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# Role of substrate morphology in ion induced dewetting of thin solid films

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## Abstract

We investigate the role of the substrate morphology in the dewetting of ultrathin chromium films irradiated with 30 keV Ga ions. Silicon surfaces with different roughness were used as substrates for the films. The results of the irradiation experiments and of related simulations indicate that the chromium films can undergo a dewetting-like process through the two standard channels that show up for liquids, namely the spinodal channel, and the dewetting by heterogeneous nucleation. The two processes are competitive, and the prevailing one can be predicted and selected according to the characteristics of the substrate.

Keywords: ions; spinodal dewetting; heterogeneous nucleation; substrate topography; FIB

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