



# NaNoNetworking Day

July 22, 2009, Barcelona, Campus Nord of the UPC

## Workshop Mission

Nanotechnology is enabling the development of devices in a scale ranging from one to a few hundred nanometers able to perform specific tasks at the nano-level such as computing, data storing, sensing or actuation. Nano-devices are expected to expand their capabilities through coordination, information sharing and fusion. There is the need to define the way in which a single nano-device will communicate with other nano-devices in light of their physical and practical limitations. Classical communication paradigms are not suitable for communication at the nano-scale and they need to undergo a profound rethinking and redesign in order to meet the requirements of the new nanonetworks' applications. In addition, existing networking architectures have to be completely revised in light of this new communication paradigm. While the research community in the recent years has been mainly focused on nanotechnology and nano-devices, we are going one step ahead to address the nanonetwork communication problem, which involves concepts on channel modeling, information theory, protocols and network architecture.

The two-fold mission of this workshop is to point out open challenges involving communications at the nano-scale as well as to help creating community to address this multidisciplinary new paradigm.

## Workshop Program

July 22, 2009, Wednesday		
Location: UPC – Campus Nord, Aula Màster (Mòdul A3)		
Open to UPC community		
9:00 – 9:15	Josep Solé-Pareta Eduard Alarcón UPC	Welcome / Opening
9:15 - 10:00	Ian F. Akyildiz Georgia Tech & UPC	NanoCommunications: an Overview
10:00 - 10:15	M. Pierobon Georgia Tech	Information Theory for Molecular Communications in Nanonetworks
10:15 - 10:30	J. M. Jornet Georgia Tech	An Electromagnetic and Quantum Theory Perspective for Nano-scale Communication in the Terahertz Band
10:30 - 10:45	Enric Claverol IBEC, UB	Neuro-cortical Molecular Communications in Human Intra-body Nanonetworks
10:45 – 11:00	Ramon Bragos DEE, UPC	Molecular Communications for Cardiac Bio-implants in Human Intra-body Nanonetworks
11:00 – 11:30		Coffee break
11:30 – 13:00	FORUM: Discussion of possible research directions & collaboration opportunities.	Moderator: Ian F. Akyildiz

## Organizing Committee

EntriCAT - NaNoNetworking Center in Catalunya - [www.cba.upc.edu/N3cat](http://www.cba.upc.edu/N3cat)

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