

**IEEE KITCHENER-WATERLOO**

**IEEE MTT-Chapter Presentation**

**Dr. Cyrus Shafai**

**"Application of Reconfigurable Ground Planes to RF Phase Shifters and Frequency Agile Antenna "**

**Abstract:**

This presentation will give a background to some of the RF MEMS work which has been done at the University of Manitoba. Focus will be on reconfigurable ground plane technology. Two technologies have been developed; thin film membranes in the ground plane, and micro-spring supported membranes in the ground plane. These flexible membranes allow the reshaping of the ground plane location, and so enable control of the performance of microwave devices over the ground planes. Usage in phase shifters and frequency agile antenna will be shown. Benefits of reconfigurable geometry structures include analog control of device performance and they are not limited to low power handling capacity. Performance of reconfigurable RF MEMS devices constructed and tested in our laboratories will be shown.

**Biography:**

Dr. Cyrus Shafai is an associate professor in the Department of Electrical and Computer Engineering at the University of Manitoba. He received the B.Sc. degree in Electrical Engineering from the University of Manitoba in 1990, and the M.Sc. degree in Electrical Engineering from the University of Manitoba in 1993 for his development of the Scanning Resistance Microscope. He received the Ph.D. degree in Electrical Engineering from the University of Alberta in 1997. His principle research was the development of a micromachined on-chip Peltier heat pump. His current research includes MEMS based reconfigurable surfaces for wireless applications. His investigations have focused on adaptive antenna with continuously variable frequency control and analog/digital phase shifters. He has consulted with InfoMagnetics Technologies Corporation (Winnipeg, Manitoba) on the design of micromachined RF devices and phase shifters.

**DATE: Thursday May 6, 2004**

**TIME: 2:00 pm**

**LOCATION: EIT 3142**



**Invited by Prof. Raafat Mansour  
IEEE MTT-Chapter Presentation**