Abstract: Two photon polymerization is a 3D printing approach that relies on use of ultrashort laser pulses to selectively polymerize photosensitive materials at small length scales. The quadratic character of the two photon absorption probability allows one to overcome the diffraction limit and obtain structures containing features below one micrometer. In this talk, the use of two photon polymerization to create structures out of inorganic-organic hybrid materials (e.g., zirconium oxide hybrid materials) and polymers for medical device applications will be described.

About the speaker: Dr. Roger Narayan is a Professor in the Joint Department of Biomedical Engineering at the University of North Carolina and North Carolina State University. He is an author of over one hundred publications as well as several book chapters on processing, characterization, and modeling of biomedical materials. Dr. Narayan has edited several books, including the textbook Biomedical Materials and the handbook Materials for Medical Devices. He has been elected as Fellow of ASM International, AAAS, and AIMBE.