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**Molecular Exchange Kinetics in Polyelectrolyte Complex Micelles** HAO WU, SAMANVAYA SRIVASTAVA, JEFF TING, MATTHEW TIRRELL, The University of Chicago — Polyelectrolyte complex (PEC) micelles form when oppositely charged block polyelectrolytes are mixed together in aqueous media. These nanoscale PEC micelles have varied biomedical applications including drug and gene delivery, tissue engineering and diagnostics. However, much less is known about the structural stability of the PEC micelles, particularly the mechanism fundamentally governing the molecular exchange kinetics between the micelles. We will present a systematic study of structural stability and molecular exchange kinetics in polyelectrolyte complex micelles (PECs) using dynamic light scattering, small-angle X-ray scattering (SAXS) and time-resolved small-angle neutron scattering (TR-SANS) as a function of various parameters, including core-forming block length, charge density, salt concentration and polymeric conformation.

Hao Wu  
The University of Chicago

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