

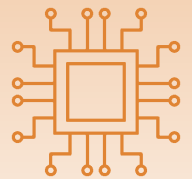
# NANO seminars

## Nano in Physics

### Neuromorphic Computing and Adaptive Sensing - A Device to Systems Level Perspective

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#### Abstract

Development of unconventional computing architectures, including neuromorphic computing, relies heavily on novel devices with properly engineered properties. This requires exploration of new functional materials and their designed interfaces. Ferroelectric memories including two-terminal ferroelectric tunnel junctions and three-terminal ferroelectric field-effect transistors have shown promising performances in recent years as analog, multibit memory components with ultralow power consumption. However, for ferroelectric memory technology to become a mainstream technology, CMOS integration of these components is of major importance. For further diversifying their application to edge computing and smart sensing industry, a vast uncharted territory of low-temperature processable and CMOS back-end-of-line (BEOL) compatible materials needs to be researched. In the first part of my talk, I will discuss the potentials for these emerging devices from scalability, performance and 3D integration perspectives. In the next part, I will move eventually to the integrated device-to-system level performance benchmarking aspect, identifying the major challenges that need to be overcome for turning the opportunities to a technological reality.

**Introductory talk by Aleandro Antidormi**

*Neuromorphic computing based on amorphous materials*

Senior Postdoctoral Researcher at Theoretical and Computational Nanoscience Group, ICN2

Thursday 10 February at 03:00 PM (CET)  
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