

Editorial

The cohesive characteristics of Ceramic Science and Technology are well evident in the relationship between the processing of materials, their microstructure, and their chemical and physical properties. The more recent strict requirements for the design and application of ceramics brought about a specific demand upon characterization of the microstructure. This is a complex topic comprising the distribution of phases, the nature of grain boundaries, the chemical composition of phases, the shapes and sizes of individual crystallites, the nature and morphology of defects and the morphological and elemental composition of interfaces. Therefore it is evident that the significance of ceramic microstructures is a key topic which demands special attention. Moreover, the tools and techniques of microstructural analyses have virtually exploded in number and capabilities over the last few decades.

The increasing interest on microstructural and microanalytical characterization of ceramic materials suggested the opportunity of organizing a special session on 'The Modern Applications of Electron and Scanning Probe Microscopies to Ceramics' at the European Ceramic Society Fourth Conference, Riccione, Italy, 2–6 October 1995. World-reknowned Scientists were invited to present the state of the art in this field, emphasizing the aspect of the application of transmission electron microscopy (including atomic resolution imaging) and related microanalytical techniques to advanced ceramics, metal/ceramic interfaces and superconductors.

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