

## Department of Materials Science and Engineering

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Nuclear waste materials, environmental degradation of glasses and ceramics, microwave processing, materials engineering, ceramics, sol-gel processing, coatings, glass, ceramic superconductors, sol-gel fibers, self-propagating high temperature synthesis.  
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Thin film deposition, pulsed laser deposition, epitaxial oxide films and multilayers, magnetic thin films and nanoparticles, nanoparticle self-assembly, high temperature superconductivity, magnetometry, chemical/mechanical polishing.  
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Structure-property relationships, powder processing and mechanical alloying, processing and synthesis of metallic, ceramic, polymeric, and composite materials; amorphous phase-strengthening metal matrix composites, application of internal friction to the study of phase transformations in metallic solids.  
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Physics of semiconductor materials and devices, nano- and microelectronics, optoelectronics and photonics; low dimensional hetero-structures, nanostructures, quantum dots and quantum wells; Theory of semi-conductor lasers with a quantum-confined active region, quantum dot lasers and quantum well lasers; computational materials science.  
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