305b Nanotechnology in Tissue Engineering

Kristi Anseth

Science and technology at the nanoscale are fueling key advances in resolving biological questions and medical problems that were considered intractable just a few years ago. Just as advances in silicon chip technology revolutionized computing, the marriage of nano- and microfabrication technologies with biomaterials and biosystems has led to a biomedical revolution in the 21st century. Nanobiotechnology is accelerating advances in lab-on-a-chip diagnostic and sensing devices, drug delivery and targeting, gene therapy, textured surfaces for tissue regeneration, growth and repair, and nanomachines with molecular motors. This talk will illustrate specific examples where advances in nanotechnology as related to polymer and biomaterial science have provided a means to address a diverse array of biological systems that are important in tissue engineering and regenerative medicine.