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**Capillary stability of nanowires in the presence of dislocations**[1]
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— Nanometer scale structures are often unstable with respect to capillary forces. For instance, wires may be susceptible to a pearling (Rayleigh) instability or to coarsening. A simple continuum theory is presented that predicts that sufficiently small second phase wires formed around dislocations are stable to both forms of structural instability. The elastic interaction is found to balance the effects of surface energy. Infinitesimally small perturbations to an isolated wire are found to decay for wires smaller than a critical size. For an ensemble of wires smaller than the critical size, a driving force is found for inverse coarsening. These results imply that thermally stable nanometer-scale wires can be produced.

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