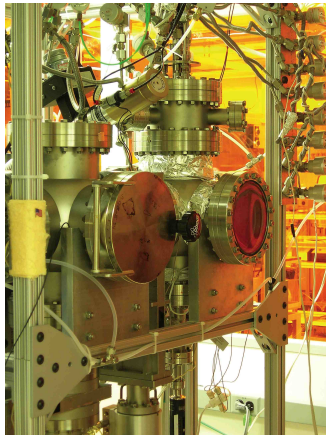


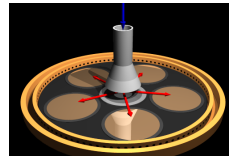
Thin film process simulation and design

Raymond A. Adomaitis, *Chemical & Biomolecular Engineering, ISR*



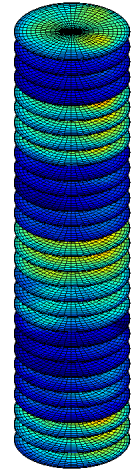
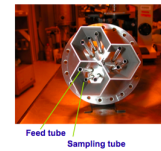
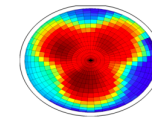
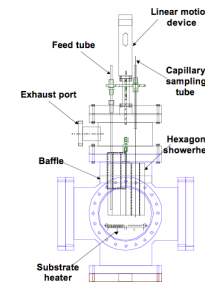
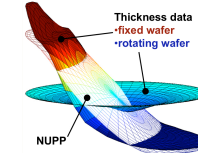
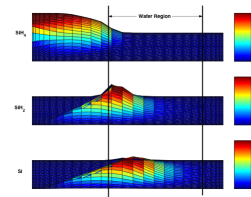
Focus Simulation, mathematical analysis, and process design challenges in understanding and optimizing thin-film manufacturing systems.

Scope Close coupling of theory, simulation, and experimental work; close collaboration with multiple established industries and start-up companies.



Accomplishments

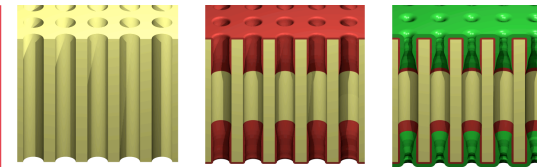
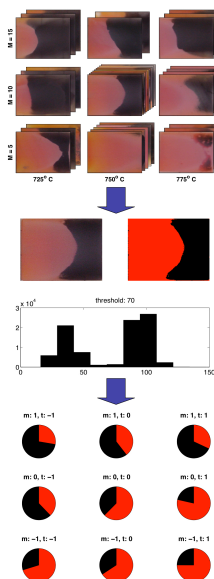
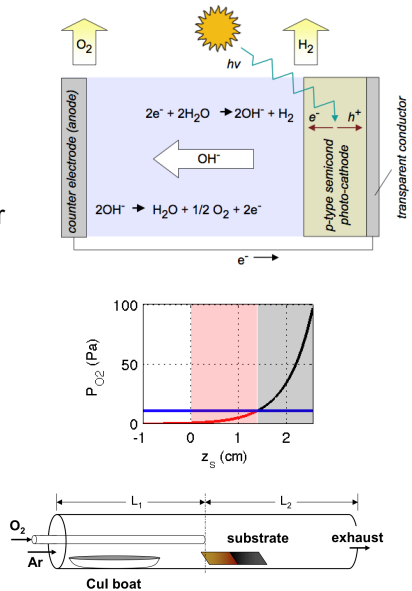
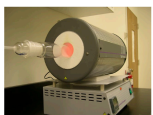
- New approaches to modeling and control of industrial CVD reactors
- Highly flexible, spatially controllable CVD reactors
- Response-surface models for reactor optimization



New materials, processes, and devices, particularly energy and nanomanufacturing related, have increased research interest in thin film technologies.

Solar H2

Modeling and experimental development of semiconductor materials for solar splitting of water to produce hydrogen and oxygen (with Profs Ehrman, Zachariah).



Energy storage Multiscale simulation of Atomic Layer Deposition Processes for manufacturing nanoscale electrochemical supercapacitors (with Profs Rubloff, Lee, Jacob).

