

Invited Speech: **Gaining a Competitive Advantage with DFM**

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About the Speaker



Shu-Wen is Foundry Program Manager of Mentor Graphics from 2004 to support top 4 foundries on Physical verification ,DFM related projects.

Before joined Mentor Graphics , she was Deputy Director of Macronix International Co. around 14 years .

Shu-Wen received the Master Degree in the Institute of Information Management, at Chiao Tung University, Taiwan and B.S in Department of Information & Computer Engineering at Chung Yuan Christian University , Taiwan.

Abstract

The external specifications of an IC (functionality, clock rate, power consumption, etc.) determine the competitiveness of a product. To be successful and profitable in the IC business, designers need to “out-design” their competitors. Although Design-For-Manufacturing (DFM) has traditionally been viewed as a yield improvement strategy, mastering DFM can also provide a competitive advantage in terms of design optimization. The idea is simple: if designers can selectively reduce the size of guard bands based on superior knowledge of how physical design features interact with manufacturing variability, they can design a product with more competitive performance specifications. In effect, DFM provides the sensitivity analysis needed to “tighten up” the design process. This can be done not only for one design, but based on cumulative process data from all designs at a given technology node. DFM then becomes an integral part of the classical yield learning process.

This presentation will explore how DFM can give designers a competitive “lever” by informing them—through manufacturing process simulations calibrated to real silicon data—how far they can push a design without risking a yield disaster. Ms. Chang will discuss different approaches to physical signoff and their relation to business goals, the impact of DFM on functional and parametric yield, DFM as an engineering discipline, and who should be driving DFM—the fabs, design house.