

Ilhan Aksay

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Ph.D., University of California, Berkeley, 1973



Research Interests

Aksay's past research has led to the development of improved ceramic fabrication processes mainly through the use of colloidal dispersion and consolidation methods. Experimentally and theoretically Aksay addresses fundamental issues on the dispersion of primarily micron-sized powders with polymeric processing aids, the consolidation methods, and microstructure evolution in single- and multi-phase systems. However, for all the answers provided, additional questions indicate a new focus on the length scale of 1 to 100 nm, which is where his group's knowledge of materials synthesis and processing by deliberate design is weakest. Since this is also the range where phenomena associated with atomic and molecular interactions strongly influence the macroscopic properties of materials, the main focus of his group's projects is now on the issues related to the nanodesigning of hierarchically structured ceramic matrix composites with the use of colloidal dispersions and molecular precursors.

Areas of Expertise

Ceramics and Glasses; Colloidal Dispersions; Nanoscience and Nanotechnology

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