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M&S Colloquium

Colloidal Processing of Alumina-Zirconia Composites

A Case Study in Modeling and Simulation Techniques
Applied to Colloidal Processing for Advanced Ceramic Processing Applications

Pradip

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Wednesday, 1 February 2006, 3:00–5:00 PM

Sir C. V. Raman Auditorium, Department of Physics, University of Pune
● two 45-minute sessions separated by a tea break ●

Alumina-Zirconia composites are an important family of structural ceramics materials due to their high strength and toughness properties. These materials are of particular interest to us in India since we are richly endowed with excellent deposits of zircon and bauxite, the natural sources of zirconia and alumina respectively. In order to achieve better properties in the final product, colloidal processing has several advantages over conventional dry processing route. The salient findings of our research work on the colloidal processing of alumina-zirconia ceramics are presented in this colloquium. . . . Detailed abstract of this colloquium and a list of key publications from this group on this topic is available at <http://cms.unipune.ernet.in/announcements/2006-02-01-1500/>.

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Pradip, currently the Group Leader, Materials and Minerals Processing Technology Group at Tata Research Development and Design Centre (TRDDC), Pune, received his B.Tech in Metallurgical Engineering from IIT, Kanpur in 1975 and M.S. and Ph.D. in Materials Science and Mineral Engineering from University of California at Berkeley in 1977 and 1981 respectively. He also spent three years as a scientific officer at Bhabha Atomic Research Centre (BARC) before joining TRDDC in 1984. His main areas of research include particle science and technology, mineral processing, design and development of performance chemicals based on molecular modeling, applied surface and colloid chemistry, mathematical modeling and simulation of particulate processing systems, colloidal processing of advanced ceramics, waste recycling and cement chemistry.

With more than 125 publications and ten patents to his credit, Pradip is the recipient of several honors including National Metallurgist Award, Kuczynski Prize of International Institute of Science of Sintering (IISS). Pradip is Fellow of Indian National Academy of Engineering (FNAE), Indian Institute of Metals (FIIM) and Institute of Materials, Minerals and Mining (FIMMM), UK. He is associate editor of International Journal of Mineral Processing and Transactions, Indian Institute of Metals – The International J. Minerals, Metals and Materials Engineering. He has edited several special issues of international journals, the latest being the Special Issue of Ferroelectrics on Selected Topics in Advanced Materials Research (2004).