

2007 Symposium on Nano Device Technology

The Symposium on Nano Device Technology 2007 organized by National Nano Device NARL, will provide an open forum for the discussion of recent developments on nano-technology and advanced devices, materials and processes. Scientists, scholars and experts in the fields

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NDL National Nano Device Laboratories
國家奈米元件實驗室



時間: 中華民國96年5月9-15日
地點: 新竹市科學工業園區展業一路26號 奈米電子研究大樓 國際會議廳

奈米元件技術研討會 2007

主題

- 》後矽奈米電子元件技術 ·
- 》奈米生物技術 ·
- 》功能性奈米材料技術 ·
- 》奈米檢測技術 ·
- 》高頻技術及應用 ·
- 》奈米光晶元件技術 ·

A Hybrid Probe Tip Calibration for Multiport Vector Network Analyzers

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ABSTRACT

This presentation will review the current state-of-the-art for four-port and differential network analyzer calibration of microwave probing systems and present details of the first commercial implementation of a hybrid multiport vector network analyzer (VNA) calibration method suited to a probing environment. The new calibration method implements the enhanced line-reflect-reflect-match with automatic determination of load inductance for a number of straight thru paths to fully determine all directivity, reflection tracking, and source and load match terms as well as the associated transmission tracking terms. The remaining transmission tracking terms are found from the use of an unknown but reciprocal thru structure using a process similar to that of the solr calibration algorithm. Combining the lrrm and solr algorithms creates a robust, hybrid calibration method that is insensitive to the normal variation in one-port standard behavior associated with normal probe-placement variability. The hybrid calibration is also insensitive to the inherently non-ideal thru behavior of coplanar waveguide bends or loop-back structures.

Leonard Hayden has been with Cascade Microtech (Beaverton, OR) in various marketing, application, and research and development engineering roles since 1994. He is currently involved with advanced development of measurement applications associated with all areas of on-wafer measurements including microwave and RF probes and probing systems.

Leonard completed his Ph.D. at Oregon State University in 1993 researching time domain measurements and electrical circuit modeling of packages and interconnections. He continued investigating these topics as a Post-Doctoral associate in the Microwave Metrology group at NIST in Boulder, Colorado. Leonard has worked in the area of microwave and RF measurements since 1985 when he started his engineering career in the Spectrum Analyzer division of Tektronix.

Leonard is a senior member of the IEEE. He is a member of the MTT-11 technical committee, and regularly serves as technical reviewer for MTT related publications and on the IMS technical program committee. He serves on the ARFTG Microwave Measurement Conference executive committee and is currently vice-president of ARFTG.