



**IEEE Southeastern Michigan Section
Spring Section Conference & Dinner
Thursday, Mar 29, 2007 5pm – 9pm
Fairlane Center, University of Michigan – Dearborn**

**Speaker for Chapters IV (Antennas Propagation, Electron Devices, Microwave Theory and Techniques)
& VI (Geoscience and Remote Sensing)**



"Negative Refractive Index Materials Based on Transmission Lines"

Dr. Anthony Grbic

Professor of Electrical Engineering & Computer Science
Department of Electrical Engineering and Computer Science
University of Michigan, Ann Arbor

Abstract:

This talk will begin with a brief introduction to artificial materials (metamaterials) that possess simultaneously negative values of permittivity and permeability. These materials have received widespread attention in recent years and have been the subject of an intense research effort. Since the material parameters are negative, these peculiar materials exhibit a number of counter-intuitive electromagnetic phenomena including a negative index of refraction. Various implementations of negative refractive index metamaterials have been pursued in the last few years, but this talk will focus on those based on transmission-line networks. These microwave structures consist of transmission lines loaded with reactive elements. Both planar and volumetric implementations of metamaterials will be presented and their operation explained. The design of a planar negative refractive index lens made of such structures, that can achieve subwavelength resolution at microwave frequencies, will also be reviewed. Finally, possible applications of these new materials will be discussed.

Biography:

Anthony Grbic received B.A.Sc., M.A.Sc. and Ph.D. degrees in electrical engineering from the University of Toronto, Canada in 1998, 2000 and 2005, respectively. He is currently an Assistant Professor in the Department of Electrical Engineering and Computer Science at the University of Michigan. His research interests include negative refractive index metamaterials, periodic structures, printed antennas, microwave circuits and fundamental electromagnetic theory.

Evening Schedule:

4:30pm – 5:00pm Registration and Check-In
5:00pm – 5:45pm First half technical sessions, seven parallel sessions for chapter speaker
5:45pm – 6:00pm Vendor exhibition and networking
6:00pm – 6:45pm Second half technical sessions, seven parallel sessions for chapter speaker
6:45pm – 7:15pm Vendor exhibition and networking
7:15pm – 8:00pm Buffet Dinner from Park Place Catering
7:30pm – 8:00pm Awards program during dinner
8:00pm – 9:00pm Keynote speaker

You get your choice of two (2) of the fourteen technical session, plus networking, vendor showcases, dinner and the keynote speaker.

Registration will be online beginning in February at <http://www.ieee-sem.org>: \$25 for IEEE Members (including members of other ESD Affiliate Council Societies), \$30 non-members, \$10 students/retirees/unemployed. Location is: 19000 Hubbard Drive, Dearborn, Fairlane Center Building, University of Michigan – Dearborn. This event is a technical and professional service to the local IEEE members – this is not a "fundraiser". Contact: Prof. Chris Mi (mi@ieee.org), Conference Chair.