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Applications of the isotropic etching on roughening and smoothing of substrates composed of different materials in nanotechnologies MARIJA RADMILOVIC-RADJENOVIC, BRANISLAV RADJENOVIC, Institute of Physics — In this paper a level set method has been applied in order to study the influence of the isotropic etch process on dynamics of the roughening and smoothing of the nanostructures. The main goal of this paper is to show how the same process such as isotropic etching leads to roughening of the nanocomposite materials while in the case of homogeneous materials can lead to a smoothing. The obtained three-dimensional (3D) simulation results clearly indicate that surface roughness could be reduced by the isotropic etching. It was also found that some roughness characteristics obey simple scaling laws. Results, presented here, apart from their theoretical relevance, have practical implications for surface treatments of various materials.

Marija Radmilovic-Radjenovic
Institute of Physics

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