

Demystifying Design-for-Yield

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Semiconductor International magazine

Manufacturing at the 0.25 micron through the 130 nm node bore a few important lessons: 1) Productivity advances in the future would come about not just by feature shrinks but also by new materials and even new starting substrates; 2) yield ramp rates and final yields would not reach historical norms; and 3) a key cause of not reaching previously attained yield levels was the gap between design and manufacturing. One of the key causes for a drop in mature yields is the rise in design-dependent systematic failures, especially with respect to interconnect processing. This article will focus on some of the design-for-manufacturing approaches available today and will discuss the increasing role they must play in manufacturing leading-edge devices.