

Seminar On

**Gradient-index metamaterials and spoof surface plasmonic waveguide**

by

**Professor Hui Feng Ma**

**Southeast University**

**Date** : ~~04 October 2016 (Tuesday)~~ **11 October 2016 (Tuesday)**  
**Time** : **11:00 am – 12:00 noon**  
**Venue** : **Room 15-202, meeting room of State Key Laboratory of Millimeter Waves, 15/F,  
Lau Ming Wai Academic Building, City University of Hong Kong**

**Abstract**

Metamaterials are artificial structures composed of periodic or non-periodic subwavelength macro-cells, which have abilities to control the effective medium properties by designing the macro units to constitute special materials that do not exist in nature. Therefore, metamaterials can be used to manipulate electromagnetic waves and produce new physical phenomena such as negative refraction, perfect imaging, and perfect cloaking, etc. Metamaterial has received intensive attention in scientific communities, whose related outcomes have been selected as "Top Ten Scientific Breakthroughs" three times by the Science magazine. In this presentation, I will give a brief introduction of metamaterials, and then present some microwave devices made up of gradient-index (GRIN) metamaterials, such as flat lens, Luneburg lens and ground-carpet cloak, which are composed of sub-wavelength non-resonant unit cells. Besides, I will present a spoof plasmonic waveguide made up of ultrathin corrugated metallic strip and a matching transition to make the high-efficiency conversion between the traditional waveguide and such a plasmonic waveguide. A leaky-wave radiation based on periodically-modulated plasmonic waveguide will also be presented in the presentation.

**Biography**

**Hui Feng Ma** received the B.S. degree in electronic engineering from Nanjing University of Science and Technology, Nanjing, China, in 2004, and the Ph.D. degree from the State Key Laboratory of Millimeter Waves, Southeast University, Nanjing, in 2010. He joined the School of Information Science and Engineering, Southeast University, September 2010 and was promoted to an Associate Professor in April 2011 and a Full Professor in April 2015. His current research interests involve metamaterial antennas, invisible cloaks, and other novel metamaterial functional devices including theoretical design and experimental realization.

In 2010, his research of three-dimensional ground carpet cloak realized by using of metamaterials has been selected as one of the "10 Breakthroughs of Chinese Science in 2010". He received the Second Prize of National Award for Natural Science, China, in 2014, and the First Prize of Natural Science from Ministry of Education, China, in 2011.

**\*\*\* ALL ARE WELCOME \*\*\***

**Enquiries:**

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