



# The Macrogram

Hartford Chapter of the ASM International  
Build on our Strengths - Leverage our Diversity - Network to Succeed

## MONTHLY MEETING – TOPIC

January 12, 2010

**Topic: FUEL CELLS - Science, Technology, and the Environmental Benefits**

**Speaker:** Dr. Sudhangshu Bose  
Professor, Engineering and Science  
Rensselaer Polytechnic Institute  
Hartford, Connecticut

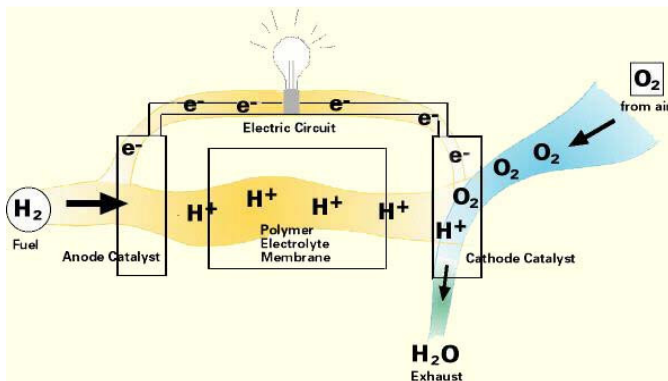
**Directions: Margaritas Mexican Restaurant - 350 Roberts St., East Hartford, CT, Ph: (860) 289-7212**  
**I-84 Exit 58 Roberts Street:** From the East, turn right onto Roberts St. and the restaurant is immediate on the left. From the West, turn left on to Robert St. and after the first light the restaurant is immediate on the left.

**Agenda:**  
Cocktails: 5:30-6:30 PM  
Dinner: 6:30-7:30 PM  
Program: 7:30-8:30 PM

**Program Charges:**  
Regular Members - \$28.00  
Retirees - \$15.00  
Full Time Students - \$15.00

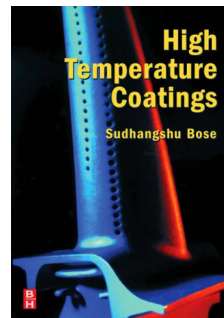
**Technical Chairperson:** Sam Christy  
**Reservations:** Call Linda at Service Steel Aerospace (860) 583-3336 by noon January 7th.  
**Thanks!**

## Abstract:



Fuel Cells are electrochemical devices. They directly produce electrical power from the chemical reactions of fuels with oxidants in the presence of an ionic conductor known as an electrolyte. Fuel Cell process does not go through the intermediate steps of conversion of the heat of reaction to mechanical work and finally to electrical energy as in gas turbine based power plants. The basic science, the current state of the technology, and the reason for the absence of environmentally impacting discharges will be presented.

## Bio:



Sudhangshu (Sudha) Bose is Professor in the department of Engineering and Science at the Hartford, Connecticut campus of Rensselaer Polytechnic Institute, Troy, New York. In 2008, after 30 plus years with UTC, initially at the Fuel Cells operations, he retired as a Fellow and Manager at Pratt & Whitney's Materials and Processes Engineering department. Sudha holds a Ph.D in Materials Science and Engineering from University of California, Berkeley. He has published many original papers on topics of high temperature materials and has to his credit seventeen patents granted and several filed. Some of the

awards received by Dr. Bose include Scholastic Achievement Award, ASM Golden Gate Chapter, UTC Award for Extraordinary Achievement in Product Design, Pratt and Whitney Eagle Award, Pratt and Whitney Special Award, and Pratt and Whitney Leadership Award. He is the author of the book "High Temperature Coatings" published in 2007 by Elsevier. He teaches Materials and Mechanical Engineering related courses at RPI, Hartford.