

2019

JACK T. KIMBRELL DISTINGUISHED LECTURE

FEATURING

Gaurang Choksi

Vice-President - Technology Development

Director - Assembly & Test Technology Development Core Competencies

Intel Corporation



November 7 | 11:00 a.m. | ETRL 101

Reception 10:30 a.m. in ETRL 119 | Refreshments will be served.

Heterogeneous Electronic Packaging: Turning Concepts to Reality!

*Enabling the Creation, Computing, Communication
and Management of Data*

Technology advances in electronic packaging have supported and sustained Moore's Law silicon scaling, and have evolved to become an important enabler of product performance. Progress in the areas of computing, memory, communications and networking for a wide range of market segments including consumer electronics, high performance cloud computing and emerging areas such as autonomous driving and artificial intelligence will drive the need for increased integration and differentiation. This results in an extremely diverse set of 2-D, 2.5-D and 3-D packaging architectures and designs with multiple levels of integration; requiring novel constructs, materials technologies, modeling and simulation tools, test methods, and manufacturing processes.

Rapid progress in the area of heterogeneous packaging and assembly / test will continue to require significant improvements in modeling/simulation software tools and measurement tools / techniques for design, assembly manufacturing and testing, and materials for mechanical integrity, signal integrity, power delivery and thermal requirements. Challenges that need to be addressed for facilitating analysis and characterization to enable efficient design, materials selection and associated assembly and test manufacturing processes will be reviewed. The role of cross-functional teams, decisions for trade-offs across electrical, thermal and structural integrity performance, and the need for new competencies moving forward, will be discussed.

Dr. Choksi joined Intel in 1988, after receiving his Ph.D. degree from Virginia Tech.

During his 30+ year tenure at Intel, he contributed to various areas including structural analysis and testing, electrical and physical design and analysis of multi-chip modules, design/analysis tool development for packages/boards, and thermal technologies and solutions.

The scope of his group includes materials selection and characterization, dimensional measurements, and modeling and validation related to structural integrity, power delivery, high speed signaling, thermals and heat dissipation, and fluid flow to support the design and development of electronic packaging, assembly and test technologies.

Dr. Choksi is a recipient of the Intel Achievement Award and serves on several academic and national advisory and review boards.



School of

Mechanical and Materials Engineering

WASHINGTON STATE UNIVERSITY