

Seminar

Functional Polymer Architectures in Sensing and Theranostics

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Date: Wednesday, 25 November 2025, 10:30–12:00

Venue: Faculty of Eng. Bldg. #4, 3F, 43 Lecture Room

Abstract:

When nanoparticles enter bloodstream, proteins rapidly adsorb onto their surfaces, forming a protein corona that informs the immune system and triggers clearance from circulation. While strategies aim to prevent protein adsorption, complete avoidance is not feasible. Our approach takes a different direction: instead of avoiding it, we engineer it—intentionally incorporating specific proteins to modulate immune recognition. Using this strategy, we improve the hemocompatibility of PEG-based nanoparticles. In parallel, we explore biomaterial nanoparticles, leveraging their intrinsic biological compatibility. By mimicking or co-opting these endogenous particles, we aim to render therapeutic nanoparticles effectively invisible to the immune system.

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