Physical design and optimisation methods for TSV-based 3D and monolithic 3D integration

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This talk aims to unveil how to effectively and optimally design 3D circuits covering aspects from 3D stacking to monolithic integration. As first, an overview of physical design challenges with respect to conventional 2D circuits will be provided, followed by an in-depth look into the power and thermal integrity challenges and solutions. More specifically, design challenges related to power, signal and clock distribution will be covered and also present some of the current solutions. Secondly, an overview of the reliability concerns for 3D circuits and their mitigation techniques will be presented. The talk will conclude with current challenges and future directions for 3D physical design.

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