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Obituary

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Obituary: Sushil Auluck

It is with profound grief that we remember Professor Sushil Auluck, Associate Editor of *Emerging Materials Research*, who left for his heavenly abode on 8 December 2020. A wonderfully witty person with great sense of humour, he was born on 27 September 1944 in New Delhi, India. He obtained his undergraduate (1965) and postgraduate (1967) degrees from Delhi University (New Delhi, India). Subsequently, he completed his Master's (1970) and PhD (1973) in Physics from the University of Chicago (IL, USA). His PhD thesis at the University of Chicago was entitled *Correlation Between Anisotropy in the Normal-State Mass-Renormalization Anisotropy in the Superconducting Energy Gap*.

Professor Auluck started his career as an Instructor in Physics at the University of Arizona (AZ, USA) in 1972 and remained there until 1973. In 1973, he returned to India and worked from 1973 to 1975 as a Research Associate in the Department of Physics at the University of Roorkee (Roorkee, India), at the foothills of the Himalayas. He served Punjab Agriculture University (Ludhiana, India) during 1975–1978. Roorkee fascinated him much and he moved back to the University of Roorkee (now the Indian Institute of Technology (IIT), Roorkee) in 1975 as a faculty member. His students liked him immensely, not only for his teaching but also for his friendly and caring attitude. He retired from IIT Roorkee in 2007, and served IIT Kanpur (Kanpur, India) as visiting faculty during 2007–2009.

Sushil Auluck, 1944–2020

From 2009 until his demise, he was associated with the research and development (R&D) activities of the Council of Scientific and Industrial Research-National Physical Laboratory (CSIR-NPL) in New Delhi, India. As a consultant, under the JC Bose Fellowship scheme, he was instrumental in the laboratory's R&D activities, which included thermoelectrics, two-dimensional electron gas oxide heterostructures, materials for solar cells and others. He not only helped to initiate theoretical support to the laboratory experiments, but also facilitated the establishment of high-performance computational cluster resources at CSIR-NPL.

Professor Auluck was associated with several institutions around the world. This included his affiliation as Visiting Scientist, Ames Laboratory (IA, USA) in 1983–1984 and Iowa State University (IA, USA) during the summers of 2003–2007; Visiting Assistant Professor, North Dakota State University (ND, USA) in 1984–1985; Visiting Scientist at Joint Research Centre (Karlsruhe, Germany) in 1990–1991; periodic visits to the Condensed Matter Theory Group, Uppsala University (Uppsala, Sweden) during 1991–2001; and Visiting Scientist at Oak Ridge National Laboratory (TN, USA) during the summers of 2005 and 2009. He supervised 12 doctoral theses at IIT Roorkee and all of his doctoral students are well settled in reputable institutes worldwide. He published 363 research papers in journals of international repute. Many renowned scientists including Professor Bruce Harmon (Ames Laboratory), Professor Anna Delin (KTH, Stockholm, Sweden), Professor David J. Singh (University of Missouri, MO, USA), Professor Olle Eriksson (Uppsala University, Sweden), Professor M. S. S. Brooks (European Institute for Transuranium Elements, Karlsruhe, Germany), Professor A. H. Reshak (Czech Technical University, Prague, Czechia), Professor Khenata Rabah (Mascara University, Mascara, Algeria) and many more throughout the globe were in the list of his collaborators. He was an active researcher until the end and had more than 50 collaborators over the span of his research career.

His research interests included De Haas-van Alphen (dHvA) effect measurements, model calculations of electronic (Hall coefficient, ultrasonic attenuation, thermo-electric) and dielectric properties of metals and semiconductors, electronic band structure, Fermi surface, magnetism, optical and transport properties of metals, inter-metallic compounds and low-dimensional materials using pseudopotentials, interpolation, Korringa–Kohn–Rostoker, mixed basis, linear muffin-tin orbital (LMTO), full-potential linearized augmented plane wave and full-potential LMTO methods.

Professor Auluck was passionate and excited about his research work, and was always bubbling with enthusiasm. His zest for his research work and his popularity amongst his colleagues and graduate students was such that he was always readily available to help researchers both young and old. This resulted in a huge network of collaborators, friends and well-wishers. The global scientific community will miss this wonderfully superhuman, modest, brilliant and witty genius and prays that his soul rests in peace.

Tashi Nautiyal
Jiji J. Pulikkotil
Manish Kumar
Nuggehalli M. Ravindra