

**EFFECTS OF THREE-DIMENSIONAL EHRlich-SCHWOEBEL BARRIER ON  
TEXTURE SELECTION DURING COPPER NANOROD GROWTH**

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## **ABSTRACT**

This work looks at the effects of the three-dimensional Ehrlich-Schwoebel (3D ES) barrier in determining the selection of preferential texture during nanorod growth. Molecular dynamics simulations are employed to show that the texture of nanorods fabricated through oblique angle deposition is defined by the 3D ES barrier along with geometrical shadowing effects and the thermal dynamics of surface faceting. The results of these simulations agree with a recent experimental study of the texture of Cu nanorods grown during physical vapor deposition. Furthermore, the simulations offer insights into when and how the 3D ES barrier will be effective in texture selection. The insights presented in this work may be applied to texture design during the growth of various nanorods.