



Department of Electrical and Computer Engineering

Title: “Antenna Applications of Microwave Metamaterials. Theory, Simulations and Results”

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Room XOD02 – 013, New Campus – University of Cyprus

Abstract:

Explorations of artificial materials for manipulating electromagnetic waves began at the end of the 19th century. A metamaterial affects electromagnetic waves that impinge on or interact with its structural features, which are smaller than the wavelength. It is a composite material that is purposely engineered to provide properties that are not otherwise attainable with ordinary materials. Electromagnetic properties that come from the metamaterials are certainly indirectly related to the constituent materials, but they are mostly derived from the way they are structured (Split Ring Resonators).

In this presentation, the theory of Negative Refraction Index materials is described along with the basic electromagnetic properties that make these materials realized. In the second part, a microstrip patch antenna fabrication is presented with its simulation results. The next part shows the application of the metamaterial technology in the microstrip patch antenna design and appropriate simulations also displayed. Finally, conclusions and future work on the referenced project is presented.

Biography:

Graduated from Hellenic Air Force Academy on 2009 with Honors, on Telecommunications and Radar Systems. Received B.Sc. degree in Electrical and Computer Engineering from the University of Cyprus in 2014 and M.Sc. on the same Department. Current research is based on metamaterials and specific the design of a microstrip patch antenna for RF energy harvesting, on 2.4GHz.