TECHNISCHE FAKULTÄT

Department Elektrotechnik-Elektronik-Informationstechnik

EEI-KOLLOQUIUM

Electromagnetic Issues in 3D Integrated Circuits

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Cauerstraße 9, Seminarraum 4.14

Diskussionsleitung: Prof. Dr.-Ing. R. Weigel

The rapid growth and convergence of digital computing and wireless communications have been driving semiconductor technology to continue its evolution following Moore's law in today's nanometer regime. Modern electronic systems integrate more complex components and devices which results in a very complex electromagnetic field environment. Electromagnetic compatibility (EMC) has become one of the major issues in printed circuit board (PCB) and integrated circuit (IC) design.

The new TSV (Through Silicon Via) based 3D IC technology is emerging as a promising next generation IC technology in both semiconductor industry and academia. TSV is becoming the most critical vertical interconnection structure between the semiconductor dies. The electromagnetic characteristics including signal integrity, power integrity and EMC are becoming the major design obstacle due to the high frequency loss, coupling, and electromagnetic radiation. This talk will cover the new modeling, measurement, design, and analysis approaches of the TSV in 3D IC.