

Advanced Nanofabrication by Dynamic Shadowing Growth

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Summary

Dynamic shadowing growth (DSG) is a simple nanofabrication technique that combines oblique angle deposition (OAD) with substrate manipulations and source controls in a physical vapor deposition system. The geometry shadowing effect is the dominant growth mechanism resulting in the formation of various nanostructure arrays by programming the substrate rotation in polar and/or azimuthal direction. With recent advance in a multilayer deposition procedure, one can design complex and multifunctional heterogeneous nanostructures. In addition, with a co-deposition system of two or more sources, novel nanocomposites or doped nanostructure arrays can be produced, which results in nanostructures with different morphology. In this talk, we will highlight some of the recent progress in nanofabrication by DSG and its applications as nanomotor and hydrogen storage materials. The theoretical challenges in modeling the growth process will also be presented.

