

## Prof. A.K.Raychaudhuri- a brief resume :



### **General area of reserach: Experimental Condensed Matter Physics, Materials Physics and Nanosciences**

*Prof. Raychaudhuri obtained his M.Sc from IIT,Kanpur and Ph.D from Cornell University. He had post-doctoral experience at the Max Planck Institute (FKF),Stuttgart as an Alexander von Humboldt Fellow..Prior to joining S.N.Bose National Centre, he worked as a Professor in Indian Institute Science (IISc), Bangalore and as Director, National Physical Laboratory (NPL),New Delhi.*

*His research interest covers a broad canvas of problems in condensed matter physics and materials physics. This includes physics of glassy states, metal-insulator transition in oxides, physics of High  $T_c$  superconductors and manganites that show colossal magnetoresistance. His research activities encompass synthesis of materials of different kinds, fabrication of nano devices and physical measurements done down to low temperatures in high magnetic fields using a variety of techniques involving electrical, magnetic and optical measurements.*

*His current research mainly focuses on nanomaterials that include nanofabrications using nanolithography techniques such as use of*

electron-beam and ion-beam lithography for fabrication of single nanowires based devices. These single nanowires devices are used for studying new physics and making ultra-sensitive radiation and charge detector. The study of basic physics issues involve physics of size reduction,  $1/f$  noise and resistance fluctuations in nanowires .

He continues to work on physics of strongly correlated oxides like manganites. He also investigates the synergetic effects of electric double layer gates and illumination on functional oxides such as wide band gap semiconductor ZnO.

The current research work done is supported by two extramural major projects support: UNANST-II and the Theme Unit for Excellence in Nanodevice Technology both from the Nano Mission of the Government of India .

Over the years research group of Professor AKR at Indian Institute of Science and S.N.Bose National Centre for Basic Sciences, contributed to a broad spectrum of research problems in the area of experimental condensed matter physics. His group had graduated more than 30 Ph.D students who are now established researchers/academics/professionals in India and abroad. His research work is widely cited. He has more than 15 papers that have citations of more than 100. For his work he had developed a number of techniques some of which many were unique in the country.

Professor AKR serves in a number of national committees that include National Science Advisory group (NSAG) of Nanomission and Programme Advisory Committee (PAC) on Solar energy research initiative. He had been a member of the Science and Engineering Research Council (SERC) of the Department of Science and Technology and chaired the PAC on condensed matter physics and materials science. He also chaired the FIST advisory committee of DST on physical sciences. He has served as the member of Board of Governors (BOG) of IISER , Pune and currently is a member of the BOG of IIT, Kanpur. He is also a member of the executive council of North-East Hill University (NEHU),Shillong.

**Complete CV (link)**

*Highlighted publications with citations (link)*

*Publication of Last 5 years (link)*

*Research activities (link)*

*Facilities list (link)*

*Complete list of publications (link)*

*Sponsored Projects (link)*