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Ceramic matrix composites taking flight at GE aviation

The holy grail for jet engines is efficiency, and the improved high-temperature capability of CMC systems is giving General Electric a great advantage.

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Nonoxide polymer-derived CMCs for "super" turbines

The melting point of single-crystal blades limits further advancement in operating temperature of gas turbines with metallic materials. Ceramics, which have much higher melting points, hold the promise for future "super" turbines.

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Taking off: Advanced materials contribute to the evolution of electrified aircraft

Commercial electrified aircraft are expected to take off within the next decade—and advanced materials are playing an increasingly critical role in solving key technical challenges that will push the boundaries even higher.

by Ajay Misra

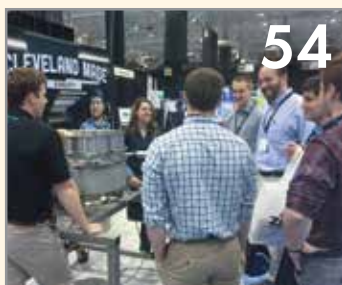


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Environmental barrier coatings enhance performance of SiC/SiC ceramic matrix composites

Environmental barrier coatings protect the structural integrity and mechanical strength of ceramic matrix composites, allowing these revolutionary materials to boost gas turbine engine efficiency.

by Kang N. Lee and Mark van Roode



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Ceramics Expo 2019 I-X Center in Cleveland—April 29 - May 1

Channeling ceramic enterprise and expertise

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Credit: Jonathan Ajo-Franklin, Berkeley Lab

Optical fibers shake up earthquake monitoring systems

A team of Lawrence Berkeley National Laboratory researchers showed "dark fibers," unused fiber-optic cables that crisscross the United States underground, could be coopted to serve as sensors in earthquake monitoring systems.

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Composite reinforcement: Recent development of continuous glass fibers

By H. Li, T. Charpentier, J. Du, and S. Vennam

International Journal of Applied Glass Science

High-performance infrared emissivity of micro-arc oxidation coatings formed on titanium alloy for aerospace applications

By H. Tang, W. Tao, H. Wang, et al.

International Journal of Applied Ceramic Technology

Mechanical behavior of SiC joints brazed using an active Ag-Cu-In-Ti braze at elevated temperatures

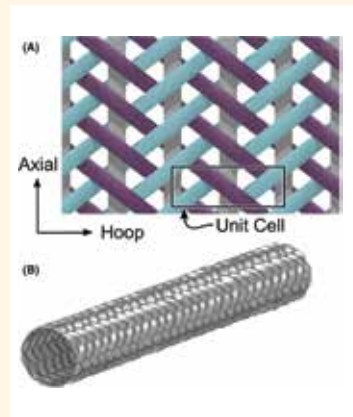
By F. Moszner, G. Mata-Osoro, M. Chiodi, et al.

International Journal of Applied Ceramic Technology

Scalable measurements of tow architecture variability in braided ceramic composite tubes

By F. M. Heim, B. P. Croom, C. Bumgardner, and X. Li

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