

HIGHLANDS IN CHEMISTRY SEMINAR SERIES



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“Janus-type” Block Copolymers: Supramolecular Strategies to Theranostic Nanomedicine”

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2:30PM ET

ZOOM

FACULTY HOST:
BOB MOORE

The ability to control molecules and understand their organization into discrete nanoscale arrays that exhibit unique properties affords the opportunity for transformative advances in chemistry and material science. Specifically, for biomaterials and nanomedicine, structural and chemical variations at the molecular level will influence morphology and mechanical properties as well as stability and degradation rates of the resulting material. Herein, a library of self-assembling linear-dendritic block copolymers (LDBC) comprised of a hydrophilic polyamide-based dendrimer covalently linked to a hydrophobic linear polyester will be highlighted. These polymers are shown to be capable of forming a variety of supramolecular aggregates in water—particularly those possessing a biomimetic nature. In this lecture, the synthesis and characterization of the LDBC library as well as their resulting nano-aggregates will be discussed. Results of this study will demonstrate the significant contribution of “bottom-up” approaches towards efficient materials for bio-imaging and theranostic nanomedicine.

