Laser based nanofabrication, additive nanomanufacturing, synthesis and functionalization of nanostructures

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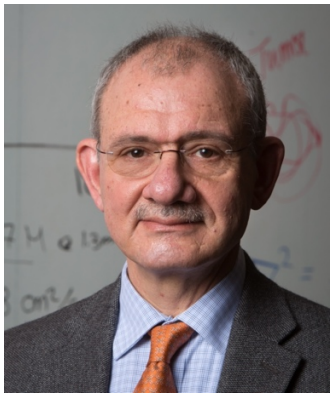

Abstract: Laser light irradiation enables precise control of interactions with materials across length and time scales. In this talk, I will review recent progress and future perspectives on laser aided nanomanufacturing, with particular attention on the fabrication of flexible electronics, the modification of atomic layered materials, the patterning of biological materials, the design and fabrication of hierarchical three-dimensional architected materials.

Bio: Costas P. Grigoropoulos is a Professor and the A. Martin Berlin Chair in Mechanical Engineering at the University of California, Berkeley. He is also Faculty Staff Scientist with the Environmental Energy Technologies Division of the Lawrence Berkeley National Laboratory. He joined the faculty of the Department of Mechanical Engineering at the University of California at Berkeley in 1990, after serving as an Assistant Professor of Mechanical Engineering at the University of Washington from 1986-1990. He received his Ph.D. in Mechanical Engineering from Columbia University in 1986. He has conducted research at the Xerox Mechanical Engineering Sciences Laboratory, the IBM Almaden Research Center and the Institute of Electronic Structure and Laser, FORTH, Greece. Grigoropoulos' current research interests are in micro/nano engineering, laser materials processing and micro/nanomachining, fabrication of flexible electronics and energy conversion devices, characterization of micro/nanofluidic transport, laser interactions with biological materials, design, and fabrication of three-dimensional mechanical metamaterials. He has published more than 300 research articles in archival Journals. He was a Miller Professor for basic research in science in 1999, a visiting Professor at ETH Zurich in 2000 and 2009 and a visiting Professor in Johannes Kepler University, Linz, Austria in 2008. He is a Fellow of ASME and SPIE, and recipient of the ASME Heat Transfer Memorial Award (2007) and Hawkins Lecturer at Purdue University (2018). He is Editor of the *International Journal of Heat and Mass Transfer*.