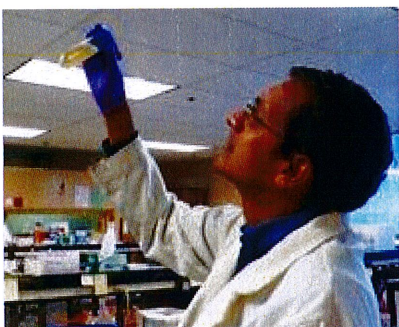


## FY 2014 Academic Research Grants



TURI has recently awarded two grants to UMass Lowell faculty to conduct research that identifies and tests less hazardous substances used in industry.

**Getting the Lead Out** – Assoc. Prof. [Zhiyong Gu](#) in Chemical Engineering is working to create a new type of lead- and halogen-free nanosolder paste for use in next-generation electronics assembly and manufacturing of computers, cell phones, automobiles, satellites and medical devices such as heart pacemakers.

**Formaldehyde-free Phenolic Novolac Resin** – Assoc. Prof. [Ramaswamy Nagarajan](#) in Plastics Engineering will test naturally occurring sugars to replace formaldehyde, a known irritant and potential cancer hazard, in phenolic resins used in wood adhesives, laminates and coatings and bonded and coated abrasives.

Every year we provide seed funding to initiate research that will lead to new opportunities for companies to reduce their use of toxic chemicals. Since its inception in 1992 this program has provided over \$1,300,000 in funding to UMass researchers, supporting more than 80 graduate and doctoral level students. The seed funding helps researchers gain additional funding to find safer alternatives.



For example, Assoc. Prof. Zhiyong Gu and an interdisciplinary team received \$460K from the National Science Foundation to develop lead-free soldering for the microelectronics and semiconductor industry. It has also lead to national recognition of the research being done and the students at UMass.

The research has contributed to industry adoption of toxics use reduction, has resulted in patents and commercial products, and has contributed to TURI's goal of reducing the use of toxic