



Centre for
Heart Lung Innovation
UBC and St. Paul's Hospital

Centre for Heart Lung Innovation Seminar Series

Advanced multifunctional fibers for tissue engineering and drug delivery



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Mechanical Engineering
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Friday, June 10th; 11:30 – 12:30 p.m.

ZOOM Virtual Seminar

(Meeting ID: 662 2255 0438; Passcode: 623137)

Hosted by Leili Rohani

“Engineered materials that integrate advances in polymer chemistry, nanotechnology, and biological sciences have the potential to create powerful medical therapies. My research is at the forefront and interface of cellular biology, microtechnology, and the science of biomaterials. The overarching goal of my research is to formulate and foster practical solutions that restore or enhance the health of individuals. Specifically, my lab is interested in developing advanced fibrous materials for tissue engineering and drug delivery. Fibers are 1D materials that are flexible and can be formed into literally any shape using well-established textile methods or 3D printing. Fiber-shape tissues with high anisotropic mechanical and chemical properties that are similar to those observed in native tissues can be engineered by 3D printing, electrospinning, and textile methods (e.g., embroidering, weaving, braiding, etc.) Further, fibers with diameters ranging from tens to hundreds of micrometers can be embroidered into tissues with minimum



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damage to the tissue for measuring biological markers or releasing drugs directly to the disease site. In this talk, I will present my group's recent efforts in producing advanced multifunctional fibers for use in tissue engineering and drug delivery. This talk will encompass our work on bioink development, methods for producing meter-long multifunctional hydrogel fibers with controllable biophysical and biochemical features, techniques used to assemble functional fibers and create highly complex fibrous constructs, and in vitro and in vivo models we use to evaluate the safety and performance of engineered fibrous materials for clinical translation."

This event is a Self-Approved Group Learning Activity as defined by the Maintenance Certification Program of the Royal College of Physicians and Surgeons of Canada



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