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MRS Bulletin

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Biological interactions of oxide nanoparticles: The good and the evil

ALSO IN THIS ISSUE
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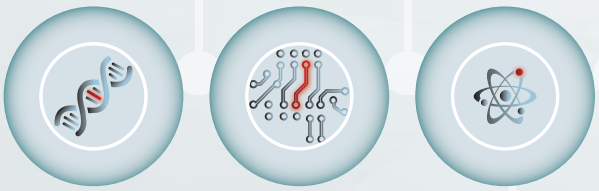

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BIOLOGICAL INTERACTIONS OF OXIDE NANOPARTICLES: THE GOOD AND THE EVIL

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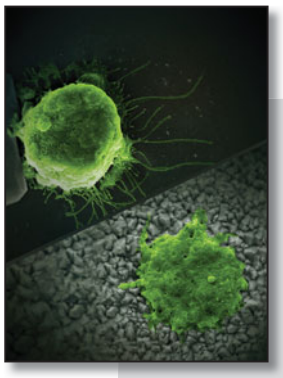

ON THE COVER

Biological interactions of oxide nanoparticles: The good and the evil. The biological effects of engineered nanoparticles are of great interest, due to their therapeutic and diagnostic potential for drug delivery and controlled release. However, this also raises unprecedented safety issues. The articles in this issue of *MRS Bulletin* focus on the prospective use of metal oxide nanoparticles in nanomedicine, which promises great advances in anticancer and antioxidant therapies. The potential hazards of the use of these nanoparticles are also discussed. On the cover are examples of titania (TiO_2) films with two different phase compositions and surface topographies that show different bioresponses, as manifested in different cell growth patterns and proliferation behavior. Pure nanocrystalline TiO_2 surfaces (top) were found to be highly bioactive, while TiO_2 films having residual chloride contents significantly inhibited cell growth, leading to apoptosis or cell death (bottom). See the technical theme that begins on page **949**.

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EDITORIAL OFFICE 506 Keystone Drive, Warrendale, PA 15086-7573 USA
Bulletin@mrs.org tel 724.779.2747 fax 724.779.8313 www.mrs.org

About the Materials Research Society

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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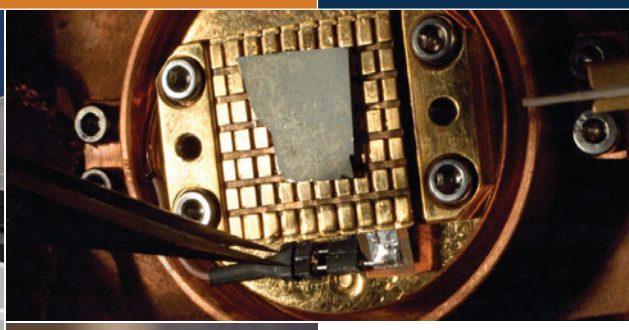

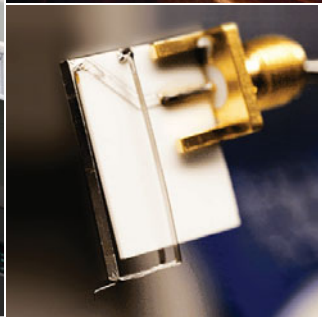

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