

STEVENS

Institute of Technology

*Charles V. Schaefer, Jr.
School of Engineering*

MECHANICAL ENGINEERING SEMINAR

AN OVERVIEW OF THE CRITICAL ISSUES IN INTEGRATED CIRCUITS PACKAGING

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The integrated circuit (IC) is normally housed in a package, which assures protection from mechanical and environmental stress and provides mechanical interfacing for testing, burn-in and electrical interconnection to the next packaging level. With the recent increase in the complexity of IC packages, package failures became the limiting factors in achieving high reliability. This seminar introduces the critical packaging issues and challenges facing the semiconductor industry in selecting a reliable combination of package materials and processes. The topics covered include an overview of the current IC packaging technologies, package failures due to operating-environment conditions, solid and liquid-state reactions, electro-migration, thermal mismatch and moisture-driven degradation.

Mr. Cohn holds BS, MS and ME degrees in mechanical engineering from Columbia University and has a NJ Professional Engineering License. Prior to joining TechSearch, Mr. Cohn was a Distinguished Technical Staff Member in the IC Packaging and Interconnection Organization at Agere Systems. He has been with AT&T / Lucent / Agere for 23 years, acting as the lead resource on PCB technology supporting the development of advanced organic PBGA substrates for wire bonded and flip-chip IC interconnections. Before joining AT&T, Mr. Cohn was an engineering specialist at the Singer / Kearfott Company. Mr. Cohn has authored chapters in several McGraw Hill, IC Packaging Handbooks, co-edited a McGraw Hill book titled "Failure-Free IC Packages", conducted many seminars and presented numerous papers on electronic packaging. He was awarded 8 US Patents and 3 Patents Pending on IC Packaging Construction and Thermal Enhancements.