

Rice student earns top Texas nano honors for nanoparticle assembly study

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The Nanotechnology Foundation of Texas has awarded Rice University doctoral student Vinit Murthy its 2006 George Kozmetsky Award for Outstanding Graduate Research in Nanotechnology. The award includes a \$5,000 prize.

Murthy and Shravanthi Reddy of the University of Texas at Austin earned top honors in the Kozmetsky competition, which drew stiff competition from the state's leading research universities. Only 14 out of a possible 600 points separated the top four finalists, which represented diverse fields, including medicine, engineering and natural science.

Murthy, a fifth-year chemical engineering Ph.D. student in the research group of Michael Wong, assistant professor of chemical and biomolecular engineering and assistant professor of chemistry, studies nanoparticle assembly. Along with Wong, he co-discovered a simple method to encapsulate any water-soluble compound easily and without damage.

The method is the most environmentally sensitive approach yet devised for making tiny hollow spheres called microcapsules. Microcapsule research is one of the most active fields in applied nanotechnology, with dozens of companies either developing or using the tiny containers – usually smaller than living cells – to deliver everything from drugs and imaging agents to perfumes and flavor enhancers.

"Nanoparticle-assembled capsules are particularly interesting because

their properties can be tailored for specific applications," Murthy said. "Because our method works at room temperature and uses water as a solvent, it's cleaner, cheaper and easier than existing methods of producing microcapsules."

"Vinit has been very successful in creatively applying the physical and colloid chemistry of nanoparticles to the synthesis of functional materials," Wong said. "His Ph.D. research provides a great example of nanotechnology research performed at the basic science level that can readily transition into commercial products. This award is a wonderful and well-deserved honor."

The Kozmetsky Awards are the first awards of their kind to be offered in the U.S. to students working in fields related to nanotechnology. They are given annually to the top two graduate students in Texas. The award funds must be used for stipends, travel, lab supplies, books and other direct costs associated with the student's research.

Murthy credited Wong's guidance and leadership as a critical factor in his winning the award.

"I couldn't have achieved this without Dr. Wong's enthusiasm and his unwavering encouragement," Murthy said. "By his example, I have learned how important it is to develop interpersonal skills, teamwork and leadership qualities – not just for success in my career but in order to become a well-rounded person."

Source: Rice University

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