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Invited Speech: Challenges in Moving to a 3D Semiconductor World



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About the Speaker

Shu-Wen Chang has been managing Mentor Graphics' Foundry Program since 2004, supporting the world's top IC foundries in the areas of physical verification and Design For Manufacturing (DFM). Before joining Mentor, she was Deputy Director of Macronix International Co. for 14 years. Shu-Wen received her Masters Degree at the Institute of Information Management, National Chiao Tung University, Taiwan, and her B.S. from the Department of Information and Computer Engineering at Chung Yuan Christian University, Taiwan.

Abstract

Today the semiconductor discussion is all centered on the idea of "3D". But what do people truly mean when they say 3D? Do they mean 3D transistors or stacking of complete die in either an interposer (2.5D) or true 3D fashion (with through silicon vias)? Moreover, what happened to all the other issues we normally encounter when doing classic linear process node shrinking? This session will address the many challenges inherent to the ongoing progress in process shrinking, the impact of adding FinFET transistors into the mix, and the option of going to 3D stacking. We will also provide examples of how these issues are being addressed by the semiconductor ecosystem.