Recent Funding (Sang Eon Han)

NSF CAREER Award (DMR-1555290)
“CAREER: Symmetry Control in Photonic Nanostructures for Enhanced Optical Properties”
$500,000, 5 years

NSF Scalable Nanomanufacturing Program (CMMI-1635334)
“SNM: Scalable Surface Corrugation of Silicon Surfaces for Enhanced Light Trapping in Solar Cells”
with S.M. Han, S.R.J. Brueck, P.R. Schunk, N.V. Flor
$950,000, 4 years

(AFRL) (PO CP0040209)
“Microsphere-Based Solar Independent Radiative Coolers”
with S.M. Han
$164,000, 1 year
Symmetry-breaking nanostructures for
- Efficient solar photovoltaics
- Hot-electron-based photodetectors
- Biomimetic light-scattering materials
The NSF Scalable Nanomanufacturing Program focuses on scalable production of 20-µm-thick c-Si films via laser scan lithography. Follow-up work by S.E. Han is accompanied by experimental and theoretical advancements led by Han & Han and Schunk, respectively. The integration of passivation and AR techniques is demonstrated in the device fabrication, with visualization by Flor.
AFRL grant (microsphere-based cooling coating)