



Electrical Sciences and Computer Engineering (ESCE) Seminar

Electromagnetic Metamaterials for Terahertz Science – from Spatial Light Modulators to Imaging

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Abstract:

Electromagnetic metamaterials have demonstrated unprecedented control over light matter interactions and have realized exotic properties difficult to achieve with natural materials. The ability to attain on-demand spatio-temporal electromagnetic properties enables metamaterials to function as real-world devices. I will discuss several realizations of single pixel imaging systems that rely entirely on all-electronic metamaterial spatial light modulators and highlight the future of this exciting field.

Speaker Bio:

Prof. Padilla has been in the metamaterials field since 2000, when he co-authored the first paper on negative index materials with Smith. He is particularly well known for his work at terahertz (THz) frequencies, as well as in the area of active and dynamically controlled metamaterials. While working under a Director's Postdoctoral Fellowship at Los Alamos National Laboratory, he led efforts to demonstrate dynamic tuning of a semiconductor hybrid metamaterial by photodoping and voltage control. Both of these key experiments are now widely recognized and cited. Prof. Padilla's lab specializes in the THz, infrared, optical and magneto-optic properties of novel materials utilizing various spectroscopic methods, including Fourier transform spectroscopy and ellipsometry. His recent interests include tailoring the emissivity of objects with metamaterial coatings, and the use of active metamaterial arrays as components in THz and infrared imaging systems.

Friday, March 11, 2016

2:00 PM

B&H Room 190

Refreshments served at 1:30 PM