

Prof. Davinder Kaur Walia

Dr. Davinder Kaur is a Senior Professor in the Department of Physics and Centre for Nanotechnology at the Indian Institute of Technology Roorkee. Some of her areas of interest are nanoscale thin films, memory devices, shape memory alloys, MEMS (micro-electro-mechanical systems) sensors and energy devices. Her research focuses on deep understanding of processes and properties of nanoscale thin films of functional materials and implementation of this understanding for improvement of devices useful in energy, MEMS and memory applications.

Prof. Kaur has contributed successfully to the Nanotechnology Initiative Program of National importance of Government of India. She has undertaken a major research project of Rs. 4.84 Crore from department of Electronics & Information technology (DeitY, MIT India) (2008-2013) and the Department of Science and Technology (DST) under Nano Mission 2017-2020. The main objective of the project is to strengthen the Nanotechnology infrastructure and research activities at IIT Roorkee. Out of the research grant received, state of the art world class research laboratory for synthesis and characterization of nanomaterials has been developed. A good number of PhD, MTech, M.Sc. and BTech students has

been trained on them. She considers it as an important milestone.

Prof. Kaur completed her Masters from Delhi University in a class of 200 where only 10-15 women students were present. She was a member of the first batch of NET-CSIR qualified PhD students with specialization in High Temperature Superconductivity at National Physical Laboratory (NPL) Delhi. She worked as a postdoctoral fellow at Imperial College, London, U.K and Royal Institute of Science and Technology, Sweden under Gestafesson fellowship. She had also worked as visiting research scientist at Tata Institute of Fundamental Research, (1996), Atomic Institute, Vienna, Austria (1997) and as a guest scientist at Oak Ridge National Laboratory, U.S.A. (1998).

She has been awarded the prestigious Shastri Indo-Canadian Fellowship in the area of MEMS technology (2020) and Nanotechnology (2017). She is a proud recipient of V.N.M.M Research Award for innovative and creative work in the field of Nanostructured Thin Films and Devices (2012). She has also received the scroll of merit from Indian Cryogenics Council (1990) and Star Performance at IITR for best teaching and research (2004). Prof. Kaur participates in sports activities since her





VNMM Research Award for innovative research in Nanotechnology from BOG Chairman, IIT Roorkee (2012).

school days. She is a member of Women's Badminton Team at IIT Roorkee and regularly participates in inter IIT staff competitions.

Her recent innovative research work is on development of a four-logic state non-volatile memory device with Ferromagnetic Shape Memory Alloy based Multiferroic Tunnel Junctions for Magnetoelectric Random Access Memory (MeRAM) and Ultrasensitive Magnetic Sensor Applications The device has great potential to be used in future memory chips for almost all electronic applications. The research has been featured in India Science Live Wire, NDTV, Hindustan Times (November 2017) along with other magazines. It is funded by DST under Nano Mission Programme (2017-2020).

Prof. Kaur has been delivering invited talks in international conferences. Recently she has been selected as Executive Board member

> "Think like a Proton and stay Positive. Never let the candle of curiosity in your mind to get dimmed. The only person who can limit you, is you yourself." – Davinder



of Asian Ferroelectric Association (AFA) to represent India. She is also an expert member of Physical Sciences board of DRDO, CSIR and SERB-DST. She has published over 165 papers in peer reviewed journals and has mentored 20 Ph.D. and 30 M.Tech students. Her h index and number of citations are also very impressive. She is a mentor of many young and bright Ph.D. and Master's girls students who after her guidance went for higher studies abroad in STEM. Not only her students but her own daughter got inspired from her and opted to build a career in science.

Prof. Kaur has high regards for her parents. Her father Mr. Kulwant Singh Walia was an electronics teacher and mother a homemaker. Prof. Kaur believes that her parental encouragement played an important role for her career success. Prof. Kaur's message to young professionals interested in STEM: