SCIENCE SEMINAR

Thursday, October 18 - Carson Taylor Hall room 322

Mona Hassan Alsaleh

Engineering Doctoral Candidate, Louisiana Tech University

presenting

"Effective Magnetic and Electric Response of Composite Materials"

Metamaterials are artificial materials constructed and designed to provide unique optical properties not found in naturally existing materials, such as magnetism at high frequencies and negative index of refraction. We present an analytical model of the magnetic response for two different designs of metamaterials (MMs) including a pair of metallic stripes separated by a dielectric material and metallic bowtie separated by dielectric material. The responses of the two systems were compared to the exact numerical calculation performed by utilizing Comsol multiphysics software and the results reveal an excellent matching. Additionally, negative index materials (NIMs) were designed using Comsol Multiphysics in which the optical responses were extracted, showing negative index of refraction at THz regimes not only for metallic parallel stripes but also for semiconductor stripes immersed in a dielectric material.

Come at 3:30pm for refreshments, speaker at 4:00pm