

## **Elastic Inhomogeneity Effects on Spinodal Decomposition in Ternary Alloys**

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The effects of elastic inhomogeneity (i.e., differences in elastic moduli of phases in a microstructure) on microstructural evolution are well-documented in binary systems. Examples of these effects include rafting (microstructural evolution in inhomogeneous systems under applied stress), phase inversion (in which a softer phase with a lower volume fraction changes its morphology from a precipitate to a matrix, with the harder phase doing the reverse), and instabilities in thin-film instabilities leading to their break-up. However, the effects of modulus mismatch in ternary systems remain largely unexplored. This study examines ternary spinodal decomposition leading to two-phase microstructures; more specifically, this paper will present our results from ongoing work on the effect of elastic inhomogeneity on early-stage decomposition and its possible role in altering the course of microstructural evolution.

*Keywords: phase-field modelling, elastic inhomogeneity, spinodal decomposition, microstructural evolution*