

MINUTES
INTERNATIONAL CERAMIC FEDERATION
COUNCIL MEETING
WESTIN HOTEL
CINCINNATI, OHIO, USA
SUNDAY, APRIL 18, 1993

TP/	d.d. 28/7/93
Behand.:	
Afdieningsdatum:	
Costel:	

President Metselaar called the meeting to order at 12:01 p.m. The attendance list is attached.

CONSTITUTION

M. McLaren moved to accept the draft constitution recommended by the Executive Committee in its meeting of April 18, 1993. R. Bowman seconded. Motion passed.

TANZANIA MEMBERSHIP

M. McLaren moved to admit the Tanzanian Ceramic Association as an ICF member organization. H. Hausner seconded. Motion passed.

ELECTION OF OFFICERS

Professor McLaren, Chair of the nominating Committee, reported the following nominations for officers:

Hans Hausner	President
John C. Lowe	Vice President/President Elect
Richard Bowman	2nd Vice President
Nigel Stone	Secretary
Rudi Metselaar	Past President
Paul Holbrook, Executive Director The American Ceramic Society	Secretariat

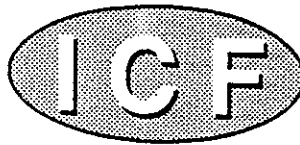
M. McLaren moved that the slate of officers nominated be elected by acclamation. R. Bowman seconded. Motion passed.

ATTENDANCE LIST

COUNCIL MEETING

SUNDAY, APRIL 18, 1993

Bowman, Richard	Australian Ceramic Society/ CSIRO	Tel: 61 3 252 6021 FAX: 61 3 252-6244
Hausner, Hans	European Ceramic Society/ Technical University of Berlin	Tel: 49 30 314 23425 FAX: 49 30 314 21100
Ichinose, Noboru	The Ceramic Society of Japan	Tel: 81 3 3203 4141 FAX: 81 3 3200 2567
Lowe, John C.	Canadian Ceramic Society/ Anjo Engineering & Consulting Ltd.	Tel 416-727-5273 FAX: 416 727-7036
McLaren, Malcolm G.	American Ceramic Society/ Rutgers University	Tel: 908 932-5700 FAX 908 932-5595
Ruiz, J. Martin	Mexican Ceramic Society	Tel: 525-584-9722 FAX: 525-2640026
Spriggs, Richard M.	American Ceramic Society/ Alfred Univ., Center for Advanced Ceramic Technology	Tel: 607 871-2486 FAX: 607 871-3469
Stone, Nigel	South African Ceramic Society	Tel: 12 841 4265 FAX: 12 841 4395
Suzuki, Y.	The Ceramic Society of Japan	(Observer)
Topolevsky, Raul	ATAC (Argentina Ceramic Society)	Tel: 54 1 772 4648 FAX: 54 1 772 4698
Udagawa, Shigekzu	The Ceramic Society of Japan	Tel: 81 3 3362-5231 FAX: 81 3 3362 5714



TS/	d.d. 26-7-93
Behandl:	
Aufbelegedatum:	
Copier:	

**EXECUTIVE COMMITTEE MEETING
MINUTES
WESTIN HOTEL
CINCINNATI, OHIO, USA
SUNDAY, APRIL 18, 1993**

President Metselaar called the meeting to order at 9:15 a.m. Each of the attendees (see attached list) introduced themselves.

The minutes of the Executive Committee meeting held at the annual meeting of the Canadian Ceramic Society in Toronto on February 16, 1992, were approved as submitted.

Report of Committee on Standardization

Dr. Schneider presented an excellent overview of standards issues with regard to fine (advanced) ceramics. ISO has established a committee (TC-206) for fine ceramics. The Secretariat for this committee has been established with Dr. Kano in Japan, and Dr. Schneider is chair of the committee. The committee has four key members (Japan, United States, Korea, Indonesia) but has not had its first organizational meeting. All countries are interested in the committee, but most want to be observers, not workers. Dr. Schneider is trying to generate more enthusiasm among the European countries. Currently, they have only agreed to participate as observers. He asked for help from the ICF to get Europe on board.

Professor Hausner noted that the problem in Europe is obtaining agreement among the various standards organizations. The International Energy Agency (IEA) also complicates the issue. Professor Hausner offered to speak with the German standards organization (DIN) and appeal for their support within the European Community. Dr. Schneider appealed for an opportunity to meet with DIN representatives. He also asked for anyone with comments, suggestions or advice to contact him directly.

Dr. Schneider also reported that VAMAS (Versailles Agreement on Materials Advanced Standards) has prepared a memorandum of understanding on the classification and definition of advanced ceramics using a matrix system. CEN has accepted the VAMAS memorandum as a provisional standard. The United States is now in the process of balloting on the acceptance of the VAMAS memorandum. Japan is also considering it.

Dr. Schneider reported that the IEA is developing data on powder characterization and mechanical properties for advanced ceramics. The powder

characterization data were released in January, and the data on mechanical properties will be released soon. Professor Hausner noted that the IEA is an independent organization and is reluctant to participate in ASTM or ISO activities. The GATT (General Agreement on Trade and Tariffs) says that standards should not be a barrier to trade; therefore, an internationally recognized organization must set the standards. ISO is the only such group.

Report of Research Committee

Professor Hausner reported that his committee's format for collecting information on ceramic research has been tested in Germany and the Netherlands and is now ready for worldwide data collection. Part I is a questionnaire, and Part II is a survey of research topics. He presented the index of materials that has been developed. He also showed a diagram showing how the collection and dissemination of information will work. A copy of his visuals is attached. A computer disk containing the program for data collection will be sent to each ICF member organization. ICF member organizations will be responsible for collection of the research information within their territory, entering it on the ICF computer disk supplied by ICF and then returning a copy of the disk to Professor Hausner. The ECerS, for example, will be responsible for collecting the information from their member countries. His committee will combine the worldwide information on a single disk. Several options are being considered for making the information available on a worldwide basis.

Professor Hausner needs a contact person in each ICF member organization who will be responsible for collection of the information in its territory. A form for this purpose is attached and should be completed and returned to the address shown on the form.

Report of Committee for Listing of International Meeting and Listing of Professional Societies/Officers.

Professor Niesz reported for Professor Ben-Nissan who was unable to attend. A form (copy attached) was distributed at the meeting for collection of information on the addresses and officers of ICF member organizations. Information was also requested for ECerS member organizations. The plan is to computerize this information at the Secretariat (ACerS Headquarters) where it can be maintained current and be readily accessible and disseminated to ICF member organizations. If you have not done so already, please complete this form and send it to Professor Niesz via FAX.

Professor Niesz also distributed a form for obtaining information on future meetings on ceramics that are expected to have a significant international participation. Our intent is to obtain a complete listing of such meetings as far into the future as possible so it can serve as an aide to those planning future meetings as well as for those who may wish to attend. Professor Spriggs noted that ASM International publishes such a calendar now which could be used as input.

Mr. Stone noted that CSIR has a system for collecting information on international meetings on a worldwide basis. He offered to check on the possibility of using their established system to develop and maintain our calendar.

Report of Committee on Nomenclature

Professor Hirano, chairperson, provided a written report since he was unable to attend. His committee will collect and exchange information on nomenclature by collaboration with ICF member societies and standards organizations such as CEN, VAMAS, IEA and ISO. He noted that nomenclature will be included as one of the new ISO Technical Committee (TC-106) on Fine (Advanced) Ceramics. He also noted that a "Glossary of terms Relating to Fine Ceramics" was issued as a Japanese Industrial Standard (JIS R 1600) on February 1, 1993, by MITI. This glossary includes 324 words.

President Hausner will request suggestions from Professor Hirano for members for his committee and will appoint members to provide global representation on the committee.

Committee on Education and Workshops

No report. This committee is inactive. President Hausner will need to appoint a new chair (see minutes from 16 February 1992 meeting in Toronto).

Committee on Protocol for ICF Endorsement of Conferences

Professor Sayer (chair) was unable to attend but reported by letter that the procedures are now in place and seem to be working reasonably well. The task now is to distribute the applications broadly to encourage organizers to seek ICF endorsement. A copy of the application and the procedure was included in the minutes of the Toronto meeting. Member organizations should encourage organizers in their territory to apply for endorsement. It was also suggested that a copy of the guidelines for endorsement be sent with application forms.

Committee on History of Ceramics

Professor Kingery (chair) recently attended the DKG (Deutsche Keramische Gesellschaft-German Ceramic Society) meeting where he discussed ceramic history with Professor Peter Fischer. Professor Fischer has a strong interest in ceramic history and plans to devote much of his time in retirement to the subject. The DKG celebrated the centennial of the death of Seger. The translation of Seger's book on ceramics in 1906-08 was important to the development of the field of ceramics and Professor Kingery recommended that more copies be made available. He noted that much of Seger's work has been rediscovered by others that were not aware of his work.

Professor Kingery noted that freshman engineering enrollment in the United States is down 15% this year. Perhaps this can be attributed to the low esteem society has for engineers. Several societies have programs to improve the esteem of engineers and scientists. The American Institute of Physics has a model program. The American Chemical Society and the American Institute of Electrical Engineers also have programs.

He noted that the ACerS archives are in a "mess" and those of other ceramic societies may not be much better. One role the ICF could play is to implement a program to encourage societies to improve their archives and to teach them how to do it. For example, the Physics Community has developed a series of oral histories and encourages these to be developed on a local basis. One approach would be for the ICF to sponsor History of Technology graduate students to study the history of ceramics and its impact on civilization. Without this support, it is unlikely that many History of Technology students will focus on the history of ceramics.

Professor Kingery suggested three directions that ICF could take:

1. Encourage more cooperation among societies working on histories
2. Encourage more people to become active in the history of engineering and ceramics (most are now focused on chemistry of materials and physics)
3. Provide a fellowship to History of Technology students

He thinks history may be too narrow of a focus for his committee and recommended two tasks:

1. Provide \$20,000-30,000 for developing procedures to establish and maintain archives at societies with the intent of providing data for future history
2. Provide fellowships for studying History of Ceramics

It was suggested that Professor Fischer take the lead in this area. Professor Hausner suggested that we make Dr. Kramer (Honorary President of the DKG) the honorary chair of our committee. Dr. Kramer has a strong interest in art and history and supports the museum in Munich. It was also suggested that companies like Corning, Norton and Carborundum may have substantial archives. For example, Carborundum published a book on its history for its centennial in 1991.

Professor Kingery indicated that the ACerS was planning to publish a book on its history for its 100 year anniversary in 1998.

Committee on Traditional Ceramics

Professor Palmonari reported by letter, since he was unable to attend. His report is attached. Professor Hausner expressed concern about trying to separate traditional and advanced ceramics. He has tried to convince his colleagues in Germany that traditional and advanced ceramics have the same base. He referred the group to his lecture at Bayreuth on the similarities and differences between traditional and advanced ceramics. Everyone agreed that more funding needs to be directed to traditional ceramics, but the consensus was it would be counterproductive to place too much emphasis on separate meetings. Professor Hausner will write to Professor Palmonari to recommend that he suggest international nominees for his committee and relay the consensus of the Executive Committee.

Review of Revised Constitution

The draft of the revised constitution was reviewed. Copies of the current constitution and a draft of the revised constitution were attached to the minutes of the Toronto meeting (February, 1992). The draft of the revised constitution will be recommended for adoption by the ICF council which is scheduled to meet immediately after the completion of this meeting.

Committee on International Accreditation and Licensing of Ceramic Engineers

Professor Sayer (chair) reported by letter that the report on Training and Qualifications for Ceramists is proceeding slowly. He has discussed sources with Dennis Mitchell of the UK and plans to contact T. Ogawa of Japan, H.W. Hennie of Clausthal (Germany) and E.E. Mueller and others in the US. Ms. Berger (Germany) was also suggested by Professor Hausner as well as the person from the University of Richmond (US) that presented a paper at the last ECerS meeting. Dr. Suzuki will check with T. Ogawa and may also recommend other possible committee members from Japan.

Other Business

It was suggested that a short overview of the ICF be written for publication by member societies as a way of promoting ICF.

Professor Hausner will meet with Mr. Holbrook to discuss the duties of the secretariat.

Dr. Yoshimura suggested that the ICF consider doing something on the Global Environmental Problem from the ceramic point of view. For example, the Ceramic Society of Japan has established a special committee for "Interaction of Ceramics to Global Environmental Problems" under the auspices of President Udagawa. Professor Yoshimura is the secretary of this committee.

Future Meetings

The ICF Executive Committee will meet on Sunday, November 7, 1993 at the Pac Rim Meeting; November 7-10 at the Hilton Hawaiian Village Hotel, Honolulu, Hawaii.

There will be a meeting of both the Executive Committee and the Council at the Cimtec meeting in Florence, Italy (June 29 - July 4, 1994).

ACTION ITEMS

1. Prof. Hausner to speak with DIN regarding ISO TC-206.
2. Prof. Hausner to send computer disk for research data collection to each ICF member organization.
3. All ICF member organizations to complete and return form indicating contact person for research data collection.
4. All ICF member organizations to complete form giving official contact address and information on officers. Please FAX To D. Niesz at (908) 932-3258 as soon as possible.
5. Stone to consider establishing and maintaining ICF international meeting calendar and report back to Executive Committee at its next meeting.
6. Prof. Hausner to request suggestions for members of Nomenclature Committee from Prof. Hirano.
7. Prof. Hausner to appoint a new chair of Committee on Education and Workshops.
8. All ICF member representatives to encourage organizers of international meetings to apply for ICF endorsement.
9. Prof. Hausner to write to Prof. Palmonari to get suggestions for committee members and to relay the Executive Committee discussions.
10. Write a short overview of the ICF for publication by member societies (not assigned to a person).
11. Prof. Hausner to meet with P. Holbrook to discuss the duties of the secretariat.

**ATTENDANCE LIST
EXECUTIVE MEETING
SUNDAY, APRIL 18, 1993**

Bowman, Richard	Australian Ceramic Society/ CSIRO	Tel: 61 3 252 6021 FAX: 61 3 252-6244
Hausner, Hans	European Ceramic Society/ Technical University of Berlin	Tel: 49 30 314 23425 FAX: 49 30 314 21100
Holbrook, Paul	American Ceramic Society/ Executive Director	Tel: 614 794-5855 FAX: 614-794-5852
Ichinose, Noboru	The Ceramic Society of Japan	Tel: 81 3 3203 414 FAX: 81 3 3200 2567
Johnson, David	American Ceramic Society/ AT&T Bell Labs	Tel: 908 582-3906 FAX: 908 582-2913
Kingery, David	American Ceramic Society/ University of Arizona	Tel: 602-621-8124 FAX 602 621-8117
Lowe, John C.	Canadian Ceramic Society/ Anjo Engineering & Consulting Ltd.	Tel 416-727-5273 FAX: 416 727-7036
McLaren, Malcolm G.	American Ceramic Society/ Rutgers University	Tel: 908 932-5700 FAX 908 932-5595
Metselaar, Rudi	European Ceramic Society/ Eindhoven University of Technology	Tel: 31 40 473122 FAX: 31 40 445619
Raul, Topolevsky	ATAC (Argentina Ceramic Society)	Tel: 54 1 772 4648 FAX: 54 1 772 4698
Ruh, Edwin	American Ceramic Society/ Rutgers University	Tel: 908 932-2205 FAX 908 932-3258
Ruiz, J. Martin	Mexican Ceramic Society	Tel: 525-584-9722 FAX: 525-2640026
Schneider, Sam	American Ceramic Society/ National Institute for Standards & Technology	Tel: 301-975-5657 FAX: 301 926-8349
Spriggs, Richard M.	American Ceramic Society/ Alfred Univ., Center for Advanced Ceramic Technology	Tel: 607 871-2486 FAX: 607 871-3469
Stone, Nigel	South African Ceramic Society	Tel: 12 841 4265 FAX: 12 841 4395
Tressler, Richard	American Ceramic Society/ Pennsylvania State University	Tel: 814 865-7961 FAX: 814 865 2917
Udagawa, Shigekzu	The Ceramic Society of Japan	Tel: 81 3 3362-5231 FAX: 81 3 3362 5714
Yan, Dong-Sheng	Chinese Ceramic Society	Tel: 86 21 251 2990 FAX: 86 21 251 3903

AGENDA

Subject: Executive Committee Meeting
Sunday, April 18, 1993
Westin Hotel, Fountain Square, Cincinnati, Ohio, USA
Tyler Davidson II
9:00 a.m.

1. Report of Secretary
- ✓ 2. Research Committee Report - Dr. Hausner
- ✓ 3. Committee for International Meetings and Listing of Professional Societies/Officers - Dr. Ben-Nissan
- ✓ 4. Nomenclature Committee - Dr. Hirano
- ✓ 5. Education & Workshops
- ✓ 6. Standardization - Mr. Schneider
- ✓ 7. History of Ceramics - Dr. Kingery
- ✓ 8. Traditional Ceramics - Dr. Palmonari
- ✓ 9. Protocol for ICF Endorsement of Conferences - Dr. Sayer
- ✓ 10. Review Bylaws - Dr. Niesz
- ✓ 11. Accreditation & Licensing
12. Other Business

The ICF Council meeting will follow in the same room at approximately 11:00 a.m.

Election of officers (hon com)
1 year members 3 Council memb
*→ Tanzania (form stann ~~was~~ contact persons
as admin, - gelukwezi)*
Contribution



4/13

X C. N. McLaren
FAX to R. M. ...
FAX to P. ...

The Ceramic Society of Japan

22-17, HYAKUNIN-CHO 2-CHOME, SHINJUKU-KU, TOKYO 169, JAPAN
(FAX 03-3362-5714)

FACSIMILE TRANSMISSION MESSAGE

April 12, 1993

To: Fax 1-908-932-3258
Dr. Dale E. Niesz
Secretary
International ceramic Federation

Dear Dr. Niesz:

I received a copy of your fax letter to Dr. K. Kijima dated February 4, 1993

I would like inform you as follows.
Dr. Shigekazu Udagawa, President of the Ceramic Society of Japan, and Dr. Noboru Ichiose as an executive committee member will attend the ICF Meeting held at Cincinnati on Sunday, April 18. Other two persons, Mr. Yoshiro Suzuki, Executive Director of CSJ and Dr. Masahiro Yoshimura will attend the meeting as observers.

Could you please send me informations and messages related to ICF, because those informations will be filed at CSJ office.

We are looking forward to seeing you at Cincinnati.

Sincerely yours

Yoshiro Suzuki

Yoshiro Suzuki
Executive Director
FAX: 81-3-3362-5714



The Ceramic Society of Japan

22-17, HYAKUNIN-CHO 2-CHOME, SHINJUKU-KU, TOKYO 169, JAPAN
(FAX 03-3362-5714)

FACSIMILE TRANSMISSION MESSAGE

April 14, 1993

To: Fax 1-908-932-3258
Dr. Dale E. Niesz
Secretary
International ceramic Federation

Dear Dr. Niesz:

I am pleased indeed to have your reply fax quickly. I circulated this fax message to persons related to the present matter.

It is great honor for us that CSJ is a nominee for ICF Secretary at the meeting on 18 April. But we think it is too early to hold office as ICF Secretary, because we have to learn details of ICF more and the geological situation of Japan is inconvenient now.

Sincerely yours

Yoshiro Suzuki

Yoshiro Suzuki
Executive Director
FAX: 81-3-3362-571

TO: Rudi Metselaar

FROM: D. E. Niesz

copy for your
information.

4-14-93

Division of Materials Science and Technology

PO BOX 390 Pretoria 0001 South Africa
Telephone : (012) 841-2911
Telefax : (012) 841-4395
Telex : 3-21312 SA
Telegraph : MATTEC

Direct telephone line: (012) 841- 4265

TP/03007067 d.d. 27-10-93

Behand.:

Afdieningsdatum:

Copies:



**Materials
Science and
Technology**

CSIR

To: International Ceramic Federation - Executive Committee

- | | |
|-------------------|--------------------|
| Hans Hausner | 09 49 30 314 21100 |
| John C Lowe | 091 416 727 7036 |
| Richard Bowman | 09 61 3 252 6244 |
| Rudi Metselaar | 09 31 40 445619 |
| Paul Holbrook | 091 614 794 5852 |
| Dale E Niesz | 908 932 3258 |
| Raul Topolevsky | 09 54 1 772 4698 |
| J Martin Ruiz | 0952 5 264 0026 |
| Shigekazu Udagawa | 09 81 3 3362 5714 |

From: N A Stone, Secretary

Date: 27 October 1993

The venue for the ICF Executive Committee to be held on Sunday, 7 November 1993, from 14h00 - 16h00 is the Nautilus III room, Hilton Hawaiian Village.

Best Regards

**Nigel Stone
Secretary
International Ceramic Federation**

Division of Materials Science and Technology

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**Materials
Science and
Technology**

CSIR

**TO: Rudi Metselaar
EXECUTIVE COMMITTEE
INTERNATIONAL CERAMIC FEDERATION**

FROM: Nigel A Stone, Secretary

20 September 1993

Re: Draft Agenda of the ICF Executive meeting to be held at the Hilton Hawaiian Village Hotel at 14h00 on Sunday, 7 November 1993. (see registration for room).

- | | | |
|-----|--|---------------------|
| 1. | Acceptance of previous minutes | N A Stone |
| 2. | Research Committee | Dr H Hausner |
| 3. | Committee for International Meetings and Listings of Professional Societies/Officers | Dr Ben-Nissan |
| 4. | Nomenclature Committee | Dr Shin-ichi Hirano |
| 5. | Standardization | Dr Schneider |
| 6. | History of Ceramics | Dr Kramer |
| 7. | Traditional Ceramics | Dr Palmonari |
| 8. | Protocol for ICF Endorsement of Conferences | Dr Sayer |
| 9. | Global Environment | Dr Yanagida |
| 10. | International Accreditation and Licensing of Ceramic Engineers | Dr Sayer |
| 11. | Education & Workshops | To be advised |
| 12. | Meeting Calender | N A Stone |
| 13. | Other Business | |
| 14. | Future Meetings | |

These are suggested agenda items... If you wish other topics, please notify me by return... fax (27) 12 841 4395.

Mr. Paul Holbrook
Executive Director
International Ceramic Federation
c/o American Ceramic Society
735 Ceramic Place
Westerville, Ohio
Fax: (614) 899-6109

Dear Paul,

I regret that I will be unable to attend the ICF meeting at Cincinnati during the forthcoming ICF meeting. I accepted an invitation to speak at the International Symposium on Integrated Ferroelectrics in Colorado Springs before I realised that the organisers of that event had been ill advised enough to schedule it in coincidence with the ACS. It was too late to back out when I found out.

The procedures for the endorsement of Conferences and Workshops are now in place and seem to work reasonably well. We have not had that many applications and wider distribution of the information and procedures would seem to be warranted. Has the material been distributed from the Secretariat?

The report on the Training and Qualifications for Ceramists is proceeding slowly. I have discussed sources with Dennis Mitchell of the UK and am contacting T.Ogawa of Japan, H.W.Hennicke of Clausthal and E.E.Mueller and others in the US. If you wish me to continue, a preliminary report will be available in the fall.

I would appreciate it if you would communicate this report to the Committee.

Yours sincerely,

M.Sayer
Department of Physics
Queen's University
Kingston, Ontario, Canada K7L 3N6

c.c. Dr. Dale Neisz, Rutgers University
(Fax) (908) 932-3258

Agenda

9

5

SOCIETY NAME:

SOCIETY HEADQUARTERS ADDRESS:

PHONE:

FAX:

List of planned and potential
International Conferences during 1993 - 1998:

Title:

Date:

Location:

Title:

Date:

Location:

Title:

Date:

Location:

Title:

Date:

Location:



Agenda 6

The Ceramic Society of Japan

22-17, HYAKUNIN-CHO 2-CHOME, SHINJUKU-KU, TOKYO 169, JAPAN

(FAX 03-3362-5714)

Nomenclature Committee

April 18, 1993
S. Hirano, Chair

I succeeded the committee chair this year from the former chairperson, Prof. N. Soga.

I am to organize the committee after consultation with the president.

International Commission on Glass(ICG) edited the directory of the nomenclature in 6 languages.

"Glossary of terms relating to fine ceramics" is issued as Japanese Industrial Standard(JIS R 1600) on February 1, 1993.

ISO Technical Committee(TC) 206 on Fine (Advanced) Ceramics is to be organized, in which the nomenclature will also be included as one of the activities.

The first step of this committee in ICF is to collect and exchange the informations on the nomenclature by the collaboration with the member in ICF, referring to the activities of CEN, VAMAS, IEA and ISO.



CENTRO CERAMICO - BOLOGNA

CENTRO DI RICERCA E SPERIMENTAZIONE
PER L'INDUSTRIA CERAMICA

40138 Bologna **14.04.1993**
Via Martelli, 26 - Tel. (051) 53.40.15 - Telex 510891 CENCER I
Fax (051) 53.00.85
IVA 00947780375

Agenda it. 8

Dr. D. Niesz
CENTER FOR CERAMIC RESEARCHES
RUTGERS UNIVERSITY
Piscataway, N.J.
U.S.A.

Dear Dr. Niesz,

first of all I wish to thank you for your visit at our Center: I hope that the cooperation between Emilia-Romagna Region and the State of New Jersey will result in an improvement of the cooperation between our Centers. I already applied to our Regional Department to have more information on the budget available for exchanges of students. I will keep you informed on what is going on.

As I told you, I will not attend the next I.C.F. meeting in Cincinnati. I take the liberty of sending to you my opinion: could you please submit it to the I.C.F. Board?

Up to few years ago all the major international congresses on ceramics dealt exclusively (or for not less than 90%) on advanced materials, the remaining 10% (if present) being covered by topics related to traditional ceramics. Among the reasons for this, I think that one lies in the features of the research on advanced ceramics: it is mainly basic research, carried out by Universities and Research Institutes. Therefore it is easier to have papers and speakers, with more possibilities of sharing new ideas/topics and without any problem directly linked to manufacturing or patents. In the field of traditional ceramics the research is carried out at manufacturers' request or by the plant/glazes manufacturers, often with strict requirements of confidentiality.

As a result, advanced ceramics were supported by many papers but by few industries, while on traditional ceramics the contrary occurred (few papers, but strong industries, spread out all over the world).

SIMCER can be regarded as an exception, with a ratio 1:1 of papers on traditional and advanced ceramics. Probably this is because of the interest of a strong industry active, in Italy, in the field of traditional ceramics. In any case, for a long time SIMCER has been the only one possibility of sharing the knowledge on traditional ceramics.

Now things are changing. First of all, there is a



growing interest in the research on traditional ceramics, probably also thanks to an increased interest of the manufacturers. The technological advances and the improvement of product reliability result in the necessity of a deeper knowledge of all the aspects and topics related to traditional ceramics. Furthermore the production is no longer concentrated in few areas, but is covered by a huge number of countries: the need is felt of more possibilities of exchanges of ideas, experiences, results.

maybe for these reasons, few years ago the American Ceramic Society started with a section on "Whiteware", that covers very interesting topics (this year it will deal with Quality/ISO 9000) with good attendance.

In my opinion time is ready for organizing separate meetings, so these two branches (traditional/advanced ceramics) can become autonomous.

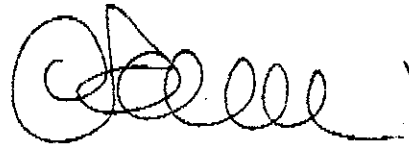
As discussed in Bologna during your visit, my idea is to create a small working group on traditional ceramics within I.C.F. At present I am trying to identify experts from different geographical areas; as soon as possible I will submit a list to the Board.

This is my proposal. Of course, comments and suggestions from I.C.F. are welcome.

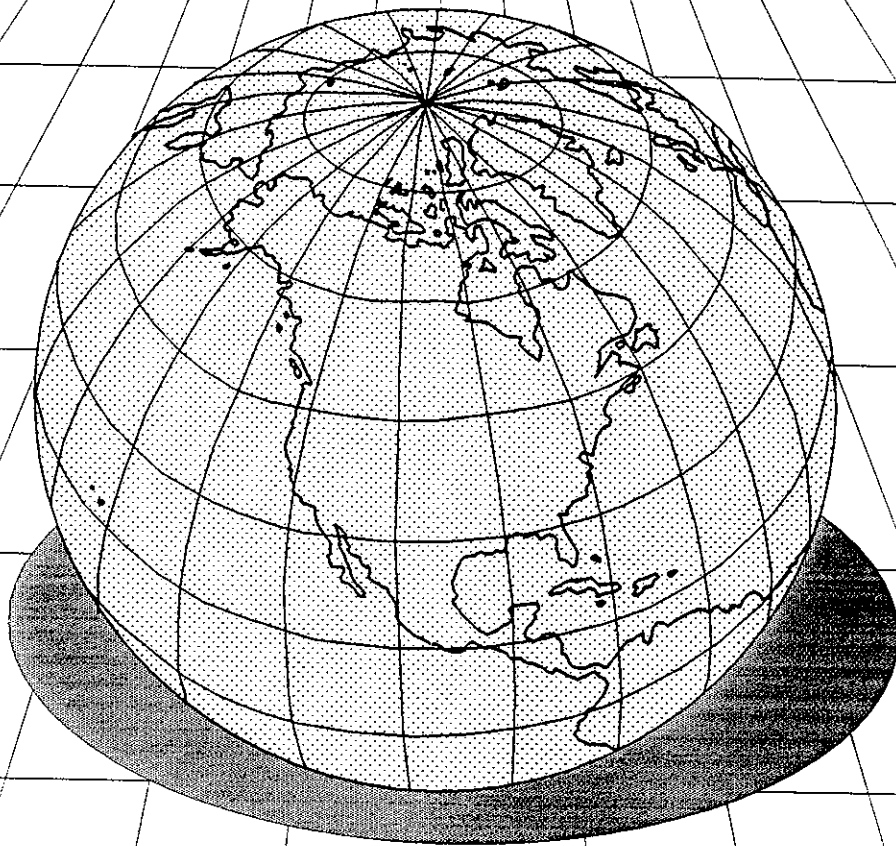
I thank you very much for your help and I look forward to meeting you soon.

With best regards

Prof. C. Palmonari
Director

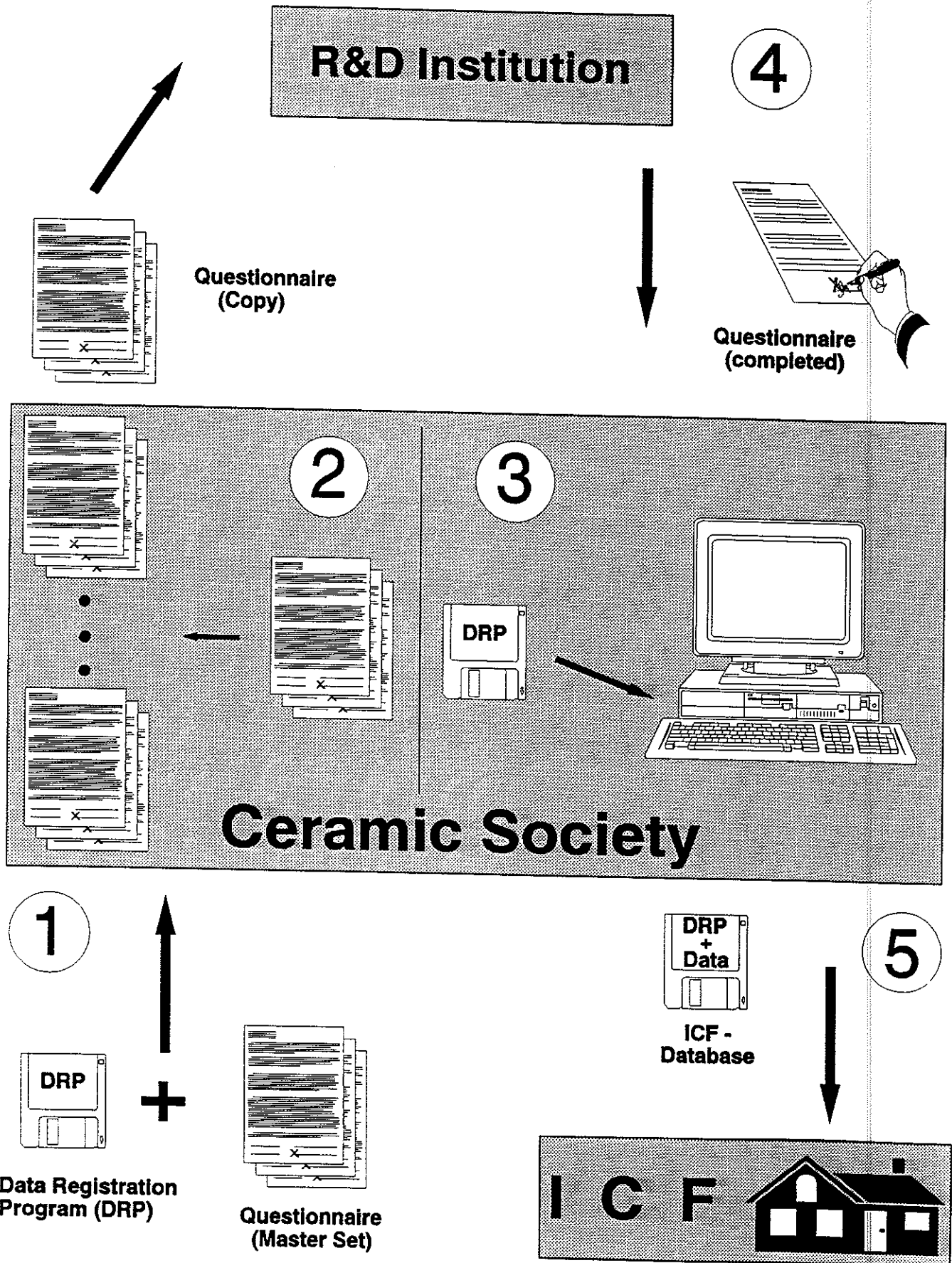


Ceramics
Research '93



**International
Ceramic Federation**

Data-Registration: Procedure



Index: Materials

Oxide Ceramics

M-100	Oxide Ceramics			M-1FF	Others
M-111	Al ₂ O ₃	M-112	ZrO ₂	M-113	TiO ₂
M-114	BeO	M-115	MgO	M-116	MgAl ₂ O ₄
M-117	Y ₂ O ₃	M-118	SiO ₂	M-120	Silicates (synth.)
M-130	Titanates	M-140	Ionic Conductors	M-150	Semiconducting Oxides
M-160	Superconducting Oxides	M-170	Magnetic Oxides	M-180	R.E. Oxide Compositions
M-190	Nb-, Mo-, Ta-Comp.	M-1A0	Actinide Oxides	M-1B0	Phosphates

Non-Oxide Ceramics

M-200	Non-Oxide Ceramics			M-2FF	Others
M-211	C	M-212	SiC	M-213	B ₄ C
M-214	Si ₃ N ₄	M-215	BN	M-216	AlN
M-220	Transition Metal Carbides	M-230	Transition Metal Nitrides	M-240	Transition Metal Borides
M-250	Transition Metal Silicides	M-260	Actinide Carbides	M-270	Fluorides & Sulfides

Silicate Ceramics

M-300	Silicate Ceramics			M-3FF	Others
M-310	Bricks	M-320	Tiles	M-330	Sanitaryware
M-340	Earthenware	M-350	Stoneware	M-360	Porcelain
M-370	Vitreous China	M-380	Bone China	M-390	Glazes
M-3A0	Ceramic Colours	M-3B0	Art, Design		

Refractories

M-400	Refractories			M-4FF	Others
M-410	Clay Based Refractories	M-420	High-Alumina Refractories	M-430	Silica
M-440	Zirconia, Zirconium Silicate	M-450	Carbon	M-460	Silicon Carbide
M-470	Magnesite	M-480	Chrome-Magnesite	M-490	Forsterite
M-4A0	Dolomite	M-4B0	Fused-Cast Refractories	M-4C0	Insulating Materials

Spec. Mat. Groups

M-510	Hardmetals	M-520	Cermets	M-530	Glass-Ceramics
M-5FF	Others				

Type of Reinforcement

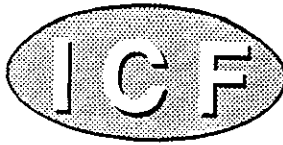
T-100	All Types			T-1FF	Others
T-110	Particles	T-120	Platelets	T-130	Fibers
T-140	Whiskers				

Index: Material Characteristics

Chemistry and Thermodynamics			
C-100	Chemistry and Thermodynamics	C-1FF	Others
C-110	Chemical Composition	C-120	Crystal Structure
C-140	Phase Diagrams	C-150	Kinetics
C-160	Surface Characteristics		
Sintering and Microstructure			
C-200	Sintering and Microstructure	C-2FF	Others
C-210	Powder Characteristics	C-220	Sintering Behaviour
C-230	Microstructural Analysis		
Mechanical Properties			
C-300	Mechanical Properties	C-3FF	Others
C-310	Elasticity	C-320	Strength
C-340	Fatigue	C-350	Creep
C-360	Therm.-Shock Resistance		
Thermal Properties			
C-400	Thermal Properties	C-4FF	Others
C-410	Heat Capacity	C-420	Thermal Expansion
C-430	Thermal Conductivity		
Electrical and Magnetic Properties			
C-500	Electrical and Magnetic Properties	C-5FF	Others
C-510	Electrical Properties	C-511	Electrical Conductivity
C-520	Magnetic Properties	C-512	Dielectric Properties
Optical Properties			
C-600	Optical Properties	C-6FF	Others
C-610	Colour	C-620	Reflectance
C-630	Translucency		
Corrosion and Wear Resistance			
C-700	Corrosion and Wear Resistance	C-7FF	Others
C-710	Corrosion Resistance	C-720	Tribological Behaviour
C-730	Biological Compatibility		
Other Characteristics			
C-F00	Other Characteristics		

Index: Processing Science and Technology

Powder Route					
P-100	Powder Route			P-1FF	Others
P-110	Powder Synthesis	P-111	Solid State Synthesis	P-112	Synthesis from Melts
P-113	Synthesis from Liquids	P-114	Gas-Phase Synthesis		
P-120	Powder Processing	P-121	Milling	P-122	Dispersion
P-123	Granulation				
P-130	Forming Methods	P-131	Dry-Pressing	P-132	Isostatic Pressing
P-133	Plastic Forming	P-134	Slip Casting	P-135	Injection Moulding
P-136	Tape Forming				
P-140	Drying				
P-150	Sintering Technology	P-151	Pressureless Sintering	P-152	Gas-Pressure Sintering
P-153	Hot-Pressing	P-154	Hot-Isostatic Pressing		
Special Fabrication Routes					
P-200	Special Fabrication Routes			P-2FF	Others
P-210	CVD and CVI-Techniques	P-220	Reaction Sintering	P-230	Polymer Decomposition
P-240	Sol-Gel Process	P-250	Synthesis (Fiber/Whisker)	P-260	Joining
Surface Finishing					
P-300	Surface Finishing			P-3FF	Others
P-310	Machining	P-320	Coating		
Quality Control					
P-400	Quality Control			P-4FF	Others
P-410	Nondestructive Testing	P-411	Ultrasonic Testing	P-412	X-ray Tomography
P-413	X-ray Radiography				



Please send this form to :

Techn. Univ. Berlin
Sekt. ES 3 (z. Hd. Herrn Böhm)
Englische Str. 20
D-1000 Berlin 12

*Ceramics
Research
'93*

ICF CR'92/Rev. 1.2

Responsible for data collection:

Name	Last	First
	<input type="text"/>	<input type="text"/>
Company	<input type="text"/>	
Address (Street / City / Country)	<input type="text"/>	
	<input type="text"/>	
Zip / Postal Code	<input type="text"/>	
	<input type="text"/>	<input type="text"/>
Phone	(<input type="text"/>)	<input type="text"/>
Fax	(<input type="text"/>)	<input type="text"/>

Data collection in following countries

(use international valid denotations)

Int. Name	Int. ID	Int. Phone Code

Note:

- Requirements for data registration program (DRP) :
- ✓ IBM AT or compatible (80x86) personal computer
 - ✓ 5 1/4" disk drive
 - ✓ harddisk with minimum free capacity of 700KB
 - ✓ Microsoft compatible mouse and mouse driver
 - ✓ DOS version 3.x or higher

英語索引 (アルファベット順)

英語	番号	用語	英語	番号	用語
[A]			calcination	3302	仮焼
Abbe's number	4409	アッベ数	carbide ceramics	1104	炭化物セラミックス
abrasive machining	3403	と(砥)粒加工	carbon	2201	カーボン
absorption coefficient	4403	光吸収係数	carbon fibers	2205	炭素繊維
acousto-optic effect	4419	音響光学効果	casting	3215	キャストイング
active metal solder	3514	活性金属法	ceramic capacitor	2407	セラミックコンデンサ
advanced ceramics	1101	ファインセラミックス	ceramic fiber	2419	セラミックファイバ
affected layer	3414	加工変質層	ceramic filter	2421	セラミックフィルタ
agglomerated particle	3127	凝集粒子	ceramic heating resistor	2415	セラミックヒータ
alkoxide process	3106	金属アルコキシド法	ceramic sensor	2414	セラミックセンサ
alumina	2101	アルミナ	ceramic substrate	2401	セラミック基板
alumina added zirconia	2107	アルミナ添加ジルコニア	ceramic varistor	2416	セラミックバリスタ
aluminosilicate glass	2304	アルミノけい酸ガラス	cermet	1111	サーメット
aluminum nitride	2212	窒化アルミニウム	chalcogenide glass	2308	カルコゲナイドガラス
amorphous ceramics	1115	アモルファスセラミックス	chemical vapor deposition	3109	CVD法
angle of repose	4110	安息角	chemically strengthened glass	2329	イオン強化ガラス
antireflection coating	3526	反射防止コーティング	chipping	3416	チップング
apatite	2117	アパタイト	cleaning	3303	脱脂
aspect ratio	4105	アスペクト比	coating	3515	コーティング
atmosphere sintering	3315	雰囲気焼結	cold isostatic pressing	3207	CIP
[B]			composite material	1109	複合材料
barium ferrite	2127	バリウムフェライト	compressive strength	4203	圧縮強さ
barium titanate	2120	チタン酸バリウム	conductive paste	2413	導体ペースト
barrel finishing	3406	バレル加工	coprecipitation method	3104	共沈法
bending strength	4201	曲げ強さ	cordierite	2116	コーディエライト
beryllia	2111	ベリリア	cover coat	3525	カバーコート
bioactive glass	2326	生体活性ガラス	creep	4210	クリープ
bioceramics	1501	バイオセラミックス	critical current	4315	臨界電流
birefringence	4407	複屈折	critical magnetic field	4314	臨界磁場
bonded abrasive machining	3405	固定と(砥)粒加工	critical temperature	4313	臨界温度
boron nitride	2209	窒化ほう素	crystal pulling method	3117	引上げ法
borosilicate glass	2303	ほうけい酸ガラス	cubic boron nitride	2210	立方晶窒化ほう素
Bridgman method	3121	ブリッジマン法	cutting	3401	切削加工
buffer layer	1117	応力緩衝材	Czochralski method	3118	チョクラルスキ法
bulk density	4108	かさ密度	[D]		
[C]			darkening property	4414	暗化特性
calcia	2110	カルシア	devitrification	3423	失透



CENTRO CERAMICO - BOLOGNA

CENTRO DI RICERCA E SPERIMENTAZIONE

PER L'INDUSTRIA CERAMICA

40138 Bologna

14.04.1993

Via Martelli, 26 - Tel. (051) 53.40.15 - Telex 510881 CENCER I

Fax (051) 53.00.85

IVA 00947780375

Dr. D. Niesz
CENTER FOR CERAMIC RESEARCHES
RUTGERS UNIVERSITY
Piscataway, N.J.
U.S.A.

Dear Dr. Niesz,

first of all I wish to thank you for your visit at our Center: I hope that the cooperation between Emilia-Romagna Region and the State of New Jersey will result in an improvement of the cooperation between our Centers. I already applied to our Regional Department to have more information on the budget available for exchanges of students. I will keep you informed on what is going on.

As I told you, I will not attend the next I.C.F. meeting in Cincinnati. I take the liberty of sending to you my opinion: could you please submit it to the I.C.F. Board?

Up to few years ago all the major international congresses on ceramics dealt exclusively (or for not less than 90%) on advanced materials, the remaining 10% (if present) being covered by topics related to traditional ceramics. Among the reasons for this, I think that one lies in the features of the research on advanced ceramics: it is mainly basic research, carried out by Universities and Research Institutes. Therefore it is easier to have papers and speakers, with more possibilities of sharing new ideas/topics and without any problem directly linked to manufacturing or patents. In the field of traditional ceramics the research is carried out at manufacturers' request or by the plant/glazes manufacturers, often with strict requirements of confidentiality.

As a result, advanced ceramics were supported by many papers but by few industries, while on traditional ceramics the contrary occurred (few papers, but strong industries, spread out all over the world).

SIMCER can be regarded as an exception, with a ratio 1:1 of papers on traditional and advanced ceramics. Probably this is because of the interest of a strong industry active, in Italy, in the field of traditional ceramics. In any case, for a long time SIMCER has been the only one possibility of sharing the knowledge on traditional ceramics.

Now things are changing. First of all, there is a



Labs European Network of National Ceramic Laboratories - Italian Member



growing interest in the research on traditional ceramics, probably also thanks to an increased interest of the manufacturers. The technological advances and the improvement of product reliability result in the necessity of a deeper knowledge of all the aspects and topics related to traditional ceramics. Furthermore the production is no longer concentrated in few areas, but is covered by a huge number of countries: the need is felt of more possibilities of exchanges of ideas, experiences, results.

Maybe for these reasons, few years ago the American Ceramic Society started with a section on "Whiteware", that covers very interesting topics (this year it will deal with Quality/ISO 9000) with good attendance.

In my opinion time is ready for organizing separate meetings, so these two branches (traditional/advanced ceramics) can become autonomous.

As discussed in Bologna during your visit, my idea is to create a small working group on traditional ceramics within I.C.F. At present I am trying to identify experts from different geographical areas; as soon as possible I will submit a list to the Board.

This is my proposal. Of course, comments and suggestions from I.C.F. are welcome.

I thank you very much for you help and I look forward to meeting you soon.

With best regards

Prof. C. Palmonari
Director



**MINUTES OF THE ICF EXECUTIVE COMMITTEE MEETING,
HAWAIIAN VILLAGE HOTEL HONOLULU, HAWAII, USA -
SUNDAY, 7 NOVEMBER 1993**

ACTION

The Meeting was called to order by Prof. Hausner, President ICF at 2 p.m. Apart from minor corrections, the minutes of the Executive Committee Meeting held at the American Ceramics Society Conference in Cincinnati on April 18, of 1993 were approved as submitted. This was proposed by Dale Niesz and seconded by Richard Bowman. Apologies were received from Prof. Rudi Metselaar, John Lowe, Prof. Palmonari and Prof. Vincenzini. (Dr Lowe was represented by Prof. Sayer).

Report of Research Committee - Prof. Hausner

Prof. Hausner confirmed that appropriate floppies and forms have already been sent to the majority of ICF Ceramics Society Members. He hoped for collection of all data from the participating societies to be completed by the end of January 1994 with a view to presenting the final data at the next ICF meeting to be held in Florence in June 1994. Prof. Sayer raised the question that for Institutions with more than one group active in ceramics how was the information to be handled. It was confirmed that only one set of forms would be returned however it is possible to put more than one person down as the responsible person at the top of the forms. Prof. Hausner requested that assistance in completing of the forms already supplied should be provided from the ICF members to the various societies. In summary the data acquisition process was proceeding well with the view to be completed as stated before by end of January 1994.

**Report of Committee for International Meetings and Listing of
Professional Societies - Officers**

Dr Ben - Nissan unfortunately was not in attendance however Richard Bowman suggested that his involvement in this particular activity had basically been completed following the various forms that had been supplied to the individual societies. Prof. Hausner requested that those societies who

had not yet responded be contacted once again with a view to completing the information. Richard Bowman requested that if possible all the information should be stored electronically on a database to enable easy access. Dale Niesz stated that one or two changes have already been made, for instance the change in the president of the European Ceramics Society. Apart from the information provided from Germany, none of the other European Ceramics Societies had replied with data. Prof. Hausner was actioned to chase other members who have not yet responded. A copy of the forms will be attached to the minutes for reference.

HH
NAS

Report of Committee on Nomenclature

Dr Hirano stated that he was looking for three representatives each from the European ceramics society, Japan and the United States to participate on a committee with himself as chairman. The ISO would be used as the vehicle on nomenclature to avoid duplication of efforts. Dr Hirano requested that Paul Holbrook potentially supply names for the three people to represent the American Ceramics Society, however this request was passed onto Dr McClaren and Dr Dale Niesz. Dr Dale Niesz further requested that in order to clarify some of the confusion around committee members, all committee chairmen provide a list of committee members direct to the secretary for communication purposes. Prof. Hausner and Dr Schneider then carried out a fairly lengthy debate concerning the activities of the various committees associated with nomenclature. This included discussions on the activities of JIS Vamas, ASTM and the CEN. The mandate of the committee will still concentrate on advanced or fine ceramics and at this stage not address nomenclature issues within the traditional ceramics category. Dr Schneider further suggested that the ISL meeting scheduled to take place on 8 November should be heavily involved with the outputs from this committee and that participants within the ISO TC committee would be finalized at that meeting. After raising issues on whether or not the ICF should be involved in this it was suggested by Dr Niesz that the ICF's role is much more of a coordination situation. This comment was further supported by Richard Bowman.

MM/DN
COMMITTEE
CHAIRMAN

The lengthy debate concerning the activities of this committee and the potential confusion with those operations by the ISO group resulted in the following action point; Dr Schneider and Dr Hirano would consult in order to provide a brief summary of international activities of the different committees for the next meeting to be held in Florence. In the interim period Dr Hirano would concentrate on the collection of information of the various organizations but concentrate on the advanced or fine ceramics categories. Although Prof. Hausner suggested the nomenclature activity should include traditional ceramics as well as the fine ceramics group, this was considered at this stage to be an extremely large task, therefore those categories involving in the technical ceramics would be concentrated upon.

SS/SH

Report of Committee on Standardization

Dr Schneider restated the situation that ISO has now approved the formation of a fine ceramics technical committee in April. Within that group there would be eight members classified as participating members (PM) and therefore having the ability to vote and currently 23 observer status (OS) members. The members at this point are as follows:

P (Participant) - members (8)

Australia	Standards Australia (SAA)
Indonesia	Dewan Standardisasi Nasional - DSN (DSN)
Jamaica	Jamaica Bureau of Standards (JBS)
Japan	Japanese Industrial Standards Committee (JISC)
Korea, Republic of	Bureau of Standards (KBS)
Malaysia	Standards and Industrial Research Institute of Malaysia (SIRIM)
Russian Federation	Committee of the Russian Federation for Standardization, Metrology and Certification (GOST R)
USA	American National Standards Institute (ANSI)

O (Observer) - members (23)

Austria	Osterreichisches Normungsinstitut (ON)
Belgium	Institut Belge de Normalisation (IBN)
China	China State Bureau of Technical Supervision (CSBTS)
Cuba	Comite Estatal de Normalizacion (NC)
Denmark	Dansk Standard (DS)
Egypt	Egyptian Organization for Standardization and Quality Control (EOS)
France	Association Francaise de Normalisation (AFNOR)

Germany	DIN Deutsches Institut fur Normung (DIN)
Italy	Ente Nazionale Italiano di Unificazione (UNI)
Netherlands	Netherlands Normalisatie-Instituut (NNI)
New Zealand	Standards New Zealand (SNZ)
Norway	Norges Standardiseringsforbund (NSF)
Philippines	Bureau of Product Standards (BPS)
Poland	Polish Committee for Standardization (PKNMiJ)
Slovakia	(UNMS)
South Africa	South Africa Bureau of Standards (SABS)
Spain	Asociacion Espanola de Normalizacion y certificacion (AENOR)
Switzerland	Swiss Association for Standardization (SNV)
Thailand	Thai Industrial Standards Institute (TISI)
Turkey	Turk Standarlai Enstitusu (TSE)
United Kingdom	British Standards Institution (BSI)
Yugoslavia	Savezni za standardizaciju (SZS)

A considerable debate was held, particularly between Prof. Hausner and Dr Schneider, concerning the activities of the European CEN Group and that of the ISO group. Within this debate the Vienna agreement was mentioned and what the effects of that was on standardization from a global perspective.

Prof. Hausner confirmed that the European Ceramics Societies have already agreed to cooperate via CEN. Dr Schneider stated that CEN participants are involved following requests for participation to the organization. Furthermore, workable accommodation for the various groups has now been achieved. Prof. Hausner re-stated his belief that the ICF role is to provide guidance in this area promoting cooperation not conflict between the two organizations. This was further highlighted in comments by Richard Bowan regarding confusion around the testing of various ceramics materials and stated that the Cerlab operation will probably proceed to clarify methodology in this area. Although ASTM is fairly detailed, the ISO is less descriptive and therefore open to interpretation. The outcome of the debate was that Prof. Hausner will write a letter to both the CEN and ISO organizations recommending that they work together in a cooperative manner in order to solve any conflict that may arise. A further action point was identified in that Dr Schneider will report on the collaboration of the two groups and the various activities that had been agreed upon at the next ICF meeting to be

HH

SS

held in Florence.

Committee on History of Ceramics

Prof. Hausner stated that the involvement of Dr Cremer may have led to some confusion in that he would be used as an honorary chairman in view of his age. He further requested that Dr. Kingery remain as the chairman of this committee with Dr Cremer acting in an honorary capacity. Dr Kingery stated that the opportunity provided by the centenary meeting of the American Ceramic Society to be held in 1998, would be an ideal venue for this topic and bring together noted speakers or historians in the areas of ceramics, to provide an international perspective. Dr Kingery is already in contact with Langer from Germany but was not aware of the activities of Peter Fischer. It was agreed that Prof. Hausner would contact Dr Cremer to offer him honorary chairman of this committee.

HH

Committee on Traditional Ceramics

Unfortunately Prof. Palmonari was not present at the meeting so Dr Richard Bwoman discussed his views on traditional ceramics following a recent meeting held with Prof. Palmonari. Prof. Palmonari has already invited two individuals to present their views from a ceramic industrial perspective (one from Thailand and one from South America). He further believes that separate conferences should be held and not necessarily combined with the activities of other fine ceramics. This was considered to be somewhat at odds with the ICF Executive belief that these two particular categories should not be separated. Prof. Bowman re-stated the need for joint presentations in order to promote cross fertilization in the two activities. Prof. Hausner further stated that he had recently written to Prof. Palmonari restating the need for a traditional ceramic committee and the potential harmful implications to the ceramic community which may arise from separating the activities. At this point in time no response has yet been received to his letter. He further stated that this does not in anyway prevent individual meetings in the area of traditional ceramics, but that ceramic societies represent the total field of ceramics and not just one particular portion. This

view was fully supported by all members of the ICF Executive Committee. Dr Schneider mentioned that the evolution of ceramic technologies via terminology is very much an ongoing situation regarding the use of words such as advanced or traditional. He will further provide a copy of a previous statement made regarding the application of materials in similar technologies.

SS

Committee on Protocol for ICF endorsement of conference

Dr Sayer stated that a system was in place and is currently handling around three applications for endorsements per year. The use of questionnaires and guidelines being well established. Some debate then took place concerning the endorsement of regular society meetings which are held on an annual basis rather than true international meetings. Some confusion has arisen in that some ceramics societies have tended to change descriptions in an attempt to make them appear international conferences. Dr Sayer furthermore stated that some problems have been encountered around communication due to logistical reasons, but this was now resolved. Dr Niesz again requested that a list of committee members be circulated in order to help eliminate these communication problems. Prof. Hausner mentioned the recent endorsement of the South African Powder Metallurgy Association for its conference on hard and super hard materials.

Committee on global environment

Dr Udagawa mentioned the formation of the committee with the chair under Dr Yanagida and the secretary being Dr Yoshimura. He further stated that under the auspices of the Ceramic Society of Japan, they were hoping to hold the first world conference on environmental issues concerning ceramics in the fall of next year (November, 1994). This would cover both domestic and global issues regarding environmental situations. He further requested that the ICF should consider endorsement of this conference. For information, Dr Bowman mentioned the meeting to be held at Maastricht in March 1994, referred to as EN2CER, which will also concentrate on Environmental issues. It is not certain by whom this conference is being organized but TNO and possibly the European Ceramics Society were mentioned. Prof.

11

Hausner further stated that they believe the ICF could play a significant role in this particular topic and would provide as much support as was possible. Dr Bowman further more commended the activities of the Japanese via the ICF organization in their promotion of this particular field. Dr Yanagida made the request that ICF member societies should provide details of people who they could recommend who could participate on this particular committee. These recommendations should be supplied to Dr Yoshimura.

MEMBER
SOC./HY

Committee on International Accreditation and Licensing of Ceramic Engineers

Dr Sayer started the debate regarding the outputs of this particular committee as he was not entirely sure on what mandate in which he was to operate. A potential of creating a summary document concerning the activities of both undergraduate and possibly graduate programmes in ceramic engineering was also discussed with obvious emphasis on individual countries. This could be of value to both potential employees and other societies and as such Dr Sayer requested comments from the other executive committee members on the usefulness of this approach. The original intentions of this committee were discussed both by Dr Niesz and Dr McClaren with reference to the formation of the International Materials Society in the U.K. and the potential elimination of ceramic engineers being able to practice their trade without belonging to this particular professional body. Prof. Hausner raised the issue as to whether or not this committee was in fact necessary and the potential removal of this activity from the ICF. Dr Sayer said that it still would be possible to provide quantitative information but is not sure of the value of this particular data. Dr Niesz finally proposed that this committee should in fact be dropped which was supported and accepted by Prof Hausner. Output of the debate was therefore that this committee would be abandoned, but if the need should arise in the future then it would be re-instated.

Report on education and workshops

Prof. Hausner commenced the debate by stating that he believed he should recommend a new chairman for this committee provided that the need still

existed. As such he made the proposal that someone should be selected from the United States. Dr McClaren suggested that there would be an education forum to be held at the next American Ceramics Society meeting in Indianapolis and therefore recommended that participants of the ICF committee should attend this symposium. Prof. Hausner stated that several committees did exist globally concerning this topic but tended to be active purely on a domestic basis. He further described the recent Augsburg meeting where a number of talks had been presented on ceramic education and curriculum. Dr Hirano supported the view that the exchange of information from the various domestic countries could be valuable and very useful to academic institutions. The outcome of this debate was the recommendation that each participating ICF member society either holds a session to discuss these activities or where possible provide existing information. This information should initially be sent to the secretary of the ICF and would in turn be provided to the appropriate chairman at the next meeting. In the meantime Prof. Hausner would approach Dr Desmaison (France) to act as chairman. Dr Niesz further suggested that at least one person from Europe, Japan and America participate on this committee.

MEMBER
SOC.

HH

Report on Meetings Calender

Mr Stone stated that although it was possible for the CSIR as an organization to provide data on these meetings from a calender perspective, the cost associated would be of the order of \$25 000 and as such was considered to be too expensive. The net result of the debate in this area was a recommendation by Dr Bowman that information could be provided via an E-Mail situation through the American Ceramics Society whereby information could not only be sourced but also a system be developed to accept input from the individual societies. It was requested that Paul Holbrook considers establishing such a facility from an electronic prospective.

PH

Other business

In order to assist communication between societies and the individuals, Dr

Schneider suggested that people or participants of the meeting and other individual societies consider using electronic E-Mail as an appropriate vehicle. He further stated that society member rosters should include E-Mail addresses. The conclusion was that the ICF should recommend to its participating societies to adopt this communication procedure. Furthermore for societies which did not have E-Mail addresses, individuals would be nominated who could be contacted by E-Mail. This information would be circulated at the next meeting.

MEMBER
SOC.

NAS

As a point of information Prof. Hausner mentioned that he had contacted the Tanzanian Organisation and confirmed their acceptance as a member of the ICF and to the executive committee. As yet, no reply has been received.

On the issue of the constitution, Dr Niesz raised the problem that although by-laws had been suggested, no official by-laws had been accepted. Furthermore that changes need to be implemented concerning the adaptation of alterations from the previous executive meeting such as the use of 4 not 3 council members to be appointed annually to represent the ceramics community on a global prospective. It was further proposed by Dr Niesz that a change in the constitution be considered and presented to the next council meeting concerning the alterations to the executive council format to include 3 immediate presidents, as well as the 4 global representatives on the council committee and the appointed officers. This proposal was seconded by Mr Stone and approved by the full committee. It was agreed that the constitution should be updated by Mr Stone and presented at the next meeting. Dr McClaren further commended the work of both Dr Niesz and Dr Bowman for their untiring efforts in putting together the constitution and by-laws.

NAS

Next Meeting

This was confirmed to be the next Cimtec meeting to be held in Florence in June 1994 at which time the follow-up meeting and venue will be established. The meeting was formally closed by Prof. Hausner at 16h37.

ATTENDENCE LIST

ICF Executive Meeting - 7 November 1993

<u>Name</u>	<u>Affiliation</u>	<u>Fax/Telephone nos.</u>
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Richard Bowman	Australian Ceramic Society	+61 3 252-6244/+61 3 252-6021
John Wachtman	Editor, ACerS; Rutgers Univ.	908 932-5674/908 932-2724
Paul Holbrook	Ex. Dir. A.Cer.S.	614 899-6109/614 794-5855
Lyn Moore	Asst. to Ex. Dir. A.Cer.S.	" "
Hans Hausner	European Ceram. Soc.	49-30-314-21100 Fax
		49-30-314-23425 Fax
Mal McLaren	A.Cer.S.	001-908-932-5700 phone/5595 Fax
Shigekazu Udagawa	Ceramic Society of Japan	
Dick Tressler	A.Cer.S.	814 869-7961 Phone
		814 865-2917 Fax
Yoshiro Suzuki	Ceramic Soc. of Japan	81-3-3362-5714
David Kingery	Univ. of Arizona	602-621-8117/602-621-8124
Masahiro Yoshimura	Ceram. Soc. Japan	045-922-1111 ex.2323
		045-921-1015 (Fax)
David Johnson	A.Cer.S.	908-582-3906 (Voice)
		908-582-4041 (Fax)
Mike Sayer	Canadian Ceramic Society	(613) 545-2691/(613) 545-2693
Shinichi Hirano	Ceram. Soc. Japan	081 781-5111/081 52 782-5170
Hiroaki Yanagida	President, Ceramic Soc. Japan	T: 81-3-3812-2111/F:81-3-3818-0284
Sam Schneider	NIST	Tel: 301 975-5657
Nigel Stone	South African Ceramic Society	T:012-841-4265/3395 /F:012-841-4395
Paul Topolenski	Absent	
J Martin Ruiz	Absent	
John C Lowe	Represented by Sayer	
R Metselaas	Absent	

Not represented: Russia, Tanzania,
China, Argentina, Mexico

Division of Materials Science and Technology

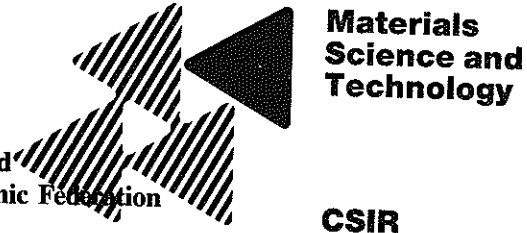
PO Box 395 Pretoria 0001 South Africa
Telephone : (012) 841-2911
Telefax : (012) 841-4395
Telex : 3-21312 SA
Telegraph : MATTEC

Direct telephone line: (012) 841-

4265

TVM/ 9400420 d.d. 07 JUNI 1994
Behand.: _____
Afdoeningsdatum: _____
Copie: _____

2 June 1994



To: **The Executive Committee, Council Members and
Committee Chairman of the International Ceramic Federation**

Hans Hausner	09 49 30 314 21100
John C Lowe	091 416 727 7036
Richard Bowman	09 61 3 252 6244
Rudi Metselaar	09 31 40 445619
Prof. X. Yao	0986 21 251 3903
Malcolm G McLaren	091 908 932 5595
Raul Topolevsky	09 54 1 772 4698
J Martin Ruiz	0952 5 264 0026
Sam Schneider	091 301 926 8349
Richard M Spriggs	091 607 871 3469
Shigekzu Udagawa	09 81 3 3362 5714
C Palmonari	0939 51 53 00 85
Dr Michael Sayer	001 613 545 6463
Pietro Vincenzini	0939 546 664 138
Dr Yanagida	09 81 3 3818 0284
Dr Hirano	09 81 52 782 5170
Prof. Shevchenko	097 095 3580 296250

President, Tanzania Ceramic Association (Telex 42124)
Dr Babini,
Dr Kim

From: **N A Stone, Secretary**

Please find attached the agenda for the next meeting of the ICF Executive and full Council meeting. In addition, I have attached the standard form for updating society and officer details in order to update the ICF data base. If possible could you please send the details by return fax directly to me. In addition, the revised constitution and by-laws will be posted to you under separate cover.

Finally, a request was made in the minutes of the last meeting held in Hawaii during November to supply society details linked to an E-Mail address. Todate I have received no such information and would appreciate you giving some attention to this topic.

Best Regards

P.P. Nigel Stone
Secretary
International Ceramic Federation

c.c.	Paul Holbrook	091 614 794 5852
	David Kingery	091 602 621 8117
	Dong-Sheng Yan	0986 21 251 3903
	Dr Dale Niesz	908 932 3258
	Dr Suzuki	0981 3 3362 5714

h:\home\eng_cera\ekerr\icf\council



Division of Materials Science and Technology

PO Box 395 Pretoria 0001 South Africa

Telephone : (012) 841-2911

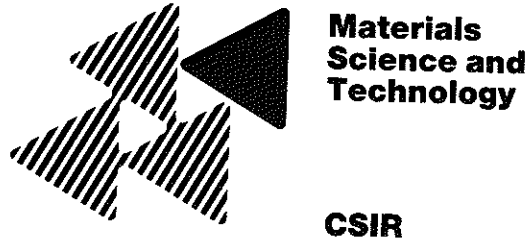
Telefax : (012) 841-4395

Telex : 3-21312 SA

Telegraph : MATTEC

Direct telephone line: (012) 841- 4265

1 June 1994



Re: Agenda of the ICF Executive and Council meeting to be held during the 8th Cimtec Conference, Florence, Italy at the Congress Centre, Room 3D on Saturday, 2 July 1994 at 14h30.

- | | |
|--|---------------|
| 1. Welcome | Prof Hausner |
| 2. Acceptance of previous minutes | N A Stone |
| 3. Research Committee | Prof Hausner |
| 4. Listings of Professional Societies/Officers | N A Stone |
| 5. Nomenclature Committee | Dr Hirano |
| 6. Standardization | Dr Schneider |
| 7. History of Ceramics | Dr MacLaren |
| 8. Traditional Ceramics | Dr Palmonari |
| 9. Protocol for ICF Endorsement of Conferences | Dr Sayer |
| 10. Global Environment | Dr Yanagida |
| 11. Education & Workshops | Prof. Hausner |
| 12. Meetings Calender | Dr MacLaren |
| 13. E-Mail Communications | N A Stone |
| 14. ICF Constitution and by-laws | N A Stone |
| 15. Other Business | |
| 16. Future Meetings | |

In the event of further communication, please reply to:

Mr N A Stone, CSIR, Division of Materials Science and Technology, P O Box 395, Pretoria, 0001, South Africa
Telephone: (012) 841 3395/4265 / Telefax: (012) 841 4395 / E-Mail: nstone@mattek.csir.co.za

June 27, 1994

Report of Activity ICF Committee on Global Environment

Chairman: H. Yanagida (Japan)

Secretary: M. Yoshimura (Japan)

1. According to the agreement in the Executive Committee Meeting on November 7, 1993 (Honolulu), the Ceramic Society of Japan and ICF organize the International Symposium on Environmental Issues of Ceramics, October 19 - 20, 1994, Sapporo, Japan, in conjugating with the Annual Fall Meeting of the Ceramic Society of Japan. [See the circular and the tentative program attached.] Late news are still acceptable until July 15 or later. Participation of and recommendation to attend/present a paper in the Symposium by ICF members will be appreciated very much.

2. At the Executive Committee Meeting (Nov. 7, 1993, Honolulu), ICF-Committee on Global Environment has been established (Chairman: H. Yanagida, Secretary: M. Yoshimura). Here we would like to nominate following ICF members as the Committee members:

Chairman: H. Yanagida (Japan)

Members: R. Bowman (Australia)

R. J. Brook (U.K.)

H. Hausner (Germany)

S. Hirano (Japan)

W. P. Holbrook (U.K.)

R. Metselaar (The Netherlands)

N. A. Stone (South Africa)

Y. Tretyakov (Russia)

S. Udagawa (Japan)

D. S. Yan (chine)

Secretary: M. Yoshimura (Japan)

They are mostly the international advisory or organizing committee members of the International Symposium on the Environmental Issues of Ceramics. A few members may be added to balance and harmonize the international activities.

The First Announcement and Call for Papers

**International Symposium
on
Environmental Issues of Ceramics**

October 19 and 20, 1994
Sapporo, Japan

Organized by
The Ceramic Society of Japan,
International Ceramic Federation
Science Council of Japan, Liaison Committee for Materials Science and Engineering

Environmental Problems are serious and urgent for human beings and other lives. Since the total energy consumption has been increased drastically with an increase of global population, it has led to environmental degradation of the earth which is a closed system with limited capacity. The problem concerns with many factors including human history, culture, civilization, behavior, activity, or existence itself, therefore it should be difficult to find out ultimate solutions. We, the members of the ceramic community, must consider these problem from the ceramic point of view.

1. Environmentally Benign Synthesis and Processing of Ceramics
2. Environmentally Compatible Ceramics
3. Environmental and Waste Management in Ceramic Industry (Air Emissions, SO_x, NO_x, CO₂, Ceramics and Glass Fibers, Cr-disposal Waste Management, etc.)
4. Environmental Solutions using Ceramics
5. Recycle and Recycable Ceramics
6. Biocompatible or Biohazardous Ceramics
7. Methods for Estimating Health Effects
8. Waste Form Degradaton (Thermal, Chemical, Irradiation Damage)
9. Environmental Issues on Mining, Transportation, Storage, Up-Grading
Fabrication of Law Materials, and Forming, Shaping forming/Sintering,
Machining, Joining of Ceramics
10. Environmental Issues on Storage, Usage, Disposal of Ceramics
11. Environmental Conscious Approaches to Fabricate Ceramics
12. Optimization and Minimization of Waste Production
13. Environmentally Intelligent/Smart Processing and Materials
14. etc.

CALL FOR PAPERS:

Those who wish to make presentations are invited to submit two copies of typed camera-ready abstract (single space typed, one page 16 x 24 cm, beginning with the title, author(s)' name, affiliation and address) in English to the secretariat by, July 15, 1994.

Proceedings will be published after the symposium. Authors who would like to submit the paper for publication are requested to submit full manuscript to the secretariat by October 20, 1994.

セラミックスと環境に関する国際会議

1994年10月19日(水)、20日(木)、札幌、北海道大学
—日本セラミックス協会秋季大会と併せて開催—

主催 日本セラミックス協会
国際セラミック連盟
日本学術会議材料研究連絡委員会

International Symposium on Environmental Issues of Ceramics

October 19 and 20, 1994
Sapporo, Japan

プログラム (追加および変更あり)
PROGRAM (Tentative)

October 19 (Wednesday)

- 10:00 Opening
- 10:30 I-1 (invited)
Environmental Scenario for Ceramics (tentative)
Kiyotaka Wasa
Research Institute of Innovative Technology for the Earth, Japan
- 11:15 I-2 (invited)
Industrial Ecology: A Key to Green Processing and Green Design (tentative)
Robert A. Laudise
AT & T Bell Laboratories, U.S.A.
- 12:00 Lunch
- 13:00 I-3 (invited)
Environmental Benign Microwave-Hydrothermal Processing for Synthesis of Ceramic Powders
Sridhar Komarneni
The Pennsylvania State University, U.S.A.

14:15 I-10 (invited)
Water and Ceramics (tentative)
Junko Nakanishi, University of Tokyo, Japan

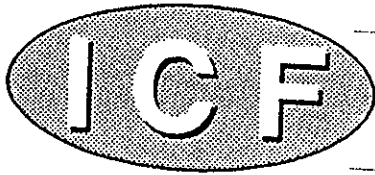
15:00 Poster Session (P-21 ~)

17:00 Closing

Poster Session

- P-1 **Microbial Deterioration of Glasses**
R. Weissmann and R. Drewello
Universitat Erlangen-Nurnberg, Germany
- P-2 **Synthesis of Hydrotalcite with High Layer Charge for CO₂ Adsorbent**
T. Kodama, N. Hasegawa, M. Tsuji, and Y. Tamaura
Tokyo Institute of Technology, Japan
- P-3 **Effect of Platinum Impregnation onto Magnetite or Ni(II)-Ferrite Toward the Methanation of CO₂**
T. Yoshida, H. Kato, M. Tsuji, and Y. Tamaura
Tokyo Institute of Technology, Japan
- P-4 **Decomposition of CO₂ with Oxygen-Deficient Spinel Ferrites**
Y. Wada, M. Tabata, M. Tsuji, and Y. Tamaura
Tokyo Institute of Technology, Japan
- P-5 **The Ambivalent Role of Microorganisms with Regard to Ceramic Processing**
H. Mortel and K. Heimstadt
Universitat Erlangen-Nurnberg, Germany
- P-6 **Formation of Silicon Titanium Carbides from Metal Alkoxide Treated Organic Resin**
M. Narisawa, M. Takamura, M. Iguchi, T. Shimoo, K. Okamura, and Y. Kurachi*
University of Osaka Prefecture, Japan
*KONIKA Corporation, Japan
- P-7 ***In Vitro* Mineralization in Bovine Tooth Germ Cell Cultured with Sintered Hydroxyapatite**
M. Akao, M. Sakatsume, H. Aoki, T. Takagi*, and S. Sasaki*
Tokyo Medical and Dental University, Japan
*Faculty of Dentistry, Tokyo Medical and Dental University, Japan

- P-17 **Utilization of Glass Waste as the Aggregate of Cement Paste**
T. Nishikawa, M. Takatsu, and M. Daimon*
Nagoya Institute of Technology, Japan
*Tokyo Institute of Technology, Japan
- P-18 **Regenerating Technique of Mn-Zn Ferrite from Dry Battery Waste.**
S. Nagata
Sony Corporation Research Center, Japan
- P-19 **Reversible Absorption of Nitrogen Oxides in Mn-Zr Oxide Ceramics**
K. Eguchi, M. Watabe, S. Ogata, and H. Arai
Kyushu University, Japan
- P-20 **Ceramic Coating of Organic Polymers at the Normal Temperature and Pressure**
T. Kokubo, M. Tanahashi, K. Kishimoto, and F. Miyaji
Kyoto University, Japan
- P-21 **Improvement of Biocompatibility of Ti Metal via Formation of Amorphous Alkali Titanate Layer**
F. Miyaji, Xu Zhang, T. Kokubo, T. Kitsugi, and T. Nakamura
Kyoto University, Japan
- P-22 **Thermal Shock Resistance and Dielectric Properties of Shirasu Balloon / Ferroelectric Composite**
Y. Hirata, K. Hamasaki, and Y. Fukushige
Kagoshima University, Japan
- P-23 **Hydroxyapatite Whiskers with Controlled Morphology and Stoichiometry**
W. Suchanek, H. Suda, M. Yashima, M. Kakihana, and M. Yoshimura
Tokyo Institute of Technology, Japan
- P-24 **Synthesis and Characterization of High Purity BaTiO₃ by Polymerized Complex Method**
M. Arima, M. Kakihana, Y. Nakamura*, M. Yashima, and M. Yoshimura
Tokyo Institute of Technology, Japan
- P-25 **Fabrication of Intelligent Materials with Symmetric Gradient Structures by Energy-Saving SHS/HIP Process**
Y. Miyamoto, K. Tanihata, Z. Li, and Y. S.Kang
Osaka University, Japan



INTERNATIONAL CERAMIC FEDERATION

23 June 1994

Re: Agenda of the ICF Executive and Council meeting to be held during the 8th Cimtec Conference, Florence, Italy at the Congress Centre, Room 3D on Saturday, 2 July 1994 at 14h30.

- | | |
|--|---------------|
| 1. Welcome | |
| 2. ✓ Acceptance of previous minutes | Prof Hausner |
| 3. ✓ Research Committee | N A Stone |
| 4. ✓ Listings of Professional Societies/Officers | Prof Hausner |
| 5. ✓ VISO TC 206 - ICF Liaison | N A Stone |
| 6. ✓ Standardization | Dr Schneider |
| 7. ✓ History of Ceramics | Dr Schneider |
| 8. ✓ Traditional Ceramics | Dr MacLaren |
| 9. ✓ Protocol for ICF Endorsement of Conferences | Dr Palmonari |
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In the event of further communication, please reply to:

Mr N A Stone, CSIR, Division of Materials Science and Technology, P O Box 395, Pretoria, 0001, South Africa
Telephone: (012) 841 3395/4265 / Telefax: (012) 841 4395 / E-Mail: nstone@mattek.csir.co.za

24 JUNI 1994



ITALIAN CERAMIC CENTER

Via Martelli 26
40138 BOLOGNA (Italy)
Tel. (051) 534015
Tlx 510891 CENCER I
Fax +39-51-530085

DATE : June 23, 1994

NUMBER OF COPIES
(this included) 06

TO

FIRM INTERNATIONAL CERAMIC FEDERATION
Telefax 0049 - 30 - 314 21100
Office
Mr. Prof. H. HAUSNER

FROM

OFFICE
Mr. Prof. C. PALMONARI

NOTES:

Dear Prof. Hausner,

As I informed you, the Working Group "Traditional Ceramics", composed by Mr. F. Arango, Mr. J.E. Enrique, Mr. D. Mustafa Mansur and me, held its meeting in Bologna on May 26, 1994.

As a result the enclosed document was approved.

I would ask you to circulate this document during the next meeting of I.C.F. in Florence, which I plan to attend.

With best regards

Prof. C. Palmnari

If you have any questions with the transmission, please call: +39-51-534015



CENTRO CERAMICO - BOLOGNA

CENTRO DI RICERCA E SPERIMENTAZIONE
PER L'INDUSTRIA CERAMICA

40138 Bologna (Italy)
Via Martelli, 26 - Tel. (051) 53.40.15 - Fax (051) 53.00.85
IVA 00947780375

23 GIU. 1994

INTERNATIONAL CERAMIC FEDERATION

WORKING GROUP "TRADITIONAL CERAMICS":

Mr. Palmonari C. (Coordinator, Italy),
Mr. Arango F. (Colombia)
Mr. Enrique J.E. (Spain),
Mr. Mustafa Mansur D. (Malaysia).

The Working Group held its first meeting in Bologna (Italy) on May 26, 1994, with the following agenda:

- 1 - Discussion on the industrial and research activities in the field of traditional ceramics;
- 2 - Proposals for the ICF Board.

Agenda 1

The Working Group notes that currently many congresses are organized on topics related to ceramics. Many of them are general congresses, that cover the whole field (for example, the Annual Meeting of the American Ceramic Society, the Meeting of the European Ceramic Society, etc.). Some of them are focused on specific subjects. In all these cultural events we notice that there is a strong predominance of advanced ceramics. As a result:



- in the general congresses many of the papers are presented on basic research and only few papers on traditional ceramics and applied/technological research;
- there are very small number of congresses/meetings specially devoted to traditional ceramics and related topics.

This negative situation in turn has an influence also on the exhibitions that sometime take place during the congresses. Due to the above mentioned trend, only suppliers of machinery for advanced materials are interested in these exhibitions, while manufacturers of plants/equipments for traditional ceramics do not make their presence. It is worthwhile to note that many a time the suppliers manufacture products that can be used just for basic research.

As a result, researchers and technicians involved in traditional ceramics are not attending meetings, congresses and exhibitions, because there is no space provided for topics they are directly involved in. This seems to be dangerous because it results in a lack of cultural growth for this sector.

On the other hand the Working Group outlines that:

- as it comes out from a study made by CERLABS - European Network of National Ceramic Laboratories, traditional ceramics cover the largest part of the European production of ceramic materials as regards number of companies, sales, numbers employed (see the enclosed diagram); complete data on the world situation are not yet available, but the enclosed figures are deemed to be sufficiently representative for Asia too;
- the production of traditional ceramics has reached a high level of technological development: in other words,

traditional ceramics are manufactured with advanced technology;

- manufacturers both of products and of plants/equipments are interested in applied research and share of experience as a basic tool to improve quality, reliability, productivity and competitiveness.

Unfortunately, the cultural events are totally devoted to advanced materials and therefore closing the doors to traditional ceramic topics. This in turn results in a lack of attendance to congresses by everybody involved in traditional ceramics, thus creating a vicious circle: decrease of attendance, therefore decrease of interest (at least because there is no possibility of any exchange of experience), therefore further decrease of attendance.

Agenda 2

The Working Group:

- recalls that ICF has the duty of giving cultural guidelines in the sector of ceramics;
- notes that today industrial production of many products considered "Advanced Ceramics" has been in effect for many years and could be included in the Traditional Ceramics field;
- notes also that, even if the fundamentals of traditional and advanced ceramics are the same, technologies and utilizations are quite different.

Therefore, on the basis of the discussion held at point 1 of the agenda, the Working Group suggest ICF:

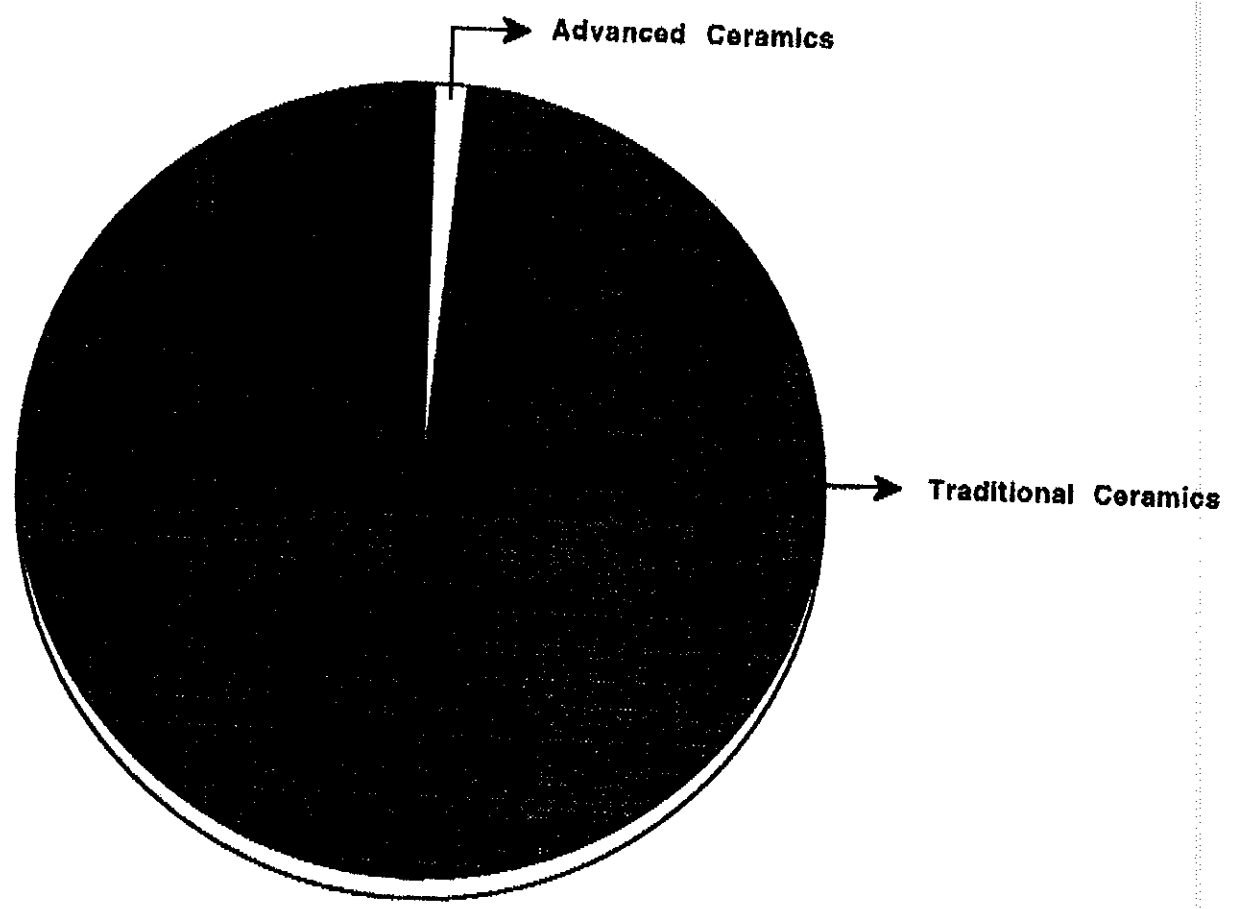
- to recommend that cultural activities shall be promoted to give proper evidence to traditional ceramics; it is deemed

convenient to have separate congresses on the different sectors;

- to foster the exchange of experience especially in fields such as environmental issues, technological innovation, quality and energy management.

This will result in a more effective participation both of researchers and technicians and of exhibitors; manufacturers too are more interested in cultural events that may give answers or inputs for their real needs.

Furthermore, governmental financial support is at present available in various countries for R & D projects: it is easier to get funding if possibilities are created to put together researchers, technicians and manufacturers in order share the experience and to set up research programs that are not a philosophical exercise, but result in practical applications for everyone interested in ceramics: scientists and researchers, technicians and manufacturers, consumers and end-users.



Europe Sales