Saurav Datta

TalkTitle: Membrane Technologiesfor Sustainable Products and Processes

Abstract: Energy and environment are the two critical areas that have attracted enormous attention from the scientific communities. Limited availability of fossil fuels and growing concerns for climate change have necessitated the need for moving towards sustainable products and processes utilizing “renewable resources” and adopting “environmentally benign transformation technologies”. Membrane based technologies integrate the concepts of science and engineering to identify sustainable solutions to energy and environmental challenges.Membranes possess several advantages due to their versatility, energy and economic benefits, enhanced process efficiency, and ease of scaling-up. Currently, membranes are widely used as reactor, adsorber, advance separation device, drug delivery tool, etc., in addition to their traditional use as separation media. This presentation will focus on development of advancement membrane technologies for sustainable products and processes. Specifically, formation of functionalized membranes using various surface chemistries and immobilization approaches will be discussed along with the applications as enzymatic bioreactor and for CO_2 capture. The research studies related to this presentation have been conducted at Department of Chemicals and Materials Engineering, University of Kentucky andEnergy Systems Division, Argonne National Laboratory.

Short Biography

Saurav Datta is a Staff Scientist at Energy Systems Division, Argonne National Laboratory, USA. Prior to that, he has worked as a postdoctoral researcher at Argonne. He has obtained PhD from Department of Chemical and Materials Engineering, University of Kentucky under the guidance of Dr. Dibakar Bhattacharyya. Earlier, he has obtained B. Tech. and M. Tech. in Chemical Engineering from University of Calcutta and IIT Kanpur, respectively.His expertise and research interests include development of functionalized membranes and materials for energy, environmental and bioengineering applications.