Center of Excellence in Intelligent Engineering Systems

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CENTER OF EXCELLENCE IN INTELLIGENT ENGINEERING SYSTEMS

Speaker: Dr. Hatem Rmili

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Hatem Rmili was born in Sakiet Sidi Youssef, Tunisia. He received the B.S. degree in general physics from the Science Faculty of Monastir, Tunisia in 1995, and the DEA diploma from the Science Faculty of Tunis, Tunisia, in quantum mechanics, in 1999. He received the Ph.D. degree in physics (electronics) from the University of Bordeaux 1, France, in 2004. From December 2004 to March, 2005, he was a research assistant in the PIOM laboratory at the University of Bordeaux 1. During March 2005 to March 2007, he was a Postdoctoral Fellow at the Rennes Institute of Electronics and Telecommunications, France. From March to September 2007, he was a Postdoctoral Fellow at the ESEO engineering school, Angers, France. From September 2007 to August 2012, he was an associate professor with the Mahdia Institute of Applied Science and Technology, department of Electronics and Telecommunications, Tunisia. Actually, he is an Associate Professor with the Electrical and Computer Engineering Department, Faculty of Engineering, King Abdulaziz University, Jeddah, Saudi Arabia. His main research activities concern applied electromagnetics (antennas, metamaterials...)

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Date: **Tuesday, April 29, 2014**

Time: **3:00PM**

Venue: **Building 42A, Third floor, Room 333**

Title

Metamaterials: Basic concepts and applications

Abstract

Metamaterials are artificial periodic or nonperiodic structures composed of electromagnetic structures, whose function is due to both the cellular architecture and the chemical composition. In large part, due to metamaterials, the classical subject of electromagnetism and optics has experienced a number of new discoveries and advances in research. The metamaterial has the ability to control electromagnetic waves arbitrarily in theory. After the experimental realization of invisible cloaks in the microwave and optical regimes, an even larger explosion of interest has occurred in metamaterials, which can be designed to have electromagnetic properties difficult or impossible to find in nature. However, compared to invisible cloaks, metamaterial antenna is an important part in the research of metamaterials, which is more close to the real engineering applications, including gradient-index metamaterials, zero-index metamaterials, and metasurface.

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