

Max Planck Institute for Solid State Research

S E M I N A R Sonderseminar des Transregio 80 DEPARTMENT MANNHART

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Devices for the post CMOS area – what are we looking for?

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16:00 Uhr

Seminar Room (7D2) - Heisenbergstraße 1

The long predicted end of scaling is coming. Many times it was predicted that the IC industry will hit a brick wall. Beginning in the early 1980's when patterning solutions were doomed to fail, then through the late 1990's when gate oxide scaling was thought to be at its end, and now in the recent years when device operation is thought to hit its physical limits. The truth is however that none of these posed an obstacle that could not be addressed. The reason while the progress of the industry enjoyed in the last several decades is slowing down is related to the ever increased power consumed to achieve higher performance limits. Seeing the end approaching, the quest for what is coming next is on! In this presentation I will give short review how we got where we are and what are the wonderful properties of MOSFET devices that allowed this extraordinary development. I will then look at the possibilities of a possible extension of the existing core technology. Finally I will discuss some alternate device options and provide a critical evaluation how they might fit into the IT land scape.