



## The Electromagnetics Centre Seminar

School of Electrical & Electronic Engineering,  
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In Co-operation with IEEE UKRI (MTT/ED/AP/LEO)  
Societies Joint Chapter  
& IEEE University of Manchester Student Branch

### 'Design Optimization of lumped element circulator Based on Inductance Eigenvalue Evaluation'

By: Dr Taro Miura  
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- **Date: Tuesday 7 June 2005**
- **Venue: room C9 Sackville Street Building**
- **Time: 11.00 am**
- **All welcome to attend**

**Abstract:** The design optimization of a lumped element circulator was carried out using measured eigenvalues. The circularly coupled three-resonator method and theoretical extension of the data were used to obtain the inductance eigenvalue of an inductive element in the frequency range of interest. Good agreement was found between predicted and measured circulator characteristics. Mapping the relative argument of the evaluated eigenvectors clarified the origin of circulator characteristics. The design procedure shown here could convert the development of the lumped element circulator from trial-and-error to a predictable method.