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MRS Bulletin

September 2016 Vol. 41 No. 9
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Hierarchical materials

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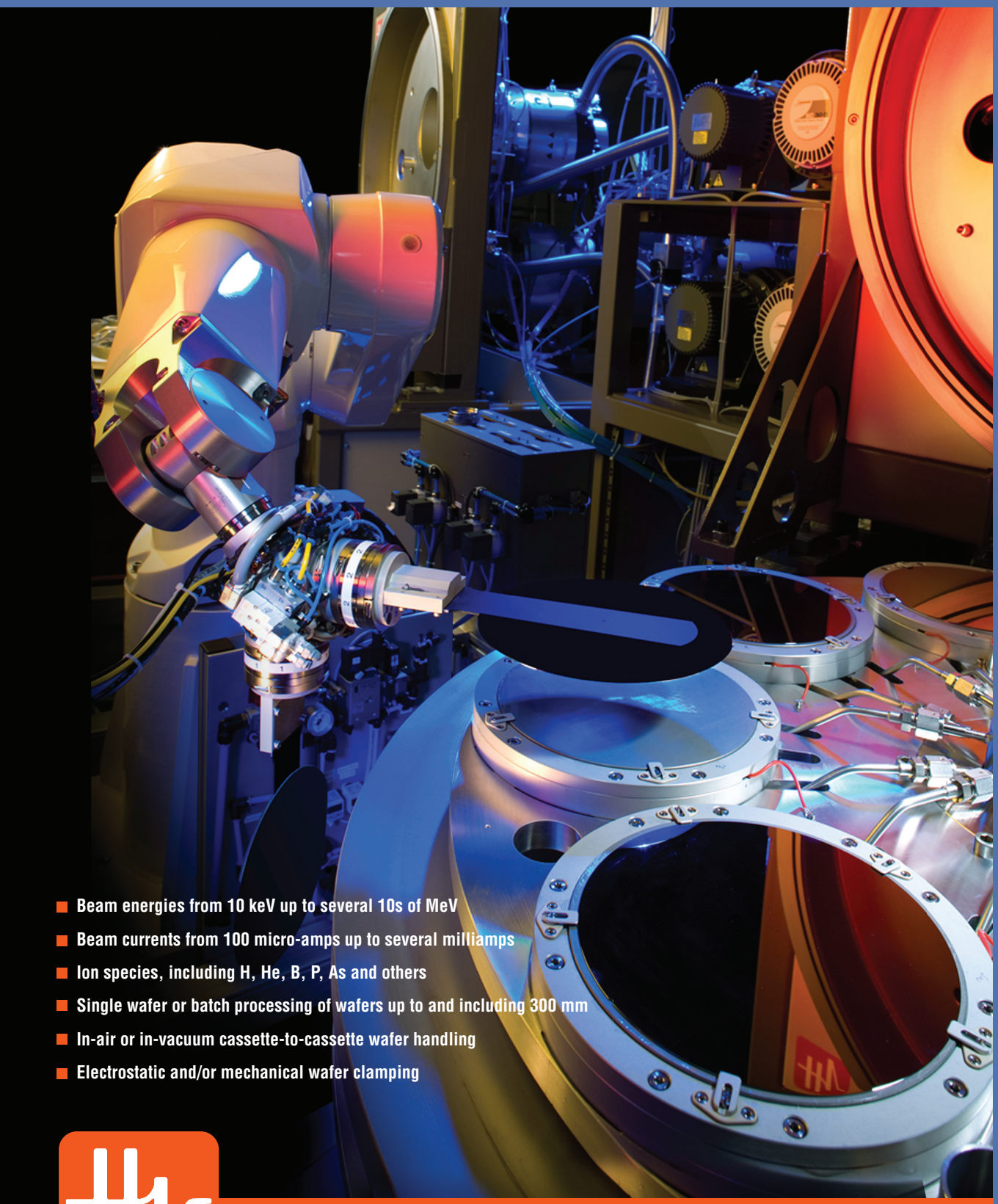

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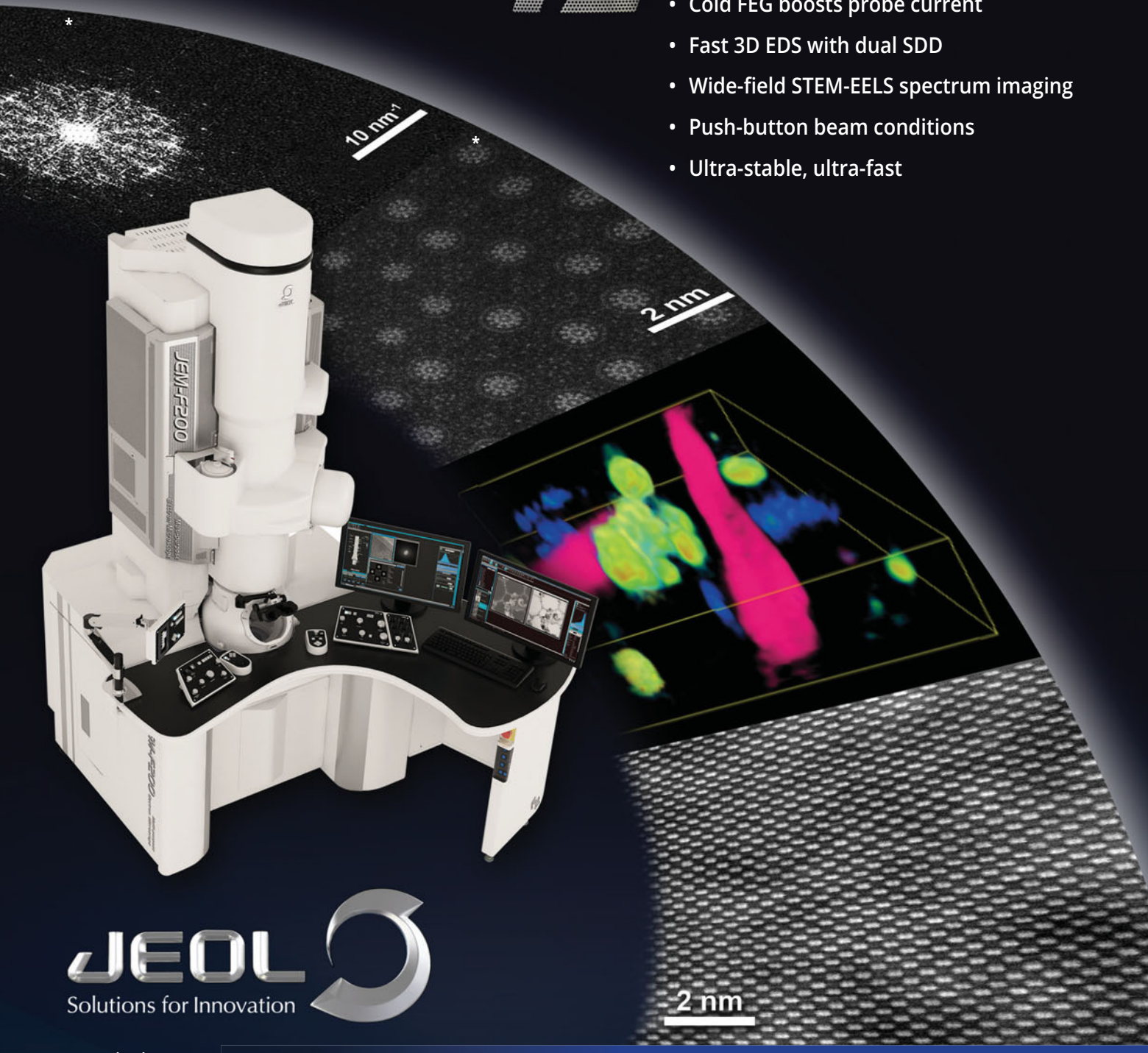

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***STEM-HAADF image of Quasicrystal** • Courtesy of Professor Emeritus K. Hiraga – Tohoku University

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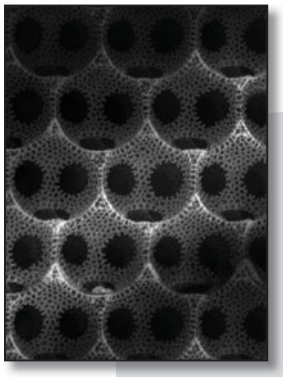

ON THE COVER

Hierarchical materials. Materials with hierarchical structures represent a promising approach to enhance performance far beyond what can be achieved using composite structures, to add new functionalities and to adapt to special requirements. This issue of *MRS Bulletin* provides an overview of aspects related to the analysis and development of hierarchical materials. The cover shows an ordered multimodal porous carbon formed through sacrificial replication of a preformed multimodal colloidal crystalline template. The hierarchical pore topology, comprised of three-dimensionally ordered macropores with ordered mesopores embedded within the walls, offers large surface area and interconnected pore volume that have been shown to facilitate and enhance mass transport and charge transfer in Li-ion battery anode applications. Image courtesy of the Royal Society of Chemistry (B. Fang, M.-S. Kim, J.H. Kim, S. Lim, J.-S. Yu, *J. Mater. Chem.* **20**, 10253 [2010]). See the technical theme that begins on page **661**.

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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 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.

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