

Modeling nanoscale features in irradiated materials

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Abstract

Irradiation gives rise to the production of nanoscale features that can have different characteristics depending on the material and the irradiation conditions. These features can have detrimental effects in the mechanical or optical properties which limit the lifetime of materials such as those considered for fusion applications.

On the other hand, irradiation can also change the electrical and magnetic properties of materials. In this respect, there are interesting and sometimes controversial results regarding the magnetic properties of irradiated graphene.

In this talk we describe how atomistic models such as molecular dynamics and kinetic Monte Carlo simulations can help in the understanding of how nanoscale features are produced under irradiation and how they evolve over time in different materials.