MAR13-2012-020842

Abstract for an Invited Paper
for the MAR13 Meeting of
the American Physical Society

Innovation Driver Nanoelectronics

HUBERT LAKNER, Fraunhofer-Gesellschaft Group for Microelectronics and IPMS

When addressing the global societal challenges most solutions will require *Nanoelectronics* and *SmartSystems* - therefore innovation today is mainly based on nanoelectronics which has become one of the most important key enabling technologies and innovation drivers. Nanoelectronics has been extended by other microtechnologies. This results in additional functionalities. The combination of analog and digital electronics, the integration of sensors and actuators, of power devices and rf components on wafer level makes it possible to shrink shoebox sized systems to the size of a matchbox. But there is no innovation without research. Europe (Germany) is top in invention but poor in commercialization - many good ideas fail when going from research to production within the so-called Valley of Death. To overcome this, a clear strategy is necessary. Silicon Saxony, the big Saxonian cluster on micro- and nanoelectronics is presented as a best practice example: clear focus, addressing whole value chains and establishing joint technology platforms has led to a remarkable commercial success in the Dresden area.