

Professor Don A. Lucca

Don A. Lucca is currently Regents Professor and Herrington Chair in Advanced Materials in the School of Mechanical and Aerospace Engineering and a member of the faculty of the School of International Studies at Oklahoma State University. He also holds the position of Guest Scientist in the Center for Integrated Nanotechnologies Group (MPA-CINT) in the Materials Physics and Applications Division at Los Alamos National Laboratory. He received a BS degree from Cornell, MSE from Princeton, and PhD from Rensselaer Polytechnic Institute all in Mechanical Engineering. Prior to joining Oklahoma State in 1990, he worked for industry in the production of high precision mechanical components, and was on the engineering faculty at Ohio State University.



Since joining Oklahoma State, his research has been directed towards developing basic understanding of the mechanics and physics which govern microscale and nanoscale fabrication processes used to create ultraprecision surfaces and thin films, and to investigating the mechanical, chemical, electrical and photonic nature of the surfaces which result. His current work is aimed at the development of new techniques for the assessment of subsurface damage in semiconductors, the characterization of the nanomechanical properties of materials and thin films, and the creation of photonic nanocrystals. Lucca's previous work established the importance of nanometer scale tool geometries on the resulting force system in ultraprecision machining, and was among the first to experimentally quantify the resulting forces at nanometer depths of cut. More recently he has developed techniques based on ion channeling and photoluminescence spectroscopy for assessing subsurface damage in semiconductors.

Professor Lucca is a Fellow of the International Academy for Production Engineering (CIRP), the Society of Manufacturing Engineers (SME) and the American Society of Mechanical Engineers (ASME). He has served on the Board of Directors of the American Society for Precision Engineering and the North American Manufacturing Research Institution. For his contributions in the field of ion-solid interactions he was elected a Scientific Member of the Böhmsche Physical Society. He is a recipient of the Alexander von Humboldt Research Award for Senior Scientists, and has held positions of Visiting Professor at the Stiftung Institut für Werkstofftechnik at Universität Bremen and at the Politecnico di Torino. He was awarded a Mercator Professorship by the Deutsche Forschungsgemeinschaft in Germany, the Russell Severance Springer Professorship in Mechanical Engineering at the University of California, Berkeley and holds an honorary doctorate from Universität Bremen. He is the author of over 140 scientific publications including the book "Fundamentals of Surface Mechanics with Applications" co-authored with F.F. Ling and W.M. Lai.

Professor Lucca was elected to CIRP as a Corresponding Member in 1995 and became a Fellow in 1999. He has served as the Technical Secretary, Vice Chairman and Chairman of STC S. He has also served as a member of the Editorial Committee, F.W. Taylor Award Committee, Finance Committee, Credentials Subcommittee, and the CIRP Council. He is currently a member of the CIRP Board serving as Vice President, and will be the President of CIRP in 2017-2018. He has authored or co-authored 17 articles in the CIRP Annals Volume 1 and 10 keynote papers in Volume 2.