Abstract Submitted
for the 4CS20 Meeting of
The American Physical Society

Modeling Reflectance Spectra of Nanorod Arrays by Arrays of Light Sources[1] CHRISTIAN LANGE, T.-C. SHEN, Utah State University — It is known that carbon-nanotube forests, nanopillar arrays, and other formations of quasi-periodic nanostructures of various materials (semiconductors, semimetals, and metals) can display a very low light reflectance over a wide range of wavelengths, and that the reflectance eventually starts to rise beyond an onset wavelength. As these materials can be quite reflective in planar form, this phenomenon indicates that morphology rather than material plays a dominant role. However, a quantitative analysis of the reflectance spectra of periodic structures has yet to be established. As a first step, we use an array of light sources to model the reflection from an array of nanorods. We find that similar spectra can be generated. Details of our modeling and comparison with FDTD simulations will be presented.

[1]This research was supported by the Peak Summer Research Fellowship

Christian Lange
Utah State University

Date submitted: 24 Sep 2020 Electronic form version 1.4