



**University of Pavia**

**Ph.D. School of Electrical and Electronics Engineering and Computer Science**

## **SEMINAR**

### **Metamaterials and their applications in acoustics, microwaves and optics**

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**13<sup>th</sup> October 2016, h 15.00, lecture room Floor D**  
**Department of Electrical, Computer and Biomedical Engineering**

With the term "metamaterials" (MTM) we refer to the wide family of artificially engineered electromagnetic materials and, thus, not existing in the nature, designed through the intrusion of given inclusions with proper shape and dimensions in a host medium. The surprising features of metamaterials, their easy large-scale realization, and the results obtained by several different groups both at the European and worldwide level, allow nowadays to employ metamaterials as a suitable solution to overcome the traditional limits of current devices realized with conventional materials. In this talk the last results obtained at Roma Tre on possible, practical applications of metamaterials in acoustics, microwaves and optics are shown.

**Bio:** Prof. Alessandro Toscano was born in Capua, Italy, on June 26th 1964. He obtained the Laurea Degree and the Ph.D. degree in Electronic Engineering from "La Sapienza" University, Rome, Italy in December 1988 and September 1993, respectively. Since December 2011 he is Full Professor of Electromagnetic Field Theory at the Department of Engineering of "Roma Tre" University where he is now member of the Academic Senate. The research activity of Alessandro Toscano is focused on metamaterials and non conventional media with the ultimate aim to respond to the need to develop new technologies and to design new components for protecting the environment and the human health. His contributions include: (i) development of finite element - boundary integral methods to solve longstanding problems involving non-conventional materials; (ii) design of metamaterial inclusions and metamaterial-based components to solve practical problems in acoustics, electromagnetics and optics. His work to date has resulted in more than 100 journal papers, and more than 200 conference papers.

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