

Challenge Lecture Series

by

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**Title: "Indigenous technology in a Globalized
World: A Case Study"**

or

"Resolving Atoms in our Backyards"

Venue: Lecture Hall - 3



भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology
Hyderabad

Date & Time: 20 February 2012 at 3:30 pm

All Are Welcome!

Abstract of the talk

It is an interesting and remarkable fact that every Nobel-prize winning piece of work in Experimental Physics has been carried out on apparatus which has been designed and developed by the physicist in question, be it Raman, Mossbauer or Binnig. This makes the question of how we build an instrumentational base for cutting-edge research in India relevant. I will discuss this in the context of several hi-tech instruments which my team has developed: Scanning Tunneling Microscopes for various applications, a high-end Gas Chromatograph, Mass Flow Controllers, and Data Acquisition Systems --- to mention a few. The talk will focus on how the expertise we have built up can help in facilitating research (in the pertinent fields) at all our institutions.

Biography of the Speaker

Dr. Sahdev joined the Physics Department of IITK (where he is currently a Professor) after several years of teaching and research in leading groups at Cornell University, Univ. of Pennsylvania, and the International Center for Theoretical Physics (Italy) among others. While at these centers, he worked and interacted with several Nobel laureates including Prof. Salam, Ken Wilson, Steven Weinberg and Richard Feynman. Prof. Sahdev has contributed to several branches of physics: He was a co-discoverer of radiation zeroes and of their use in determining the anomalous magnetic moment of the W-boson. He is one of the original pioneers of the field of higher-dimensional cosmologies. He has worked on the non-linear dynamics of Josephson-Junction arrays and has developed several algorithms for simulating them. More recently, he has made important contributions to the area of indigenous instrumentation. In particular, he and his group have developed several Scanning Probe Microscopes, high-end gas chromatographs and data-acquisition systems, all of which have reached internationally competitive standards.