



# FIRST INTERNATIONAL NANOTECHNOLOGY CONFERENCE ON COMMUNICATION AND COOPERATION

## Abstract

Nanowire Science & Technology for Future Electronic Devices

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Nanotechnology approaches, such as self-assembly of nanostructures, are becoming increasingly interesting as future add-on technologies to electronics, photonics and life-science applications. In this presentation I will describe a special approach, based on materials science developments, for controlled formation of one-dimensional nanowire structures, allowing control of location, dimensions as well as atomic level accuracy of heterostructures. I will specifically give examples of device families that have successfully been addressed by this approach, such as resonant tunneling and single-electron devices, single/few-electron storage systems and wrap-gate field-effect transistors, and the opportunities to implement advanced heterostructure devices on silicon substrates. I will also give information about a new major European project, with involvement of leading European electronics industries, aimed at addressing “Nanowire-based One-Dimensional Electronics”.

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