# Nanoscale Morphology Control Using Ion Beams with Applications in Materials and Life Sciences

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Low energy ion irradiation of a solid surface can be used to control surface morphology on length scales from 1 micron to 1 nanometer. In this lecture, I will describe how we are using ion beams to modify the surfaces of solid-state materials; report some experiments and models that illuminate the kinetics of evolution of surface morphology; and present some applications of ion beams in surface kinetics, self-organized nanostructures, and the fabrication and use of single-biomolecule detectors.

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