



**Giovedì 12 giugno - ore 14,00**  
Aula Seminari, NICO

## **Nanotools for Neuroscience**

**Carlo Ricciardi, Emiliano Descrovi, Fabrizio Pirri**

DISAT – Politecnico di Torino; IIT@POLITO - Istituto Italiano di Tecnologia

In the last years, remarkable progress has been made in developing novel materials and tools at the micro/nanoscale that have opened up new possibilities across science, engineering, and medicine. Some progress has already been made toward addressing problems in neuroscience via nanotechnology, such as nanoscale probes for electrophysiology or nanoparticles for enhanced imaging.

This talk will mainly focus on our recent developments in the field of nanobiosensing: mechanical (cantilever) and optical (photonic-crystal) biosensors, as well as spectroscopic tools (Surface Enhanced Raman Spectroscopy), will be introduced and described. Real-time detection of low concentration of biomolecules will be shown.

Finally, we'll discuss some new research activities that we believe will have a deep impact in neuroscience: memristive devices to emulate (and possibly tune) synaptic plasticity in artificial (and possibly hybrid) networks, and light pattern generation for neuronal imaging and excitation.

Ospite:

**Alessandro Vercelli**

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