

## **A EUROPEAN VIEW ON FUTURE SEMICONDUCTOR INDUSTRY NEEDS FOR MASM**

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### **ABSTRACT**

The Modeling and Analysis of Semiconductor Manufacturing (MASM) conference and related previous conferences have emerged from the Joint European Submicron Silicon Initiative (JESSI)/ SEMATECH collaboration project in the late nineties of the last century. The Measurement and Improvement of Manufacturing Capacity (MIMAC) data sets, which also include a simulation model of an Infineon facility, served for decades as reliable simulation reference models with substantial complexity to test academic solutions for research questions coming from academia itself and from the industry. More than a thousand of peer-reviewed publications speak an impressive language on the academic and industry coverage of MASM. Discrete-event and agent based simulation have moved from the tool and factory level to the entire semiconductor supply chain and sometimes even beyond covering the domains of value chains containing semiconductors. However, at the heart remained semiconductor manufacturing and semiconductor development.

With “Horizon 2020” the European Commission has set up the largest international collaborative research & innovation program. ECSEL, the Initiative on “Electronic Components and Systems for European Leadership” is the joint strategic European approach building on the JESSI experiences. Projects under the ECSEL umbrella contribute to reaching the next level for semiconductor development, manufacturing and supply chains. In this talk, some first results of trend-setting projects will be discussed. In the long term, it is very likely that new technologies such as Big Data, semantic web, AI with Deep Learning will change the way how we develop and manufacture semiconductors. The question is: how and who? MASM has to play a crucial role on the way to answer this question. Clearly, the semiconductor industry and its related B2B World containing semiconductors have the capacity to lead this change, thus unlocking the broader innovation potential towards the B2C World.

### **AUTHOR BIOGRAPHY**

**SABINE HERLITSCHKA** is Chief Executive Officer and Chief Technology Officer of Infineon Technologies Austria AG. Her professional career includes industrial biotechnology research, international research & innovation management and financing, internships at leading U.S. organizations (National Science Foundation, American Association for the Advancement of Science), Fulbright Scholar at George Washington University and Johns Hopkins University/SAIS, as well as founding vice-rector for Research Management & International Cooperation at the Medical University of Graz (Austria). Before joining Infineon Technologies Austria, Herlitschka was Director of European and International Programs in the Austrian Research Promotion Agency. For more than twenty years she has been involved in strategic European Research & Innovation Programs as project coordinator, evaluator, and member in pioneering European & international expert groups. Amongst others, she is chair of the Governing Board of ECSEL – the Electronic Components and Systems for European Leadership Program. Herlitschka holds a Ph.D. in Food- and Biotechnology with Postdoc specialization in molecular biology and genetic engineering and a Master of Business Administration.