Avviso Di Seminario

22-04-2015, ~~14:30 - Aula B~~ 15:00 - Aula A

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Terra' un seminario dal titolo:

"NANOBIOTECHNOLOGY: NEW PARADIGMS FOR THE LIFE SCIENCES"

Abstract:

Nanotechnology was born as a result of the impressive technological advances driven by electronics, but has led to a set of methods drastically impacting other fields. In this presentation our increased ability to tailor molecule and, more in general, nanosystem properties will be exploited to design and produce intelligent tags that can actually analyze and react to the cellular environment. Today multifunctional nanosystems can be produced that provide a signal or a function dependent on the value of a specific biochemical parameter. Importantly these nanosystems can target specific subcellular domains and can be used also in the case of live organisms.
Recent results will be discussed that highlight the impact of nanobiotechnology in this context with a particular emphasis on the design and realization of nanoprobes suitable for in vivo studies that can be transferred to the biomedical world (see Fig. 1).

Figure 1. Schematic representation of the nanoprobes that will be discussed during this presentation.

Figure 2. Example of microfluidic grid equipped with on-chip fluid actuation based on surface-acoustic-wave pumping.

Additionally I shall show that these nanotools can be integrated in lab-on-a-chip architectures to provide fast, automated diagnostic functions and tailorable environments for guided cell growth and differentiation (see Fig. 2). In this context a novel on-chip pumping protocol based on surface acoustic waves will be shown also within complex fluidic networks. This approach eliminates the need for external pumps or circuitry and opens the way to fully stand-alone miniaturized fluidic chips.

Note:

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Il Direttore
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