Crystallization Kinetics in Thin Film

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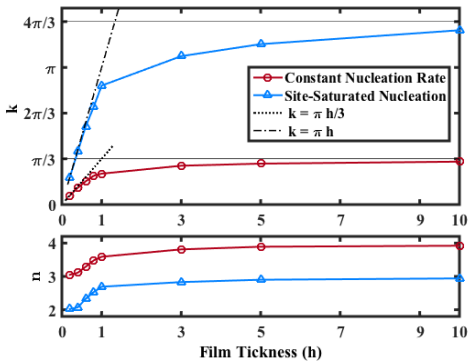
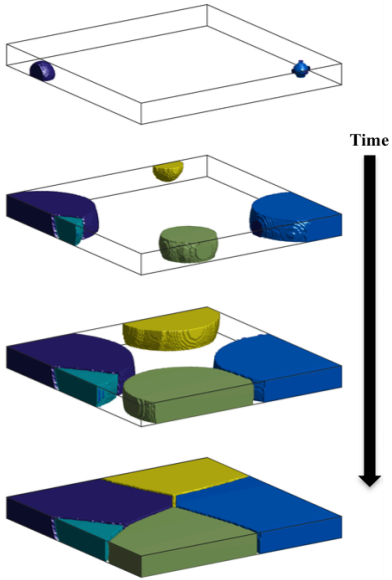
Amorphous thin films are inherently unstable and tending to reduce their energy level by transforming to crystalline structures. Voorhees's group has been able to develop a numerical model based on the level-set method to address fundamental questions in kinetics of thin film crystallization.

This analysis reveals that the JMAK framework can yield a spurious thickness dependent activation energy for crystallization. To overcome this problem, an analysis is proposed that allows all the kinetic parameters, including the nucleation rate and interface growth velocity in thin films to be determined from experiment.





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