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## feature articles



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### Imerys: Unlocking the sustainable potential of minerals

*In an interview, Imerys global sustainability director Nancy Bunt discusses the work Imerys is doing to sustainably manage the consumption of minerals and how this work applies to the refractories industry.*

by Eileen De Guire



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### Structure and thermodynamics of oxides/carbides/nitrides/borides at high temperatures

*The 2<sup>nd</sup> Structure and Thermodynamics of Oxides/carbides/nitrides/borides at High Temperature (STOHT2) conference took place at Arizona State University from Oct. 4–7, 2022. This article provides a snapshot of the meeting, including a look at currently used experimental and computational techniques, their key limitations, and possible future directions for research.*

by Qi-Jun Hong, Sergey V. Ushakov, Kristina Lilova, Alexandra Navrotsky, and Scott J. McCormack



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### Value-add of thermal energy storage systems in the ceramics industry

*Kraftblock (Sulzbach, Germany) has developed a widely applicable high-temperature thermal energy storage system that could help reduce emissions in the ceramics industry.*

by Martin Schichtel

## Cover image

Solar panels on the rehabilitated Par Moor Blackpool kaolin mining site in Cornwall, United Kingdom. Multinational group Imerys S.A. has numerous ongoing initiatives to sustainably manage the consumption of minerals. Credit: Philippe Zamora and Dominique Lecuire

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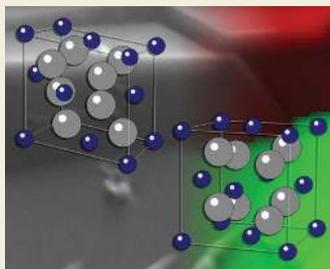


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As seen on *Ceramic Tech Today*...



Credit: Edward Pang, Massachusetts Institute of Technology

## Extensive modeling leads to new shape-memory zirconia with properties on par with shape-memory alloys

Even when a shape-memory ceramic's lattice compatibility is improved, it still often experiences cracking after just a few dozen transformation cycles. Researchers at the Massachusetts Institute of Technology improved the cyclability of shape-memory zirconia ceramics with the help of a multimode modeling approach.

Read more at [www.ceramics.org/shape-memory-ceramics](http://www.ceramics.org/shape-memory-ceramics)

Also see our ACerS journals...

Investigation of fracture behavior of typical refractory materials up to service temperatures

By E. Brochen, C. Dannert, J. Paul, and O. Krause

*International Journal of Ceramic Engineering & Science*

Influence of  $Ti_3AlC_2$  addition on water vapor resistance of low-carbon  $Al_2O_3-C$  refractories

By G. Liu, N. Liao, Y. Li, et al.

*International Journal of Applied Ceramic Technology*

Determination of temperature dependent static Young's modulus of refractory ceramics using RUL tests

By M. Henze, W. Reichert, T. Tonnesen, et al.

*International Journal of Ceramic Engineering & Science*

A replacement of traditional insulation refractory brick by a waste-derived lightweight refractory castable

By Sk. S. Hossain, C. J. Bae, and P. K. Roy

*International Journal of Applied Ceramic Technology*



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