POD011

Predicting coating uniformity on substrates with planetary rotation in 2D and 3D

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Recent advancements in the fundamental knowledge of PVD and PECVD mechanisms enabled high-fidelity simulation of numerous processes powered by vapor deposition. Together with the advancements in physics solvers and the ever-improving access to high-performance computing, it has become possible to utilize numerical simulation for predicting the coating uniformity and, to some extent, coating properties. All this can be done on realistic 3D substrates or even industrial chambers with realistic loading. This contribution discusses the challenges of pre-processing and post-processing of 3D simulation data. It also illustrates, on several examples, what kind of additional insight can be obtained from 2D and 3D coating simulation on realistic substrates.

Keywords
vapor deposition
numerical simulation
coating prediction
3D simulation
coating properties