



## SEMINAIRE EXCEPTIONNEL

de 14 h à 15 h, salle Belledonne, IMEP, MINATEC,  
ouvert aux chercheurs des autres laboratoires

Mardi 14 avril 2009

“Practical aspects of microwave filter development”

by Richard V. SNYDER

**Abstract :** The design and development of microwave filters and networks proceeds from strong theoretical underpinnings, with readily-available theory (and software) covering such diverse areas as circuit topology, electromagnetic radiation and coupling, thermal and mechanical properties of materials, mechanical resonances and finish characteristics.

In this talk, I will present examples showing how simulation tools have been used to eliminate lab cut-and-try (multiple prototypes) and to squeeze the last gasp of performance out of certain filters. The simulation tools can be applied to mechanical parameters, such as shock and vibration, as well as to the fundamental electrical network design. Examples of high power bandpass, high power notch filters with wide stopbands, and notch filters with wide passbands will be presented. We will present the idea of validating models to ensure that sufficient model complexity is contained so as to enable accurate predictions. It is hoped that the listener will develop an appreciation for the cost-savings associated with the idea of using **well-validated** simulation models in lieu of the lathe (and other tools).

*Richard V. Snyder is President of RS Microwave (Butler, NJ, USA), author of 71 papers, three book chapters and holds 18 patents. His interests include E-M simulation, dielectric and suspended resonators, high power notch filters and active filters. He received his BS, MS and PhD degrees from Loyola-Marymount, USC and PINY. Dr. Snyder served the IEEE North Jersey Section as Chairman and 14 year Chair of the MTT-AP chapter. He is currently Chair of the IEEE North Jersey EDS and CAS chapters. He twice received the Region 1 award. In January 1997 he was named a Fellow of the IEEE and is now a Life Fellow. In January 2000, he received the IEEE Millennium Medal. Dr. Snyder served as General Chairman for IMS2003, in Philadelphia. In January 2007, he began a second 3-year term as an elected member of ADCOM. Within the ADCOM, he serves as Chair of the TCC and Chair of the Standards Committee. He is an Associate Editor for the IEEE Transactions on Microwave Theory and Techniques, responsible for most of the filter papers submitted. He is a member of the American Physical Society, the AAAS and the New York Academy of Science.*

*Institut de Microélectronique, Electromagnétisme et Photonique  
MINATEC, INPG, 3 Parvis Louis Neel, BP 257, 38016 GRENOBLE CEDEX 1, France  
Tél. +33 (0) 456.529.503 - Fax. +33 (0) 456.529.501  
UMR 5130 CNRS INPG UJF  
Institut National Polytechnique de GRENOBLE*