

Abstract Submitted
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3D simulations of surface roughness in nanotechnologies MARIJA RADMILOVIC-RADJENOVIC, BRANISLAV RADJENOVIC, Institute of Physics — Plasma etching represents one of the basic steps used in semiconductor processing for the fabrication of electronic devices. One of the limiting factors in applications of plasma etching in new generations of plasma technologies is controlling of plasma induced roughness or surface roughness by plasma etching. Decreasing the roughness of a surface will usually increase exponentially its manufacturing costs. This often results in a trade-off between the manufacturing cost of a component and its performance in application. In this paper we have studied roughening of nanocomposite materials during plasma etching for by using a level set method [1]. It was found that the presence of two phases with different etch rates affects the evolution of the surface roughness. The obtained results apart from their theoretical relevance, have practical implications for surface treatment of nanocomposite materials.

[1] M. Radmilović-Radjenić, B. Radjenović and Z.Lj. Petrović, *Thin Solid Films* **517** (2009) 3954.

Marija Radmilovic-Radjenovic
Institute of Physics

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