

Designing Micro/Nano Systems for a Safer and Healthier Tomorrow

Giovanni De Micheli

Professor and Director of the Institute of Electrical Engineering
and of the Integrated Systems Centre at EPFL, Lausanne, Switzerland

The ongoing scaling and hybridisation of manufacturing technologies enables us to attain unprecedented levels performance as well as to integrate electronic and fluidic circuits with sensors and actuators.

Smart micro/nano systems will be the building blocks of wearable and ambient systems, that gather and integrate heterogeneous data in real time and operate and communicate in a wireless and ultra low power mode.

These systems will foster a revolution in health and environmental management, with the final objective of improving security and quality of life. At the same time, they will create a large market of components and systems, and a renewed perspective for electronic design and manufacturing companies.

To accomplish such an ambitious goal, new technologies and architectures must be matched and tailored to the operational environment by solving novel and challenging design and optimisation problems, through the creation of novel design methodologies and tools.