

University of Mumbai

Department of Physics (Autonomous)

Cordially invites you to attend

Late Prof. M.C. Joshi Memorial Lecture

(Founder and Head, Department of Physics, University of Mumbai)

On

Manipulating Atoms and a Lot More in our own Backyard

By

Prof. Deshdeep Sahdev

CEO, Quazar Tech

Ex.Faculty, Department of Physics, IIT, Kanpur

Guest of Honour

Prof. K G Suresh,

Head, Department of Physics, IIT Bombay

Venue: Phirozshah Mehta Bhavan, Kalina Campus, University of Mumbai

Date & Time: **Wednesday, 07th February 2017, 3.00 pm**

Join us for High Tea at 4.30 pm

Prof. Vaishali Bambole
Head, Department of Physics

University of Mumbai

**Department of Physics
(Autonomous)
Lokmanya Tilak Bahvan,
Vidynagari Campus.**



Prof. M.C. Joshi Memorial Lecture

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Manipulating Atoms and a Lot More in our own Backyard

Prof. Deshdeep Sahdev

(CEO, Quazar Tech, Ex.Faculty, Department of Physics, IIT, Kanpur)

It is an interesting and remarkable fact that every Nobel-prize winning piece of work in Experimental Physics was carried out on apparatus designed and developed by the physicist in question, be it Rutherford, Raman, Mossbauer or Binnig. This makes it relevant to ask what it would take to build a base for cutting-edge instrumentation in India.

The issue would be addressed by me by taking the audience through a fascinating journey which saw my team developing Scanning Probe Microscopes and Physical Properties Measurement Systems all the way out to internationally competitive standards. It will also be discussed how we enhanced the base to developed research in material science, condensed matter physics and nano-technology, with packages for scientific computation, many designed and developed (like our instruments) essentially from scratch. By the end of the talk, the audience should get a clearer picture that the complete & seamless, indigenous integration of theory, computation, experiment and instrumentation, which we are beginning to achieve at Quazar Tech holds out the promise (not only for us but for centers all over India) of tackling some really interesting physics problems, a few of which would be tackled in detailed



Dr. Sahdev trained, as a particle theorist, in leading groups at Cornell University, Univ. of Pennsylvania, and the International Center for Theoretical Physics (Italy) among others. He worked and interacted with several nobel laureates including Prof. Salam, Ken Wilson, Steven Weinberg and Richard Feynman. He then joined IIT Kanpur, over two decades of innovative teaching, he turned out to be one of the best physicists of the country. Many of his students have, by now, received the Bhatnagar, Infosys and other prizes. 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 considerable progress in achieving the integration of theory, computation, experiment and instrumentation at QuazarTech - a Research Lab, Educational Center and Company, all merged into a single entity - which he set up. In particular, he and his group have developed several Scanning Probe Microscopes, Physical Properties Measurement and Data-acquisition Systems, and used them not only for their own research and teaching, but also to facilitate teaching and research across the entire country.

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