

ZERNIKE INSTITUTE COLLOQUIUM

Thursday, November 5th, 2009

16:00h, Lecture Hall: 5111.0080

Coffee and cakes from 15:30h

Physics and Chemistry of Superconductivity in the Iron Age

David J. Singh
Materials Science and Technology Division
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6114, USA



The twenty year reign of copper oxide compounds (cuprates) as the only superconductors above 50 K was broken in 2008 with the discovery of high temperature superconductivity in a diverse family of compounds containing iron and pnictogens or chalcogens. The question immediately raised was how is it that these iron compounds mimic the physics of cuprates? Although some similarities were quickly identified, such as the presence of antiferromagnetism in the phase diagrams, the answer it seems it that the connections are subtle, and that the physics of iron compounds is in many respects very different from that realized in cuprates. Perhaps they do not mimic cuprates at all, but rather offer an entirely new route to high temperature superconductivity. This talk is an overview emphasizing the superconductivity in relation to the chemistry, electronic structure and magnetism of these compounds.

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