UNIVERSITÀ DI PADOVA
Dipartimento
di Scienze Chimiche - DiSC

DiSC

Venerdì **6 Novembre 2026** alle ore **11:30** presso l'aula I

il Prof. Jonathan M. Zuidema

Assistant Professor and Lighthouse Beacon Foundation Scholar

Department of Mechanical Engineering, University of Kentucky
USA

terrà il seminario dal titolo:

Multiscale Biomaterials Chemistry: Towards Nervous System Repair

By integrating nanoparticle and microgel design concepts into multiscale biomaterials, the versatility of multiscale biomaterials can be exploited to improve outcomes across the field of tissue engineering. Inorganic, mesoporous nanoparticles, including porous silicon and mesoporous silica nanoparticles, offer several advantageous properties, including high surface area and pore volume for drug loading, ease of surface chemistry modifications, tunable nanoparticle size and pore diameters, and are biocompatible, making them attractive nanocarriers for drug deliver applications. These properties also make them especially useful in the incorporation of nanoparticles into biomaterial scaffolds to alter material properties, protect sensitive therapeutics during fabrication, and tailor drug release properties. Microgels, hydrogels composed of microparticles ranging in size from 1-1000 µm, have begun to emerge as one of the most promising building blocks of three dimensional structures. This is due to their unique properties, including porosity between particles allowing for cellular infiltration and nutrient/waste exchange, large surface area to volume ratios increasing cellular adhesion points, and shear-thinning enabled injectability. Using these nano- and micro-scale materials as building blocks, we are creating 3D-printed multiscale biomaterials to interface and improve outcomes in the nervous system.

La presenza della S. V. sarà molto gradita

Organizzatore

Prof. Alessandra Zanut

Il Direttore del Dipartimento

Prof. Stefano Mammi