

## **Brief Biography of Professor Sukhdev Roy**

Sukhdev Roy received the B.Sc. (Hons.) degree in Physics from Delhi University, India, in 1986, M.Sc. degree in Physics with specialization in Electronic Science, from Dayalbagh Educational Institute, Agra, India, in 1988, and Ph.D. degree in Physics, from Indian Institute of Technology, Delhi, India, in 1993. He was a Senior Research Assistant at the Department of Physics, Indian Institute of Technology, Delhi, from 1988 to 1989. Since 1993, he has been with the Department of Physics and Computer Science, Dayalbagh Educational Institute, Agra, India, where he is at present a Professor.

He has been a Visiting Scientist at the Tata Institute of Fundamental Research, Mumbai, Indian Institute of Science, Bangalore, Hokkaido University, Osaka University, University of Waterloo, Queen Mary, University of London and Harvard University. He is also an Associate of the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.

He has won a number of awards and fellowships that include the 1st IETE-B.B. Sen Memorial Award in 2007 and the IETE-Emerging Optoelectronic Technologies (94) Biennial Award in 2012, by the Institution of Electronics and Telecommunication Engineers, India, the Hari Ohm Ashram Prerit Shri H.C. Shah Research Endowment Prize by Sardar Patel University, India in 2008, the Japan Society for Promotion of Science Invitation Fellowship to Hokkaido University, Sapporo, Japan, in 2004, the Career Award for Young Teachers by the All-India Council for Technical Education, India, in 2001 and Best Paper Presentation Awards by the Indian Science Congress Association in 2000 and 2001 and by the Systems Society of India in 1995 and 2008.

He has published more than 100 papers in journal and conference proceedings and has contributed three book chapters. He is on the Editorial Board of Recent Patents on Signal Processing, International Journal of Computer and Electrical Engineering and Journal of Electronic Science and Technology. He is on the Review Boards of journals published by OSA, IEEE, SPIE, IOP, Elsevier, Springer and Taylor and Francis.

He was the Conference Programme Committee Chair of the International Conference on Nano Science and Technology, Dec. 18-19, 2010, Emei Mountain, China. He delivered the Keynote Address at the International Conference on Nanotechnology, Optoelectronics and Photonics Technologies (NOPT-2010), Singapore, Feb. 26-28, 2010. He has delivered Invited talks at International and National Conferences on Fiber Optics and Photonics. He was

an invited speaker at the Annual Meeting of the American Physical Society, New Orleans, USA, March 10- 14, 2008. He has also delivered more than 50 invited talks and seminars at prestigious universities, research centres and laboratories around the world that include Harvard University, MIT, Princeton University, University of Michigan-Ann Arbor, College of optical Sciences, University of Arizona-Tucson, University of Florida-Gainesville, University of Miami, Rutgers University, NJIT, Sarnoff Research Lab., University of Waterloo, Optoelectronics Research Centre, University of Southampton, City University, London, Queen Mary, University of London, University of Regensburg, University of Paderborn, Germany, Osaka University, Kyoto University, Royal Institute of Technology (KTH), Stockholm, National University of Singapore and Nanyang Technological University, Singapore.

He Guest Edited the Special Issue on Optical Computing, Circuits, Devices and Systems, of the Journal: IET Circuits, Devices Syst. (UK) 5 (2), pp. 73-147, 2011.

He is a Fellow of the Indian National Academy of Engineering and the Optical Society of India, a Life Member of the National Academy of Sciences, India, Senior Member, International Association of Computer Science and Information Technology and Member of the Optical Society of America and IEEE, and has served on numerous Conference Technical and Advisory Committees.

He has made significant contributions in Nano-Photonics that encompass nano-bio-photonics, organic and silicon photonics, and molecular electronics. He has not only demonstrated that naturally occurring extremely photosensitive protein molecules can be used for low-power all-optical computing, but also integrated them with nanostructures to enhance their functionality. His novel designs of all-optical computing circuits with bacteriorhodopsin protein-coated ultrahigh-Q silica microresonators coupled to optical fibers, define a new paradigm in convergence of technologies, by using nano and biotechnologies to achieve ultrafast and ultrahigh bandwidth information processing. His areas of interest are fiber and integrated optics, nano-photonics (Silicon, Organic and Biophotonic devices), and all-optical information processing, with a focus on the design of energy-efficient, ultrafast, environmental friendly, compact and low-cost systems for information processing, sensing and energy conversion.