



San Diego Joint Chapters of ACerS & IMAPS

Thursday, April 4th, 2019 at 12:00

5G / mmWave Package Development Requirements and Solutions

Presented by: **Urmi Ray, PhD**

Abstract: The fifth Generation (5G) mobile communication era is expected to address the insatiable need for data communication by introducing mmWave technology and protocols. The unprecedented latencies offered by 5G Networks will enable users to indulge in gigabit speed immersive services regardless of geographical and time dependent factors.

The key to enabling this architecture is packaging and system integration, especially involving an effective antenna structure and RFIC communication in cost-effective, small form-factor packages. As full speed development, demonstration and qualification of mmWave systems have accelerated in 2017, different design and packaging architectures are emerging.

This talk will summarize the landscape of package development options including LTCC, eWLB/FOWLP as well as laminate-based packaging. The specific requirements of materials and process needs (low dielectric material, copper roughness requirements) are discussed. Multiple different package structures are presented as case studies to demonstrate comparative performance of eWLB vs laminate packages. Product application spaces ranging from mobile/handheld to network infrastructures and automotive/satellite radars are highlighted. Key aspects and guidelines towards a cost/performance trade-off analysis will be summarized.

Biography:

Urmi Ray was most recently Senior Director at JCET Group focusing on advanced system in package (SIP) technologies. Prior to joining JCET Group, Urmi served as a Principal Engineer in Qualcomm where she had been the technology and program lead in several forward-looking programs in 3D and 2.5D and system integration, with particular focus on low cost packaging for mobile industry. She joined Qualcomm in 2006, after spending 10+ years at Lucent Technologies Bell Laboratories in NJ working on advanced materials and reliability for a diverse set of product portfolios, including consumer products to high reliability telecommunications projects. She is currently active in many aspects of advanced packaging technology area. She has a PhD from Columbia University (New York City).

Logistics:

THURSDAY, April 4th, 2019 at 12:00 – 1:00 PM. Lunch will be provided.

Location: EMD Performance Materials, @ 6555 Nancy Ridge Drive, Suite #200, San Diego, CA 92123

RSVP required. Space is limited to 30 registrants due to room size; please sign up quickly.

\$20.00 for IMAPS members. \$25.00 for non-members. \$5 for students with an ID. Please advise if you are non-U.S. citizen when you register. [Register here](#) , questions please contact Bill Ishii ----- bill@imaps.org