MaDEleNA meeting

May 18-19, 2017
Povo (Trento, Italy)

FBK, Stringa room

MaDEleNA

international meeting

Novel intelligent nanomaterials and devices towards adaptive electronics and neuroscience applications

CNR
Institute of Materials for Electronics and Magnetism

FBK
Centre for Materials and Microsystems

UNITN
Department of Industrial Engineering
Centre for Integrative Biology

CNR
Institute of Biophysics

CNR
Institute of Photonics and Nanotechnologies

supported by

ORGANIZING COMMITTEE

Salvatore Iannotta – CNR IMEM
Roberto Verucchi – CNR IMEM
Cecilia Pederzolli – FBK LaBSSAH
Lorenzo Lunelli – FBK LaBSSAH
Laura Pasquardini – UNITN DII

MaDEleNA project, financed by Autonomous Province of Trento (PAT), aims to develop neuro-bio-inspired electronic systems based on elements mimicking the function of natural nervous systems and brain. Goals are achieved by combining materials research, novel hardware designs and state-of-the-art methods, integrating the skills of scientific local partners and national companies.

The major aim of the meeting is to correlate research and development, both locally and internationally, giving the opportunity to present and discuss scientific results and to stimulate the formation of new international teams and collaborations.

Topics addressed

- ✓ Materials and Processes for memristive devices
- ✓ Memristive networks and systems
- ✓ Development of neuromorphic architectures
- ✓ Memristive systems for bioelectronics

Program

Thursday, May 18th

14.00-14.30	meeting opening
14:30-15:00	S. Iannotta *The MaDEleNA project*
15:00-15:40	M. Di Ventra *Memcomputing: a brain-inspired topological computing paradigm*
15:40-16:20	M.R. Rabasa *Learning pattern classification with a network of coupled spin torque oscillators*
16:20-16:40	Coffee-break
16:40-17:20	S. Spiga *Memristive devices: challenges and opportunities for brain-inspired computing*
17:20-18:20	Poster session

Program

Friday, May 19th

9:00- 9:30	S. Battistoni *Memristive synapses: from bioinspired and biomimicking systems to functional neuronal interfaces*
9:30-10:10	M. Prezioso *Experimental Coincidence Detection in oxide memristor-based Spiking Neural Network*
10:10-10:50	G. Malliaras *Interfacing with the brain using organic electronics*
10:50-11:20	Coffee-break
11:20-12:00	S. Vassanelli *Wiring brain and artificial neurons through memristive synapses: the first steps*
12:00-13:00	Round table
13:00	Concluding remarks

www.imem.cnr.it/Madelena/drupal-7.22/

MaDEleNA

Confirmed Speakers

- **Massimiliano Di Ventra**, *Dept. of Physics, Univ. of California, San Diego (USA)*
- **Salvatore Iannotta,** *CNR Inst. of Materials for Electronics and Magnetism, Parma (Italy)*
- **George Malliaras**, *Ecole Nationale Supérieure des Mines, Dept. of Bioelectronics (France)*
- **Mirko Prezioso**, *Electrical and Computer Eng. Dept.,Univ. of California, Santa Barbara (USA)*
- **Miguel Romera Rabasa**, *Unité Mixte de Physique CNRS/Thales, Paris (France)*
- **Sabina Spiga**, *CNR Inst. for Microelectronics and Microsystems, Agrate Brianza (Italy)*
- **Stefano Vassanelli**, *Dept. of Biomedical Sciences, Univ. of Padova (Italy)*
- **Silvia Battistoni,** *CNR Inst. of Materials for Electronics and Magnetism, Parma (Italy)*