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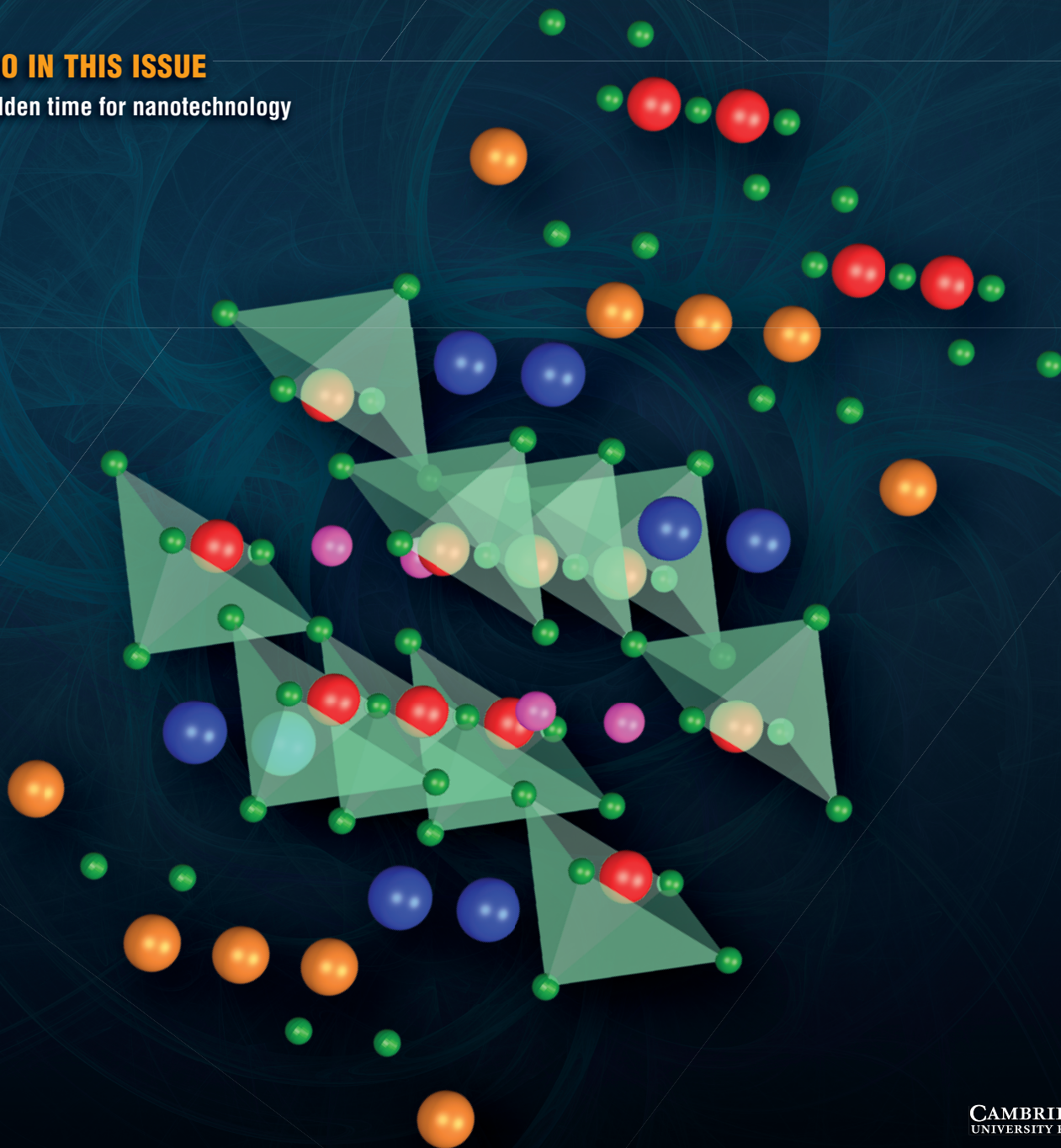
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Emergent quantum materials

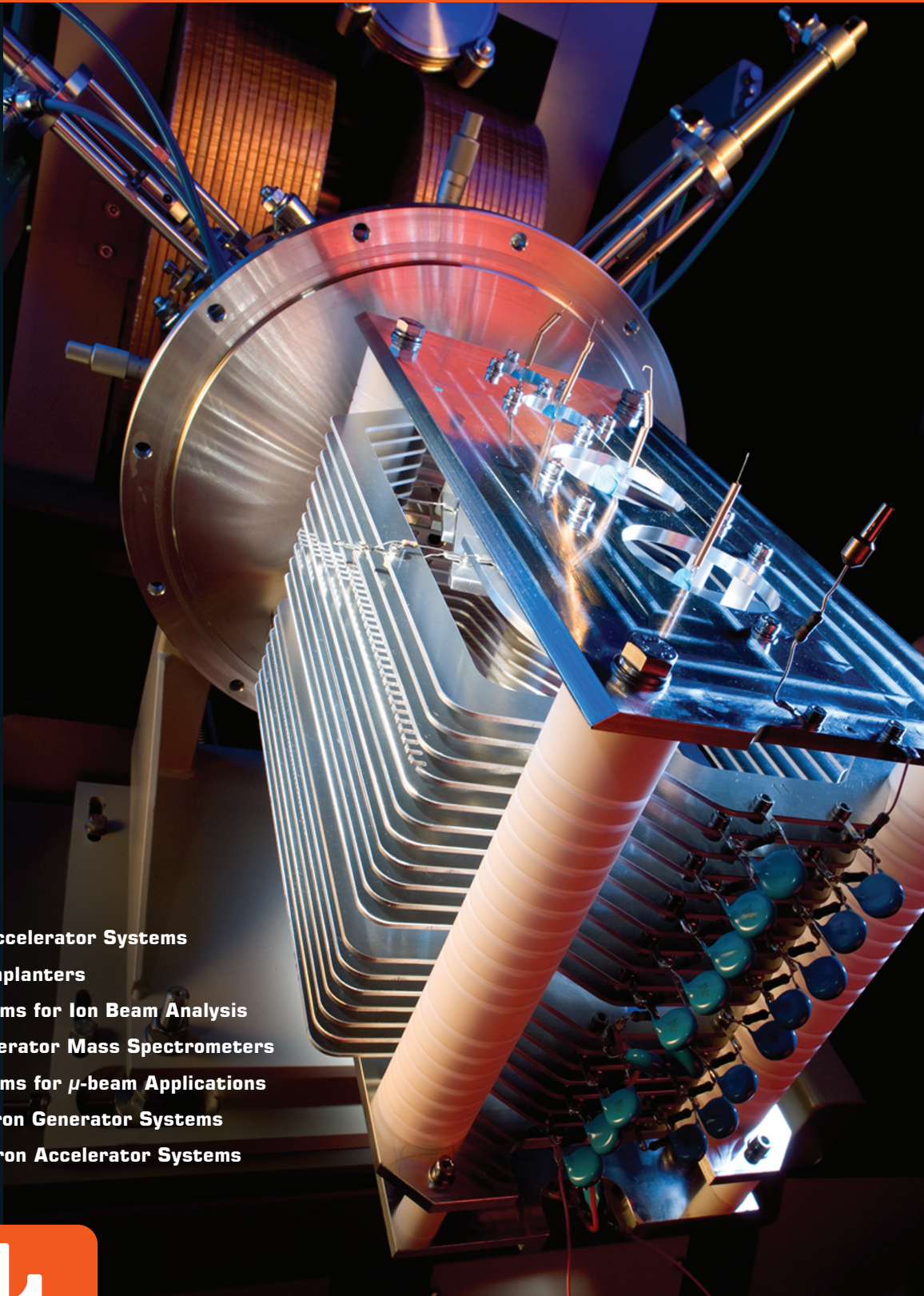
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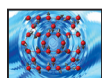
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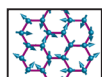
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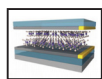
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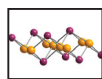
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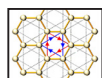
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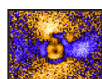
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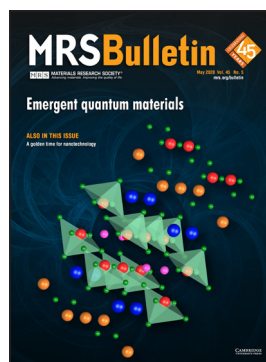


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ON THE COVER

Emergent quantum materials. The properties of quantum materials are principally defined by quantum mechanical effects at macroscopic length scales. These materials exhibit phenomena and functionalities not expected from classical physics. While quantum materials has been a topical area of modern materials science for decades, today it is at the center stage of technologies ranging from electronics, photonics, energy, defense, and sensing to environmental and biomedical applications, and, in particular, quantum information science and technology. This issue of *MRS Bulletin* presents important developments in emergent quantum materials at the intersection of materials science and condensed-matter physics. The cover provides a schematic view of monolayer CuO_2 films on a Bi-2212 substrate. See the technical theme that begins on p. 340.



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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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