Stimuli-Responsive Polymeric Materials for Diagnostics and Delivery

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Polymeric materials such as polymer brushes, hydrogels and nanofibrous coatings on planer and curved interfaces that are amenable toward facile multi-functionalization with biological recognition, imaging, therapeutic and targeting agents are attractive platforms for addressing many of the challenges faced in conventional diagnostics and therapy. The talk will report our approaches toward fabrication of novel polymeric coatings, hydrogels, nanogels and nanofibers that can modulate recognition of analyte or delivery of therapeutic agents in a stimuli-responsive manner. In particular, I will highlight the utilization of simple, yet powerful, organic transformations to tailor polymeric materials for target applications. Examples of tailoring functional interfaces either through covalent or non-covalent interactions to impart particular attributes necessary for certain applications from our recent work will be present.

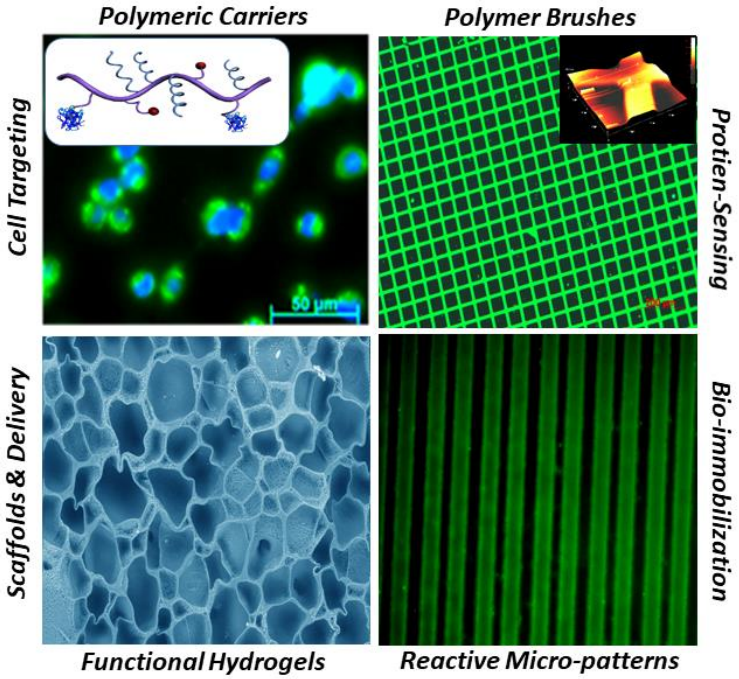

Figure. Polymeric Platforms for Biomedical Applications.