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Responsive gels and membranes

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We use computer simulations and analytical method to explore and analyze effects of composition heterogeneities in elastic membranes and gels. In particular, we focus on shape pattern formation in thin networks and elastic closed membranes driven by the presence of composition heterogeneities. We study the crumpling of multicomponent elastic membranes in response to changes in external conditions, as well as the spontaneous buckling transition of heterogeneous elastic shells into regular and irregular polyhedra.