



Contribution ID: 46

Type: **not specified**

Future Trends on Chip Fabrication and Next Challenges on Semiconductor Technology

Wednesday, 30 August 2023 12:00 (1 hour)

Abstract: Moore's Law predicted the sustained scaling that our industry has enjoyed for decades. End consumers have come to expect ever-increasing functionality at lower cost with each passing year. However, in the coming decade the limits of physics will forcibly slow the pace of geometric scaling, perhaps all but ending it. In the face of this issue, the industry is looking for new ways to fulfill the end consumer's expectations. 2.5D and 3D integrated circuits created through Advanced Packaging (AP) have emerged as the best near-term solution to mitigate the roll-off of geometric semiconductor scaling. Additive Semiconductor (AS) manufacturing can add unique technologies such as Back-End-of-Line (BEoL) memory and photonics. Combining AP and AS manufacturing provide new powerful high leverage tools to the industry.

This talk will discuss the advancements, processes, and methods for advanced packaging and additive semiconductor manufacturing and how these enable small and medium scale customization for an industry very focused on high volume manufacturing. It will address the benefits and issues of heterogeneous integration as well as considerations that improve manufacturability and performance.

Lecturer: Robert Patti is the president of Nhanced Semiconductors, Inc. He has spearheaded the development and delivery of cutting-edge 3D and 2.5D integration technology for high energy physics, medicine, automotive, military, HPC, and other fields. He has managed hardware engineering teams in several organizations, including successful startups. Dr Patti received the 2009 SEMI Award for North America for his pioneering work in 3D IC integration and the 2015 3DIncites Individual Achievement Award (Text informed by Lecturer).

To be noted: A presentation of Nhanced-semiconductors, Inc. will be included in the High Technology Symposium, September 9.

Presenter: PATTI, Robert (President, Nhanced-Semiconductors, USA)

Session Classification: Fundamental Research and High Tech advances