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MRS Bulletin

September 2014 Vol. 39 No. 9
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Low-temperature solid-oxide fuel cells

ALSO IN THIS ISSUE
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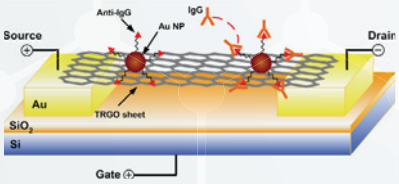

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Junhong Chen, Ph.D.
Professor of Mechanical Engineering
and Materials Science
University of Wisconsin-Milwaukee

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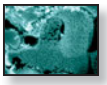

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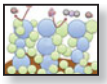

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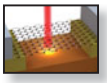

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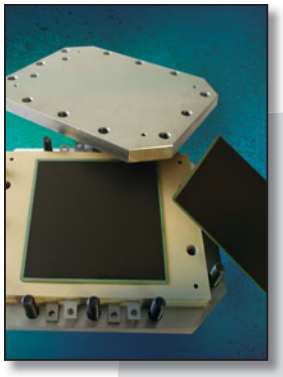

ON THE COVER

Low-temperature solid-oxide fuel cells. Lower temperature operation dramatically expands the applications of solid-oxide fuel cells (SOFCs) and provides the opportunity to incorporate a wider variety of materials in SOFC power generation systems with greater reliability and lower cost. This issue of *MRS Bulletin* highlights the potential of and progress toward operating SOFCs at low temperatures. The articles describe materials development and processing, the development of highly active electrodes and their 3D microstructural characterization, as well as the use of proton-conducting electrolytes. The cover shows a low-temperature SOFC stack that is being commercialized by Redox Power Systems. The stack is built from a series of individual SOFCs with an interconnect and seal between each cell. A major advantage of the lower temperature operation is the ability to use conventional stainless steels for the interconnects and simple gasket materials for sealing. See the technical theme that begins on page **773**.

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The Materials Research Society (MRS), a not-for-profit scientific association founded in 1973 and headquartered in Warrendale, Pennsylvania, USA, promotes interdisciplinary materials research. Today, MRS is a growing, vibrant, member-driven organization of over 16,000 materials researchers spanning over 80 countries, from academia, industry, and government, and a recognized leader in the advancement of interdisciplinary materials research.

The Society's interdisciplinary approach differs from that of single-discipline professional societies because it promotes information exchange across many scientific and technical fields touching materials development. MRS conducts three major international annual meetings encompassing approximately 125 topical symposia, and also sponsors numerous single-topic scientific meetings. The Society recognizes professional and technical excellence and fosters technical interaction through University Chapters. In the international arena, MRS implements bilateral projects with partner organizations to benefit the worldwide materials community. The Materials Research Society Foundation helps the Society advance its mission by supporting various projects and initiatives.

MRS publishes *MRS Bulletin, MRS Communications,* the *MRS Online Proceedings Library, Journal of Materials Research, MRS Energy & Sustainability,* and books and textbooks with its publishing partner, Cambridge University Press.

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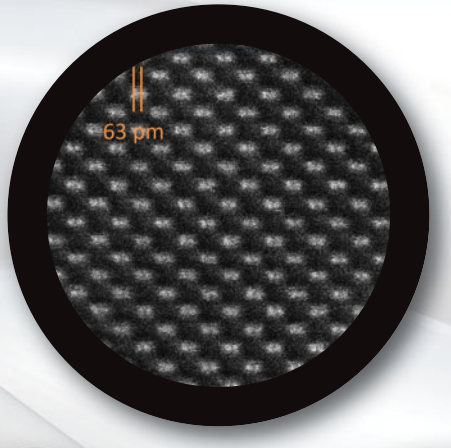

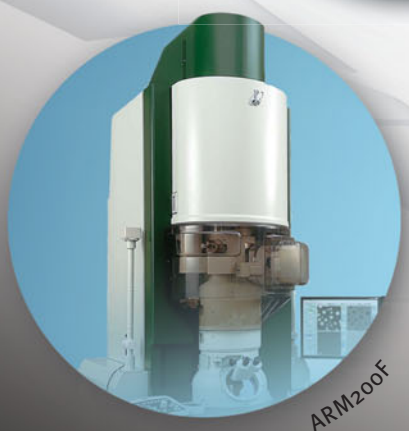
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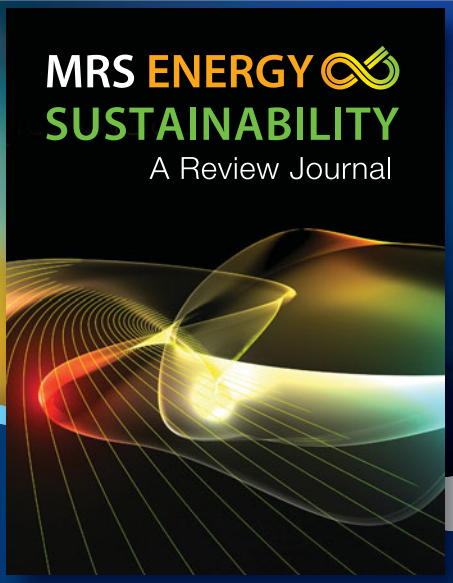

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