



IEEE AP/MTT (Hong Kong Chapter)  
&  
The Chinese University of Hong Kong  
Department of Electronic Engineering



Distinguished Microwave Lecturers on

**Modern Methods for Microwave Filter Synthesis**

By

**Richard Cameron**

Professor (C. Eng., FIEEE, FIET)

**Date:** January 14, 2014

**Time:** 14:00pm – 16:00pm

**Place:** Room 222, Ho Sin-Hang Engineering Building, CUHK



**Abstract**

This tutorial lecture, minimizing mathematics and jargon, introduces the state-of-the-art coupling matrix filter synthesis method to microwave equipment designers, helping to meet the very stringent specifications that are demanded by modern telecommunication, radar and scientific/earth observation systems. One important advantage of the coupling matrix method over classical synthesis methods is a one-to-one correspondence between the elements of the coupling matrix and the individual physical components of the filter. Another is the ability to reconfigure the coupling matrix through similarity transforms to arrive at a different coupling topology, corresponding to the available coupling elements of the particular microwave structure that has been selected for the application. The coupling matrix will naturally accommodate critical specifications such as asymmetric characteristics, transmission zeros and group delay equalization.

**Biography**

Richard Cameron gained his BSc in Electronics with Telecommunications at the University of Loughborough in 1969. He subsequently joined the Marconi Space and Defence Company to begin a career devoted to the design and R&D of microwave equipment and systems for spacecraft and associated ground stations.

In 1975 Professor Cameron joined The European Space Research and Technology Establishment (ESTEC), the technical branch of the European Space Agency (ESA). Here he was involved in the development of software for the design of advanced microwave equipment for space application, particularly microwave filters. In 1984 Prof. Cameron joined the ComDev company of Canada to assist in the establishment of ComDev Europe in England. This involved laying down the design foundations for the production of passive microwave devices and sub-systems for space application, and later for cellular communication systems. Prof. Cameron retired from CDE in 2005, but retained a consultancy role with the Company. He has also been appointed a Visiting Professor at the University of Leeds.

During his career Prof. Cameron has filed 8 patents and has authored or co-authored many papers for technical journals and conferences. He is also the co-author of a technical book, Microwave Filters for Communication Systems - Fundamentals, Design and Applications.

**\*\*\* All are welcome to attend \*\*\***

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