



UNIMORE
UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA

Dipartimento di Ingegneria
"Enzo Ferrari"
International Doctorate in
Information and Communication
Technologies

Dipartimento di Scienze Biomediche,
Metaboliche e Neuroscienze

Dottorato in
Neuroscienze

Dottorato in

Automotive Engineering for Intelligent Mobility



FONDAZIONE DI **MODENA**

Brain-Inspired Computing: From Neuroscience to Artificial Intelligence

June 8th-9th 2023

Comparto San Geminiano, Dipartimento di Giurisprudenza
Via San Geminiano 3 – Modena (MO)

The aim of the workshop is to explore different aspects of neuromorphic computing: from biologically realistic models for computation to synaptic and neuromorphic electronics to drive the latest generation of artificial neural networks.

Many industrial applications based on artificial intelligence (AI) have emerged and are all based on existing technology and computational paradigms. One of the main challenges for the expansion of AI is to draw inspiration from the way human brain works in the development of new hardware emulating computation performed by neurons and synapses.

This workshop will address this issue in a highly interdisciplinary scenario. We will explore areas of research apparently distant such as computational neuroscience and electronics, maintaining a common thread given by the performances shown by the nervous system, from energy consumption to highly parallelized cognitive tasks.

Features of the Brain-Inspired Computing Workshop 2023:

- **Prestigious invited speakers** from both the electronics and the neuroscience fields will report on the latest advancements in neuromorphic computing, interfaces between biological and artificial neurons, electron devices and circuits for bio-realistic spiking neural networks
- Round table discussion open to attendees, experts, and general public
- A social dinner (optional) in the beautiful countryside near Modena (transportation will be provided)
- Perspective attendees are encouraged to submit a short abstract (~ 1000 words + 2 figures)
Authors of accepted abstracts will:
 - give a brief oral "pitch" (~ 3 mins.) highlighting the main topic and results of their work before the poster session (up to ten selected abstracts)
 - present their work in poster format during the dedicated poster session on June 9th
 - have the abstract published in "Frontiers in Neuroscience" - Neural Technologies section (with DOI and ISBN, indexed in CrossRef)

Confirmed Invited Speakers:

- Egidio D'Angelo, *Università di Pavia*, co-Director of the "Human Brain Project"
- Christian Wenger, *IHP Microelectronics GmbH*, Head of Materials Research Dept.
- Michele Giugliano, *SISSA - Scuola Internazionale Superiore di Studi Avanzati*, IN-FET Project Coordinator
- Gianvito Urgese, *Politecnico di Torino*
- Pierpaolo Palestri, *Università di Udine*
- Sabina Spiga, *IMM-CNR*, Research Director
- Silvestro Micera, *Scuola Superiore «Sant'Anna» and École Polytechnique Fédérale de Lausanne*
- Sergio Martinoia, *Università di Genova*, Director of the DIBRIS (Dept. of Bioengineering)
- Stefano Vassanelli, *Università di Padova*
- Davide Rossi, *Università di Bologna*

Registration Type	Fee
Workshop + Social + Poster presentation	50 €
Workshop + Social	35 €
Workshop + Poster presentation	30 €
Workshop	Free

**In all cases registration is mandatory – visit www.bicw.unimore.it
Deadline for registration and abstract submission: May 31^o 2023**