

Prof. K.A. Padmanabhan Institute Chair Professorship - IIT Madras

Prof. Kuppuswamy Anantha Padmanabhan is well known for his contributions in the field of Materials Science and Metallurgical Engineering, in general and in the areas of superplasticity and plasticity, bulk and sheet metal formability/ forming and fatigue, in particular. A former Dean (Academic Research) at IIT Madras and Director of IIT Kanpur, he has about 45 years of research & development, consulting and teaching experience in materials science and engineering. He is currently Professor of Eminence (Honorary), Anna University, Chennai; Member, Research and Innovation Advisory Board, TCS and a Research Advisor to TCS and Aditya Birla S&T Company.

He obtained his B.Sc (Metallurgy) – a five-year integrated degree program in Metallurgy and Metallurgical Engineering - from Banaras Hindu University (India) in 1968, securing the first rank in the university and (all possible) three Gold Medals and his Ph.D. from the University of Cambridge, U.K, in February 1972. He started his professional career in April 1972 at Banaras Hindu University (India) where he was a Lecturer (1972-74) and Reader (1974-79) in the Department of Metallurgical Engineering. In January 1980 he joined IIT Madras as a Professor and Head of the Metal Forming Laboratory of the Department of Metallurgical Engineering. During 1982–85 he served as the Head of the Department of Metallurgical Engineering of IIT Madras. In 1984/85 he received a grant of DM 3.2 million from the Federal Ministry of BMZ, Germany, through its implementing agency, GTZ (Gessellschaft fuer Technische Zusammenarbeit), for the establishment of an Indo-German Materials Testing Facility at IIT Madras.

Prof. Padmanabhan was the founder Chairman, GATE (Graduate Aptitude Test in Engineering) – the qualifying test for admissions with scholarship to higher technical institutions in India – on behalf of the Ministry of Education, Government of India, for the First and the Second GATE examinations in 1983 and 1984. He established the Centre for Continuing Education at IIT Madras and was its Founder-Chairman during 1986-90. Later he was appointed as Dean, Academic Research, IIT Madras.

In September 1997, Prof. Padmanabhan was appointed as the Director of IIT Kanpur and he served in this position for 4 years. After his tenure in IIT Kanpur as its Director, he became the Vice Chancellor/ Rector, South Asia International Institute, Hyderabad, India (a member of the Sylvan International Universities Network, now known as Laureate International, Baltimore, USA). In 2004, he became the Jawaharlal Nehru Chair Professor, University of Hyderabad, India. In November 2006, he was invited to become the Professor of Eminence at Anna University, Chennai, India. During January - December 2009, he was the Mercator Professor of DFG – German Research Foundation - at the Institute of Materials Physics, University of Münster, Germany. During March 2010 – April 2015, he worked as the University Chair Professor at University of Hyderabad. He had also been a Visiting Professor at the University of Aachen RWTH, Technological University of Darmstadt (Technische Universität Darmstadt), University of Erlangen (University of Erlangen–Nuremberg) and Karlsruhe Institute of Technology - Institute of Nanotechnology, Germany.

He has authored three expert level books on “Superplasticity” (1980), “Superplastic Flow: Phenomenology and Mechanics” (2001) and “Superplasticity: Common Basis for a Near-Ubiquitous Phenomenon” (2018), all published by Springer Verlag, Heidelberg-Berlin, Germany. The book of 1980 has now been republished as an eBook and in print form, along with 39 other books, under the new Springer series “Springer Book Archives” out of about 4500 books published by Springer Verlag in the period 1842 – 2005 (163 years). He has authored five book Chapters on “Reliability of Nanomaterials” (Elsevier, 2009), “Severe Plastic Deformation” (Trans. Tech. Publications, 2011), “Superplasticity in and Superplastic Forming of Al-Li Alloys” (Elsevier, 2013), “Superplastic Forming of Aerospace Materials” (Springer, 2016) and “Metal Forming at Very Low Strain Rates” (Elsevier, 2016). He has peer-reviewed international journals is 209 and peer-reviewed proceedings of international conferences is 86.

Ten technologies developed by him and his students are being used in Indian industries. He holds one European, one US and six Indian patents, and has applied for three more. He has been a consultant to Tata Motors, Steel Authority of India Limited, Tata Steel, Indian Stainless-Steel Development Association, Department of Atomic Energy, Indian Space Research Organization, Defence R&D Organization, Tata Consultancy Services and Aditya Birla S&T Company.

He is the first Indian engineer/ materials scientist to be conferred the higher ScD degree by the University of Cambridge, U.K. for his “outstanding research contributions”, and the first Indian to be awarded the ‘Forschungspreis’ (career research award, 1994) of the Alexander von Humboldt Foundation, Germany. (In 1985 he received the Fellowship of the Humboldt Foundation also). In 2001 he became the first recipient of the award “Gastwissenschaftler Programm fuer herausragende Wissenschaftler aus dem Ausland” (“Guest Scientist Program for Outstanding Scientists from Abroad”) of the Research Centre for Technology and Environment (FZK), Karlsruhe, Germany, which is open to scientists of all foreign nationalities working in any area of science and engineering.

He is a Fellow of the Indian National Academy of Engineering, Indian Academy of Sciences, National Academy of Sciences-India, Institute of Materials Minerals and Mining (London), Indian Academy for Mathematical Modelling and Simulation, Institution of Engineers (India), Life Fellow of the Indian Institute of Metals, Consulting Fellow of the World Innovation Foundation (London), Honorary Academician of the Bashkirian Academy of Sciences, Russia (formerly the Urals Division of the USSR Academy of Sciences), a Member of the Materials Research Society (USA), Materials Research Society of India, Asia Pacific Academy of Sciences, Society of Aerospace Manufacturing Engineers (India) and Indian Structural Integrity Society. He is a Chartered Engineer in India and the UK. He is an Honorary Member of the Indian Institute of Metals and the Institute of Indian Foundrymen and a recipient of the “For the sake of Honor” award of the Rotary Club, Chennai Central, India.

He was the Founder Professor In-charge of the Centre for Nanotechnology (CFN) at the University of Hyderabad. At Anna University, Chennai, he established the Siemens

Centre of Excellence in Life Cycle Management and the Centre for Technology Development and Transfer (CTDT). In addition, he has been the Chairman of important committees of the Defence R&D Organization and Department of Information Technology, Government of India. He served as a Member of the Joint Scientific Council, consisting of Indian and German scientists, which is responsible for approving projects to be jointly funded by the BMBF of Germany and the Department of Science and Technology, Government of India through the Indo-German Science and Technology Centre. From November 2012, he is the (first) Chairman of the Research Council of Defence R&D Laboratory, Hyderabad, the nursery of India's Missile Technology Program and now a part of the "APJ Abdul Kalam Missile Complex". He was honored by the presentation of a plaque for his contributions to "Materials Science and Engineering, Materials & General Engineering Education and Research over his entire career" at an international conference "Advances in Materials Processing and Characterization (AMPC) 2013" held on the Guindy campus of Anna University, Chennai during February 06-08, 2013.