

## A Study on the Scattering and Absorption Efficiencies of Si-Ag Coaxial Nanowire

Scattering and Absorption Efficiencies of Si-Ag Coaxial nanowire (NWs) were simulated using Mie-Lorentz scattering approach. The thickness of Ag shell was fixed at around 10 nm with Si core diameter of (10, 20, 30 and 40) nm. Scattering Efficiencies and Absorption Efficiencies of core-shell nanowire as a function of wavelength (300-2000 nm) within various core diameters were calculated. The study shows a remarkable behavior of scattering for un-polarized light in Silicon nanowire (core only) with wavelength of (320-500nm). In other words, adding Ag shell has decreased the scattering efficiency of core-shell nanowire for all diameters.