



Contribution ID: 59

Type: not specified

Progressive Development of Complex Synthetic Cells via Inverted Emulsion

Synthetic cells are vital for modeling cellular complexity. We present a progressive inverted emulsion method that transitions from robust on-chip vesicle production to engineering complex bilayers with ~95% asymmetry. By integrating lateral phase-separation (L_o/L_d domains) and domain-specific protein binding, we induce spontaneous curvature leading to autonomous budding and fission. These biomimetic models provide essential experimental benchmarks for digital twins in structural cell biology.

Presenter: Dr YANDRAPALLI, Naresh (Saarland University)

Session Classification: POSTER SESSION