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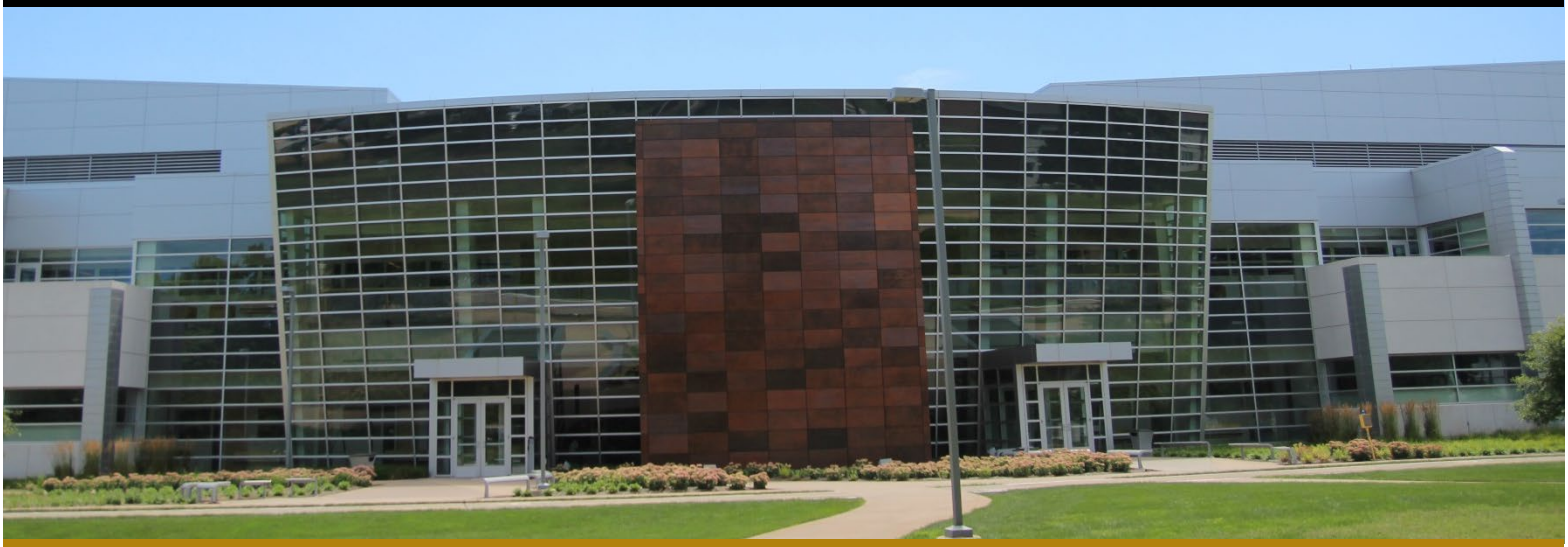

Birck Nanotechnology Center

Professor T. Pradeep is a Deepak Parekh Institute Chair Professor and Professor of Chemistry in the department of Chemistry at the Indian Institute of Technology Madras. He was a post-doctorate student and is currently an adjunct professor of Chemistry at Purdue University. He is an associate editor of ACS Sustainable Chemistry and member in editorial advisory board of many journals such as, ACS Nano, Chemistry of Materials, Nanoscale Advances etc. He is an elected fellow of the American Association for the Advancement of Science (AAAS) and The World Academy of Sciences (TWAS). He is recently being awarded with Padma Shri, the fourth highest civilian award in the Republic of India. Pradeep's work is in the area of molecular materials, surfaces and mass spectrometry.

Professor T. Pradeep

Affordable Clean Water Using Advanced Materials

Tuesday, February 18, 2020
10:00 – 11:00 a.m.; BRK 1001

Water is one of the essential enablers of life on earth. Beginning with the origin of the earliest form of life in seawater, it has been central to the evolution of human civilizations. Recently, water quality has been associated with the development index of society. Several chemical and biological contaminants have endangered the quality of drinking water. Realizing the molecular nature of contamination in drinking water, significant progress has been made to utilize the chemistry of nanomaterials for water purification. Recently we found that noble metal nanoparticles degrade halocarbons efficiently to amorphous carbon and metal halides at room temperature and at low concentrations. This discovery has led to the world's first nano-chemistry based water filter for pesticide removal as many pesticides are halocarbons. We have developed several technologies to remove other contaminants from drinking water. Combining such materials, an all-inclusive affordable drinking water purifier has been developed. This technology, named AMRIT, is being implemented now in the arsenic affected regions of India. About 600,000 people have been benefitted from these installations. Several other drinking water technologies have been rolled out from our lab. To take such technologies forward, four companies have been incubated with the participation of IIT Madras. This activity is now being expanded globally.

Host: Nicolás Morato Gutiérrez (nmoratog@purdue.edu)

PURDUE UNIVERSITY Discovery Park