

X-RAY DIFFRACTION IN THE MICROELECTRONICS INDUSTRY

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Over the last two decades the microelectronics industry has achieved yearly cost reductions of the order of 20-30%, while maintaining an almost 60% of increase in the number of bits per chip per year. This phenomenal growth has been achieved by shrinking the dimensions of the circuit elements used in the chips, with attendant decreases in the sizes of packages that thermally, mechanically and environmentally protect the chips while providing interconnections to the rest of the world.

X-ray diffraction and fluorescence analysis has played significant roles in the advances made by the semiconductor industry. In this talk we will give examples of the unique problems in the semiconductor industry that were solved through x-ray techniques.