stabilization of β -Zn₄Sb₃ (Invited)

J. He*¹; D. Yang²

1. Clemson University, USA
2. Wuhan University of Technology, China

4:40 PM

(ICACC-710-2022) Tailoring Thermal Conductivities of Thin Films with Nanopores and Point Defects (Invited)

Q. Hao*¹

1. University of Arizona, USA

5:10 PM

(ICACC-711-2022) Bridging the gap between materials development, module fabrication, and module evaluation in thermoelectrics (Invited)

M. Ohta*¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Global Zero Emission Research Center, Japan

FS4: Ceramic/Carbon Reinforced Polymers

Fatigue and Characterization

Room: Grand Ballroom Salon 4

Session Chairs: Masahito Ueda; Masato Sakaguchi, Salesian Polytechnic

8:30 AM

(ICACC-712-2022) Effect of carbon fiber type on microscopic damage behavior in unidirectional CFRP laminates under fatigue loading

S. Kobayashi*¹; T. Osada¹

1. Tokyo Metropolitan University, Mechanical Engineering, Japan

8:50 AM

(ICACC-713-2022) Evaluation of transverse cracking behavior of CFRP and CFRTP cross-ply laminate by Acoustic Emission Technique (Invited)

T. Sakai*¹; T. Hatakeyama¹; N. F. Osman¹; K. Kageyama¹

1. Saitama University, Japan

9:20 AM

(ICACC-714-2022) Polyaniline-based all-polymeric conductive resin for potential application of aircraft lightning strike protection (Invited)

Y. Zhou*¹; T. Yokozeki¹; V. Kumar²; S. Das¹; S. Manomaisantiphap¹

1. The University of Tokyo, Department of Aeronautics and Astronautics, Japan
2. Oak Ridge National Laboratory, Manufacturing Demonstration Facility (MDF), Carbon Fiber Manufacturing Facility (CFTF), USA

9:50 AM

(ICACC-715-2022) Effect of I-V Characteristics under Impulse Current on the Lightning Strike Damage of CFRP Laminates

T. Sato*¹; Y. Fujisawa¹; Y. Hirano³; S. Kamiyama³; T. Okada³; T. Sonehara⁴; T. Ogasawara²

1. Tokyo University of Agriculture and Technology, Department of Mechanical Systems Engineering, Japan
2. Tokyo University of Agriculture and Technology, Japan
3. Japan Aerospace Exploration Agency, Japan
4. SHODEN Co., Ltd., Japan

10:10 AM

Break

Analysis

Room: Grand Ballroom Salon 4

Session Chairs: Takenobu Sakai, Saitama University; Satoshi Kobayashi, Tokyo Metropolitan University

10:30 AM

(ICACC-716-2022) Measurement of microscopic strain distributions of CFRP laminates with fiber discontinuities by sampling moiré method

M. Fikry*¹; Q. Wang²; M. Irita³; S. Ri²; V. Vinogradov⁴; S. Ogihara¹

1. Tokyo University of Science, Mechanical Engineering, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Research Institute for Measurement and Analytical Instrumentation, Japan
3. Tokyo University of Science, Department of Physics, Japan
4. Newcastle University, School of Engineering, United Kingdom

10:50 AM**(ICACC-717-2022) Micromechanical simulation of nonlinear stress-strain behavior for unidirectional carbon fiber/ TriA-X polyimide composites**T. Amano*¹; T. Ogasawara²

1. Tokyo University of Agriculture and Technology, Japan
2. Tokyo University of Agriculture and Technology, Japan

11:10 AM**(ICACC-718-2022) Machine Learning Application for Predicting Impact Information of BVID on Various CFRP Laminates**S. Hasebe*¹; R. Higuchi¹; T. Yokozeki¹; S. Takeda²

1. University of Tokyo, Japan
2. Japan Aerospace Exploration Agency, Japan

11:30 AM**(ICACC-719-2022) Analytical and experimental evaluation of mode II fracture toughness in curved beam**R. Sako*¹; R. Aoki¹; R. Higuchi¹; Y. Urushiyama³; M. Ueda²; T. Yokozeki¹

1. University of Tokyo, Department of Aeronautics and Astronautics, Japan
2. Nihon University, Department of Mechanical Engineering, Japan
3. Honda R&D Co., Innovative Research Excellence, Japan

11:50 AM**(ICACC-720-2022) New Damage Sensing Method of CNT Coated Glass Fiber or Carbon Fiber/PP-PA Composites via 2D- and 3D-Electrical Resistance (ER) Mapping**J. Park*¹; J. Kim¹; D. Kwon¹; L. K. DeVries²

1. Gyeongsang Natl University, Materials Eng. & Convergence Technology, Republic of Korea
2. The University of Utah, Mechanical Engineering, USA

Interfaces and Joints

Room: Grand Ballroom Salon 4

Session Chairs: Satoshi Kobayashi, Tokyo Metropolitan University; Akio Ohtani, Kyoto Institute of Technology

1:30 PM**(ICACC-721-2022) In-situ Observation of Failure Process in Adhesively Bonded CFRP Joints: Relationship Between Microscopic Failure Process and Fracture Toughness (Invited)**S. Oshima*¹

1. Tokyo Metropolitan University, Department of Aeronautics and Astronautics, Japan

2:00 PM**(ICACC-722-2022) Mechanical Properties and Fracture Behavior of FRTP Riveted Joints by Ultrasonic Welding Process (Invited)**A. Ohtani*¹; S. Nakasuji¹

1. Kyoto Institute of Technology, Japan

2:30 PM**(ICACC-723-2022) Fatigue and Static characterization on the behavior of electrospun nanofiber veil toughened composites**M. Shi*¹; A. Nakai¹

1. Gifu University, Japan

2:50 PM**(ICACC-724-2022) Damage Accumulation in Angle-plyed CFRP Laminates with Mesh Interlayers under Fatigue Loading (Invited)**H. Nakatani*¹; Y. Sakamoto¹

1. Osaka City University, Department of Mechanical & Physical Engineering, Japan

3:20 PM**Break****Processing**

Room: Grand Ballroom Salon 4

Session Chairs: Satoshi Kobayashi, Tokyo Metropolitan University; Hayato Nakatani, Osaka City University

3:40 PM**(ICACC-725-2022) Analytical evaluation of orientation behavior of tricalcium phosphate / poly(lactic acid) composite screws in die forging**M. Sakaguchi*¹; N. Kurosawa³; R. Arakawa¹; S. Kobayashi²

1. Salesian Polytechnic, Mechanical and Electronic Engineering, Japan
2. Tokyo Metropolitan University, Mechanical Engineering, Japan
3. Salesian Polytechnic, Advanced Course of Production System Engineering, Japan

4:00 PM**(ICACC-726-2022) 3D print path generation based on the local activation and global inhibition system**N. Ichihara*¹; M. Ueda¹

1. Nihon University, Japan

4:20 PM**(ICACC-727-2022) Tape/Freeze-cast PVDF-HFP/Alumina Composite Membranes for Battery Separators**C. Wu*¹; K. Faber²; H. Liu³

1. California Institute of Technology, USA
2. California Institute of Technology, USA
3. TalosTech LLC, USA

4:40 PM**(ICACC-728-2022) Continuous Forming and Secondary Processing Technology for Long Composite Members (Invited)**A. Nakai*¹

1. Gifu University, Japan

5:10 PM**(ICACC-729-2022) Graphene based nanocomposites: An emerging material for the structural applications (Invited)**A. K. Pathak*¹; T. Yokozeki¹; S. R. Dhakate²

1. University of Tokyo, Department of Aeronautics and Astronautics, Japan
2. CSIR-National Physical Laboratory, Advanced Carbon Products and Metrology, India

FS5: Current Challenges in Microstructural Evolution: From Fundamentals to Engineering Applications**From Microstructure to Properties**

Room: Coquina Salon F

Session Chair: Ricardo Castro, University of California, Davis

8:30 AM**(ICACC-730-2022) Sintering of 3D-Printed Powder Components: Influence of Gravity on Shape Distortions (Invited)**E. Olevsky*¹; E. Torresani¹; R. German¹

1. San Diego State University, College of Engineering, USA

9:00 AM**(ICACC-731-2022) Does the curvature potential really matters in sintering?**R. Castro*¹

1. University of California, Davis, Material Science & Engineering, USA

9:20 AM**(ICACC-732-2022) Cold Sintering of mutiferroic BiFeO₃**S. Salmanov*¹; B. Malic¹; T. Rojac¹; D. Kuščer¹; M. Otonicar¹

1. Jozef Stefan Institute, Electronic Ceramics Department, Slovenia

9:40 AM**(ICACC-733-2022) Investigation of sintering of ceramic powder systems by in-situ X-ray nanotomography**A. Venkatesh*¹; D. Bouvard¹; P. Lhuissier¹; J. Villanova²

1. Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMAP, 38000 Grenoble, France, France
2. ESRF –The European Synchrotron, 71 Avenue des Martyrs, 38000 Grenoble, France, France

10:00 AM**Break****10:20 AM****(ICACC-734-2022) In-situ anisotropic growth of NiO: driving forces and mechanisms (Invited)**B. Qu¹; K. van Benthem*¹

1. University of California, Davis, Department of Materials Science and Engineering, USA

10:50 AM**(ICACC-735-2022) Grain growth in solid-state sintering: a discrete element model**B. M. Paredes Goyes*¹; D. Jauffres¹; J. Missiaen¹; C. Martin¹

1. University Grenoble Alpes, SIMAP, France

11:10 AM**(ICACC-736-2022) Microstructural design for better polycrystals: From bulk ceramics to battery cathodes (Invited)**Y. Dong*¹; J. Li¹

1. Massachusetts Institute of Technology, USA

11:40 AM**(ICACC-737-2022) Investigation of electrical transitions in the first steps of Spark Plasma Sintering: Effects of pre-oxidation and mechanical loading within copper granular medium.**A. Aliouat*¹; a. Guy¹; V. Rat¹; N. Pradeilles¹; A. Maitre¹

1. Institut de Recherche sur les Céramiques (IRCER), France

Atomistics of Interfaces in Ceramics

Room: Coquina Salon F

Session Chairs: Amanda Krause, University of Florida; Hadas Sternlicht, National Center for Electron Microscopy, Lawrence Berkeley National Laboratory

1:30 PM**(ICACC-738-2022) Nanoscale Dynamic Observations of Fracture and GB Migration in Ceramic (Invited)**Y. Ikuhara*¹

1. Japan Fine Ceramics Center, University of Tokyo, Japan

2:00 PM**(ICACC-739-2022) Dislocation structures and electrical conduction properties of low-angle grain boundaries in SrTiO₃ (Invited)**A. Nakamura*¹

1. Osaka University, Department of Mechanical Science and Bioengineering, Japan

2:30 PM**(ICACC-740-2022) Direct Observation and Control of Lattice Defects in Oxides for Energy Conversion and Storage (Invited)**S. Chung*¹

1. Korea Advanced Institute of Sci. & Tech. (KAIST), Materials Science & Engineering, Republic of Korea

3:00 PM**Break****3:20 PM****(ICACC-741-2022) Magnetic-field-free atomic resolution STEM for magnetic materials (Invited)**N. Shibata*¹

1. The University of Tokyo, Japan

3:50 PM**(ICACC-742-2022) Disconnections and Microstructure Evolution in Spark Plasma Sintered Ytterbium Pyrosilicate Environmental-Barrier-Coating Ceramics Upon Their Interaction with Molten Calcia-Magnesia-Aluminosilicate Glass (Invited)**H. Sternlicht*¹; N. P. Padture²

1. National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, USA
2. Brown University, School of Engineering, USA

4:10 PM**(ICACC-743-2022) The Role of Crystallographic Texture on Grain Growth in CaO-Doped Al₂O₃ (Invited)**B. Conry¹; M. Kole¹; P. Tiwari¹; J. Harley¹; M. R. Tonks²; M. Kesler³; A. Krause*¹

1. University of Florida, USA
2. University of Florida, Materials Science and Engineering, USA
3. Oak Ridge National Lab, USA

4:40 PM**(ICACC-744-2022) Experimental and Computational Investigation of Grain-Boundary Transformation Induced Abnormal Grain Growth (Invited)**C. J. Marvel*¹; C. Riedel¹; J. M. Rickman¹; M. P. Harmer¹

1. Lehigh University, USA

Friday, January 28, 2022**S16: Geopolymers, Inorganic Polymers and Sustainable Materials****Sustainable Materials**

Room: Coquina Salon A

Session Chair: Paola Palmero, Politecnico di Torino

8:30 AM**(ICACC-745-2022) Progress in the Commercial Adoption of Cement with Low-CO₂ Emissions (Invited)**J. Van Deventer*¹

1. Zeobond Group, Australia

9:00 AM**(ICACC-746-2022) Impact of Na/Al ratio on Behavior of Alkali-Activated Metakaolin (Invited)**N. Garg*¹

1. University of Illinois Urbana-Champaign, Civil and Environmental Engineering, USA

9:30 AM**(ICACC-747-2022) Clay mining by-products: potentiality for geopolymer composites (Invited)**C. Sgarlata¹; A. Formia¹; F. Ferrari²; C. Leonelli*¹

1. University of Modena and Reggio Emilia, Department of Engineering Enzo Ferrari, Italy
2. Sibelco Ankerpoort NV, Netherlands
3. Sibelco Italia S.p.A., Italy

S17: Advanced Ceramic Materials and Processing for Photonics and Energy**Advanced and Nanostructured Materials II**

Room: Coquina Salon E

Session Chair: Alberto Vomiero, Lulea University of Technology

8:30 AM**(ICACC-748-2022) Charge Extraction by Linearly Increasing Voltage (CELIV) as an imaging technique for carrier mobility investigations in solar solar cells (Invited)**G. Fanchini*¹

1. University of Western Ontario, Physics and Astronomy, Canada

9:00 AM**(ICACC-749-2022) Aptamer-Based Surface Plasmon Resonance Sensing Platform for Therapeutic Drug Monitoring in Oncology (Invited)**F. Polo*¹

1. Ca' Foscari University of Venice, Molecular Sciences and Nanosystems, Italy

9:30 AM**(ICACC-750-2022) Semiconducting perovskite Ba₂CuWO₆ for photovoltaic applications**M. Braun*¹; S. Wagner¹; M. J. Hoffmann¹

1. Karlsruhe Institute of Technology, Institute for Applied Materials - Ceramic Materials and Technologies, Germany

9:50 AM**Break****10:10 AM****(ICACC-751-2022) Nanostructured ZnO electron transporting materials for hysteresis-free perovskite solar cells**V. Mandić*¹; I. Panzic²; F. Radovanović-Perić²; T. Rath⁴

1. Faculty of Chemical Engineering and Technology, Department for Inorganic Chemical Technology and Non-metals, Croatia
2. Faculty of Chemical Engineering and Technology, University of Zagreb, Croatia
3. University of Zagreb, Faculty of Chemical Engineering and Technology, Croatia
4. Institute for Chemistry and Technology of Materials, Austria

10:30 AM**(ICACC-752-2022) Applications of low dimensional functional ceramics in exhaled gas sensing and phototherapy (Invited)**O. K. Varghese*¹; B. Kandel¹; D. Waligo¹; A. Jayakumar¹; M. Paulose¹

1. University of Houston, Department of Physics, USA

11:00 AM**(ICACC-753-2022) Materials Screening for Optical Emitters: Towards Thermophotovoltaics with Efficiency >50% (Invited)**M. Leite*¹

1. University of California, Davis, Department of Material Science and Engineering, USA

11:30 AM**(ICACC-754-2022) Novel Catalysts for Water splitting: 2D materials and transition metal phosphides (Invited)**T. A. Shifa*¹

1. Ca'Foscari University of Venice, Department of Molecular Science and Nanosystem, Italy

FS5: Current Challenges in Microstructural Evolution: From Fundamentals to Engineering Applications**Advanced Processing**

Room: Coquina Salon F

Session Chairs: Michael Knight, Colorado School of Mines; Diletta Giuntini, Eindhoven University of Technology

8:30 AM**(ICACC-755-2022) Microstructural Evolution and Mechanical/Thermal Properties of Silicon Nitride Ceramics (Invited)**T. Ohji*¹; K. Hirao¹

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:00 AM**(ICACC-756-2022) Supercrystalline Nanocomposites: Nanoarchitectures, Mechanical Behavior and Multifunctionality (Invited)**D. Giuntini*¹; B. Bor²; B. Domenech²; A. Plunkett²; G. Schneider²

1. Eindhoven University of Technology, Netherlands
2. Hamburg University of Technology, Germany

9:20 AM**(ICACC-757-2022) Tailoring Electrical Resistivity of Reaction Bonded Diamond – Silicon Carbide Composites**S. McAnany*¹; S. Salamone¹; G. Evans¹

1. II-VI M Cubed, USA

9:40 AM**(ICACC-758-2022) Interactions between Refractory Metals and SiC/SiC Composites**T. Patel*¹; R. Wheeler¹; E. Heckman¹; M. Cinibulk¹; Z. D. Apostolov¹

1. Air Force Research Laboratory, USA
2. UES, Inc., USA

10:00 AM**Break****10:20 AM****(ICACC-759-2022) Study of microstructure and mechanical properties of ceramic reinforced Aluminium alloy composites made with Friction Stir Processing**K. Singh Sandhu*¹; H. Singh¹; G. S. Singh¹

1. Punjabi University, Mechanical Engineering, India

10:40 AM**(ICACC-760-2022) Dilute Fe doped strontium titanate: tracking effective Fe valence with sintering conditions (Invited)**M. Knight*¹; A. Meyer²; J. Preusker²; W. Rheinheimer³; I. Reimanis⁴

1. Colorado School of Mines, Metallurgical and Materials Engineering, USA
2. Colorado School of Mines, Chemical and Biological Engineering, USA
3. Jülich Research Center, Institute of Energy and Climate Research - Materials Synthesis and Processing, Germany
4. Colorado School of Mines, USA
5. Karlsruhe Institute of Technology, Germany

11:10 AM**(ICACC-761-2022) In-situ SEM Study of Microstructure Evolution During Selective Reduction of Ni/Co Nanoparticles from Spinel Oxides (Invited)**S. T. Mixture*¹

1. Alfred University, MSE, USA

11:40 AM**(ICACC-762-2022) Microstructure Evolution in Thin Film Yttria-Doped Barium Zirconate**D. Jennings¹; I. Reimanis*¹; S. Ricote²; J. Santiso⁴

1. Colorado School of Mines, USA
2. Colorado School of Mines, Metallurgical and Materials Engineering, USA
3. Colorado School of Mines, Mechanical Engineering, USA
4. Catalan Institute of Nanoscience and Nanotechnology, Spain