UWMRF Rockwell Catalyst Grants
Round III Awards (Fall 2009, Announced January 2010)

Rockwell Catalyst Phase 3 Awards ($180,000, awarded in 2009)

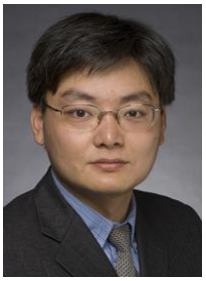
The Research Foundation at the University of Wisconsin–Milwaukee (UWM) has recently announced three new Catalyst Grants in Advanced Automation sponsored by the Rockwell Automation Charitable Corporation. The grants total $180,000.

This is the third round of grants made possible by Rockwell, and the program continues to draw innovative and promising research proposals from UWM researchers. These awards bring the total amount awarded through the Rockwell Catalyst Grant Program to $570,000. Projects include the three main focus areas identified for the Rockwell Catalyst Grant Program: software & informatics, sensors & devices, and materials. It also shows applications of these areas to regionally important industry segments including energy, water and manufacturing

Following the initial grant from the Rockwell Automation Charitable Corporation for the Catalyst Grant Program in 2007, other foundations in the Milwaukee area have joined Rockwell in supporting this program. Over $2.3 million committed to the catalyst program including support from the Rockwell Automation Charitable Corporation and the Lynde and Harry Bradley Foundation. $1.5 million has been awarded as of January 2010

Microbial Fuel Cell for Bioenergy Production

Zhen (Jason) He, Ph.D., Assistant Professor, Civil Engineering and Mechanics



Dr. He is a new faculty member in UWM's College of Engineering and Applied Science. This project, "Development of Pilot-scale Microbial Fuel Cells for Bioenergy Production," focuses on the development of a microbial fuel cell (MFC) that can produce energy from wastewater. In this work, the reactor configuration and materials will be optimized to maximize power output from the fuel cell. Scaling up from this pilot-scale device may allow for commercialization opportunities for this technology in small communities or industrial applications.

Nanoarray-based Optical Sensor for Water Sensing

Nikolai Kouklin, Ph.D., Assistant Professor, Electrical Engineering

This project, "Nanoarray-based optical sensor," incorporates the development of advanced nano-materials to be applied to the sensing of contaminants in water. Dr. Kouklin and his collaborators will develop a novel three-dimensional nanostructured substrate that can enable the detection, analysis and remote monitoring of trace concentration of chemicals in water using Raman spectroscopy. If successful, the prototype device will be characterized to determine its sensitivity and field tested.

PORE-FLOW Software for Modeling of Composite Manufacturing

Krishna Pillai, Ph.D., Associate Professor, Mechanical Engineering

Dr. Pillai has developed computer simulation tools to aid manufacturers in modeling mold-filling for a variety of applications. This project, "Stimulating the Making of Dual-Scale Metal Matrix Composites using the Pressure Infiltration Process," will extend that work to help manufacturers model metal matrix composites, materials that include reinforcing materials such as carbon or glass fibers. These advanced materials are increasingly important to manufacturers who seek high strength, low weight materials, and the project will hopefully lead to collaboration with a major vendor of software modeling tools.