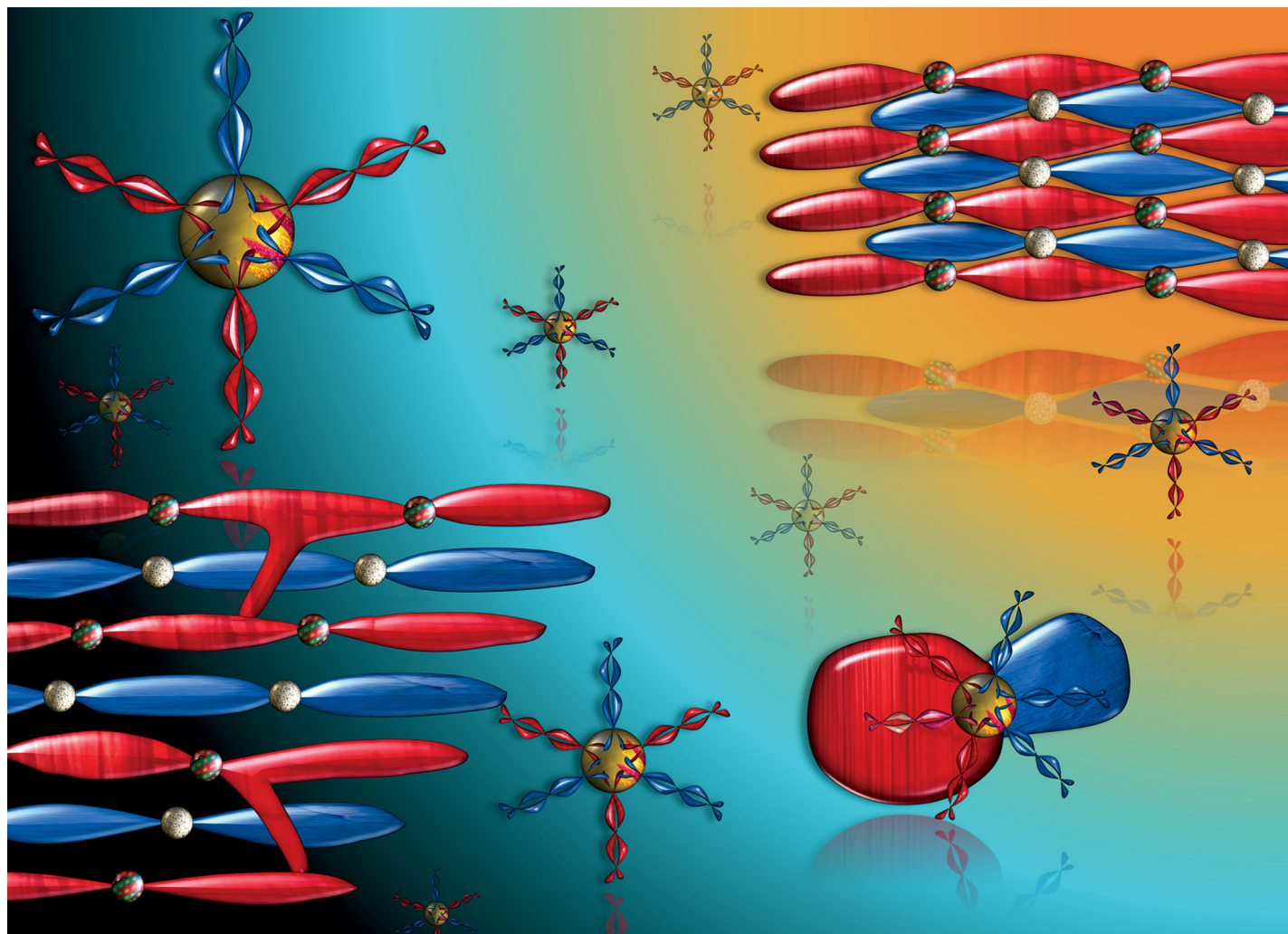




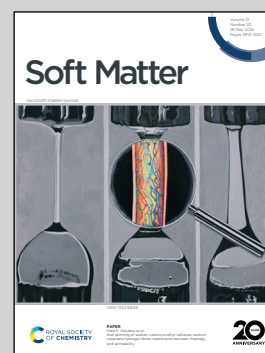
Showcasing research from Professor Awaneesh Singh's Multiscale soft matter simulation lab, Department of Physics, Indian Institute of Technology (BHU), Varanasi, India.

Self-assembly kinetics of miktoarm star polymers in diverse solvent environments: insights from dissipative particle dynamics simulations

Our study uses dissipative particle dynamics simulations to investigate the self-assembly kinetics of miktoarm star polymers with compositional and topological asymmetries. Solvent quality significantly influences morphology: good solvents yield porous structures with slow domain growth, while poor solvents promote denser, ordered morphologies with faster growth. Domain evolution follows a power-law behavior, with deviations based on topology and interaction asymmetry. Solvophobicity alters thermodynamic properties, affecting assembly kinetics. These insights advance the design of polymer materials with tailored functionalities under varied solvent conditions.

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See Devendra Kumar Verma and Awaneesh Singh, *Soft Matter*, 2025, **21**, 3965.