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Interactive Phase Separation and Crystallization: from Dynamically Symmetric to Dynamically Asymmetric Blend Systems

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Crystallization and phase separation are two intriguing phase transitions in nature and have been intensively studied in the past decades. Recently, the mechanism of simultaneous or interactive transitions of crystallization and phase separation of binary blend has became a popular research topic due to its importance to both fundamental understandings as well as technological applications. In this presentation, interactive phase separation and crystallization will be discussed. Situations where the two components are dynamically similar (symmetric) and dis-similar (un-symmetric) will be compared. Some interesting pattern formation, step-wise growth mechanism, and structure/morphology formation mediated under the competition between thermodynamic perturbation and asymmetric viscoelasticity will be presented.