

A pranzo con la Fisica !!!



(aperto a tutti)

Il secondo appuntamento del 2011 è per

Giovedì 12 Maggio 2011 dalle ore 13.15 alle ore 14.30

Presso l'aula A del Dipartimento di Fisica

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“Semiconductor Nanowire-based Devices”

The catalyst-assisted growth of semiconductor nanowires has emerged as a flexible and promising technology for the synthesis of self-assembled nanostructures with potential impact on innovative device applications. Different materials can be easily combined in individual high-quality single crystal nanowires without any lattice-matching constraints. As a consequence, nanowire technology represents a powerful research and development platform for fundamental physics investigations as well as for scalable electronics and photonics applications. Several examples of semiconductor nanowire-based devices [1,3] as well as the development of new material-based NWs [4-5] and the employment of alternative catalysts [6-7] will be described in the presentation.

- [1] S. Roddaro, A. Pescaglini, D. Ercolani, L. Sorba, F. Giazotto, and F. Beltram, *Hot-electron effects in InAs nanowire Josephson junctions*, Nano Res **4**, 259-265 (2011).
- [2] P. Spathis, S. Biswas, S. Roddaro, L. Sorba, F. Giazotto, and F. Beltram, *Hybrid InAs nanowire-vanadium proximity SQUID*, Nanotechnology **22**, 105201 (2011).
- [3] S. Roddaro, A. Pescaglini, D. Ercolani, L. Sorba, and F. Beltram, *Manipulation of Electron Orbitals in Hard-Wall InAs/InP Nanowire Quantum Dots*, Nano Lett **11**, 1695-1699 (2011).
- [4] D. Ercolani, F. Rossi, A. Li S. Roddaro, V. Grillo, G. Salviati, F. Beltram, L. Sorba, *InAs/InSb nanowire heterostructures grown by chemical beam epitaxy*, Nanotech. **20**, 505605 (2009).
- [5] L. Lugani, D. Ercolani, F. Rossi, G. Salviati, F. Beltram, and L. Sorba, *Faceting of InAs-InSb heterostructured nanowires*, Cryst Growth Des **10**, 4038 (2010).
- [6] S. Heun, B. Radha, D. Ercolani, G. U. Kulkarni, F. Rossi, V. Grillo, G. Salviati, F. Beltram, and L. Sorba, *Coexistence of Vapor-Liquid-Solid and Vapor-Solid-Solid growth modes in Pd-assisted InAs nanowires*, Small **6**, 1935 (2010).
- [7] S. Heun, B. Radha, D. Ercolani, G. U. Kulkarni, F. Rossi, V. Grillo, G. Salviati, F. Beltram, and L. Sorba, *Pd-assisted growth of InAs nanowires*, Cryst Growth Des **10**, 4197 (2010)

Non mancate !!!