

# THE *Current*

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## **Materials Research Partnership Renewed Between UC Santa Barbara and Mitsubishi Chemical**

Mitsubishi Chemical Corporation of Tokyo and University of California, Santa Barbara announced that they are extending their successful materials research alliance – the Mitsubishi Chemical Center for Advanced Materials ([MC-CAM](#)) at UCSB – for a new period. Under the terms of the renewal agreement, Mitsubishi Chemical, the largest chemical company in Japan, will invest nearly \$6 million at UCSB over the next four years.

The MC-CAM was established in 2001, and has established itself as a prolific and efficient research unit. Over its first thirteen years, MC-CAM produced more than 130 publications and 100 patent applications—one of the highest rates of invention production of any university-based research program worldwide. The Center reports notable efficiency in its technology generation, with a cost-per-patent of approximately \$300,000. This is significantly below the averages of \$500,000 for technology companies and \$2.7 million for research universities.

Directed by [Glenn Fredrickson](#), a professor of chemical engineering and materials, MC-CAM is affiliated with the [UCSB College of Engineering](#) and [Materials Research Laboratory at UCSB](#): a National Science Foundation Materials Research Science and Engineering Center. The MC-CAM maintains a portfolio of research projects that are selected and shaped by a steering committee of 8 members (four from each

partner) from proposals submitted by UCSB researchers and scientists from Mitsubishi Chemical.

“Our campus shares great pride in our longstanding partnership with Mitsubishi Chemical, which is guided with the visionary and dynamic leadership of Professor Glenn Frederickson. MC-CAM is a model of long-term international collaboration between industry and academia and is a world leader in developing advanced materials,” said UCSB Chancellor Henry T. Yang. “We appreciate Mitsubishi’s vision for extending their support of our joint innovative research at UC Santa Barbara.”

The University of California owns inventions developed by university employees that derive from the research funded by Mitsubishi Chemical, and the company has first option for exclusive licenses to use the technology. The center's current areas of focus are functional, high value materials for solid-state lighting, battery materials, solar cells, and organic transistors.

“The College of Engineering's partnership with Mitsubishi Chemical has proven successful and prolific, a win-win for both parties. We have made great research strides in semiconductor materials, solar cells, and several other areas for which the applications will benefit industry and society,” commented Rod Alferness, Dean of the College of Engineering.

Initial funding from Mitsubishi Chemical covered operations, endowed two professorships in the College of Engineering, and paid in part for a new wing of the Materials Research Laboratory building in which MC-CAM is housed. Over the years, renewal support included a permanent endowment of several graduate fellowships in materials and chemical engineering, as well as research and administration support. Funds from the 2014 renewal will include an additional philanthropic contribution of \$400,000 to continue endowing new graduate fellowships in materials and chemical engineering.

Hiroaki Ishizuka, president and chief executive officer of Mitsubishi Chemical, said his company has seen a very good return on its investment in the center, both in terms of new inventions such as in the area of organic electronic devices, and also as a place where Mitsubishi’s scientists and engineers can deepen their understanding of commercial and pre-commercial materials through UCSB's advanced characterization capabilities. “We are confident the center will continue to make discoveries that contribute to our businesses as well as benefit society. We will

run several projects on next generation functional materials, while other projects will focus more on characterization of emerging materials and devices. We look forward to the exciting developments we know will take place at MC-CAM over the next four years.”

Fredrickson, the center's director, noted that MC-CAM provides Mitsubishi scientists access to some of the top minds in materials science, including Professor Alan Heeger, one of UCSB’s Nobel Laureates. “Access to our superb body of students and post-doctoral fellows is also an asset,” he noted. “Mitsubishi Chemical appreciates that the success of our joint research programs is predicated on the quality of the students that we can attract to UCSB. This is the basis for their ongoing commitment to funding graduate fellowships. In return, the center’s activities have provided a unique, real-world educational experience for the participating students and post-docs, and both students and UCSB faculty appreciate the guidance provided by Mitsubishi Chemical in identifying research problems that are both challenging and of great significance to society.”

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## **About UC Santa Barbara**

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.