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To: Jackson,Donna A
Subject: New Project Proposal Submission
Date: Wednesday, May 20, 2009 4:32:56 PM

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Lab Address:	205 PS&T Building
Department:	Materials Science and Engineering
Title:	Quantum dots for bioimaging and sensors
Problem:	Synthesis and characterization of Near Infrared Quantum dots and their application in bioimaging and as sensors for metal ions.
Approach:	Hydrothermal, organometallic and microemulsion synthesis techniques will be applied in developing these quantum dots. These dots will then be characterized using TEM, fluorescence spectroscopy, XRD, FTIR, ICP, MRI and their properties will be modified depending on their intended applications.
Techniques/Equipment:	Synthesis techniques: Hydeothermal, organometallic and microemulsion Instrumentation and characterization techniques: SpectraMax 5, TEM, XRD, MRI, FTIR etc.
Systems and Materials:	Quantum dots: CdTe, CdSe, CdTeS, CdTeSeS emitting in the visible and infra red range
Goals:	You will learn: Synthesizing quantum dots using different techniques Characterizing them using different instruments Representing the data using softwares like origin, spectramax etc.
Relevant Industries/Applications:	Bio-materials application Sensors for metal ions
Number of Students Requested:	1
Time Commitment:	10
Semesters Required to Complete Project:	2

Will this Project Satisfy Senior/Honor Research Requirements in your Department?	Yes
If not, Can the Scope of this Project be Expanded to Meet Senior/Honor Research Requirements?	No