

Bridging Memory Phenomena: DON'T FORGET IT: A Dive into Memory Devices



3rd to 7th August 2026, Würzburg
Julius-Maximilians-Universität Würzburg,
Fakultät für Physik und Astronomie



Scope

The “Bridging Memory Phenomena: DON'T FORGET IT: A Dive into Memory Devices” workshop is the 4th edition of the Paulista–Bavarian Workshop on Nano-Tailored Semiconductor Devices (NTSD). Its scope encompasses nonlinear dynamical systems and memory-related phenomena in advanced materials and devices, adopting a cross-disciplinary perspective that bridges physics, biophysics, materials science, device engineering, and modeling.

Particular emphasis is placed on memristors, memcapacitors, memtransistors, and emerging mem-emissive systems, as well as memory effects in solids and optical systems—both functional and parasitic—and their implications for device performance, reliability, and functionality.

The workshop further addresses the integration of memory devices with neuromorphic and neuronal circuits, focusing on adaptive, reconfigurable, and bio-inspired technologies. It aims to strengthen scientific dialogue, promote the exchange of ideas, and identify converging and diverging perspectives on memory effects, while outlining concrete directions for future collaborative research.

The program will feature invited talks by leading experts in the field, alongside contributed oral and poster presentations. A dedicated social and networking program will provide an informal and stimulating environment that fosters discussion, interaction, and the development of new collaborations.

Overview

In its three previous editions, the Paulista–Bavarian Workshop on Nano-Tailored Semiconductor Devices (NTSD) has brought together early-career researchers, established scientists, and technology developers to exchange ideas on advances in nanotechnology, quantum materials, and solid-state physics. The workshop tradition is to foster dialogue across complementary experimental, theoretical, and simulation approaches in nanofabrication, advanced characterization, nanoscale electronics and optoelectronics, and nano-enabled applications.

In this year's edition, **“Bridging Memory Phenomena: DON'T FORGET IT: A Dive into Memory Devices,”** the focus expands toward memory phenomena in materials and devices and their technological relevance.

The workshop promotes cross-disciplinary discussions integrating nanoscale processing and synthesis, advanced characterization, theoretical modeling, and novel device concepts relevant to adaptive, neuromorphic, and reconfigurable technologies. By explicitly encouraging young researchers to present and discuss their work in an international environment, NTSD aims to catalyze new research directions, strengthen the interplay between theory and experiment, and further consolidate long-term academic and scientific cooperation.

Research Sessions

According to the tentative program, the research sessions will combine:

- (a) Invited talks by leading researchers: 30 minutes + 10 minutes for discussion (40 minutes total).
- (b) Contributed talks by early-career researchers: 20 minutes + 10 minutes for discussion (30 minutes total).
- (c) A permanent poster exhibition, complemented by four dedicated poster sessions.

Each contributed talk will be accompanied by a poster (90 cm × 120 cm), displayed from Day 1 in the coffee break area. This integrated format has proven highly effective in fostering close interaction and stimulating active, informal, and productive scientific discussions among participants.

Confirmed Speakers:

- **Marcio Peron:**
Departamento de Física, Universidade Federal de Sao Carlos, Brazil
- **Ana Luiza Costa Silva:**
Departamento de Física, Universidade Federal de Sao Carlos, Brazil
- **Leonardo Castelano:**
Departamento de Física, Universidade Federal de Sao Carlos, Brazil
- **Jose Pedro Rino:**
Departamento de Física, Universidade Federal de Sao Carlos, Brazil
- **Victor Lopez-Richard:**
Departamento de Física, Universidade Federal de Sao Carlos, Brazil
- **Soumen Pradhan:**
Physikalisches Institut, Julius-Maximilians-Universität Würzburg, Germany
- **Fabian Hartmann:**
Physikalisches Institut, Julius-Maximilians-Universität Würzburg, Germany
- **Ovidiu Lipan:**
Department of Physics, University of Richmond, USA
- **Carlos Silva:**
Universidade Nova de Lisboa Faculdade de Ciências e Tecnologia, Portugal
- **Alisson R. Cadore:**
Brazilian Nanotechnology National Laboratory (LNNano),
Brazilian Center for Research in Energy and Materials, Brazil
- **Carlos César Bof Bufon:**
Instituto de Geociências e Ciências Exatas, Universidade Estadual Paulista, Brazil
- **Juan Bisquert:**
Instituto de Tecnología Química, Valencia, Spain
- **Fran Kurnia:**
Electrochemical Materials Laboratory, Department of Chemistry, Technical University of
Munich, Germany
- **Ivan Scheblykin:**
Chemical Physics, Lund University, Sweden

Networking Sessions

To maximize opportunities for identifying research partners and fostering new collaborations, dedicated networking sessions will be integrated into the social program. In addition, all posters will remain on continuous display throughout the workshop, serving as a dynamic backdrop during daily breaks. This format will create a sustained networking environment and a natural space for the exchange of experiences, ideas, and perspectives, encouraging spontaneous discussions and deeper scientific interaction.

Social Events

The social program will complement the scientific sessions by providing informal settings that promote dialogue and community building. Poster-session gatherings will serve as interactive meeting points, while additional social activities will offer opportunities to experience the city of Würzburg and its rich wine culture. These events are designed to strengthen professional connections in a relaxed and inspiring atmosphere.

Closing Session

The workshop will conclude with a fully interactive closing session organized in a round-table format. The workshop coordinators will begin by presenting their preliminary assessments and key takeaways. This will be followed by an open discussion in which participants are invited to share their perspectives on the scientific impact of the workshop, reflect on emerging research directions, and suggest avenues for future collaboration. The session aims to consolidate insights gained during the meeting and to outline concrete steps toward sustained international cooperation.

Workshops Coordination

Chairs: Fabian Hartmann (JMU), Sven Höfling (JMU), Victor Lopez-Richard (UFSCAR)

Local Organization: Fabian Hartmann (JMU)

Workshop Venue Würzburg

The Workshop will be held at the Faculty for Physics and Astronomy of the University of Würzburg. The Faculty is located at the Hubland Campus, on a hill at the eastern edge of the city.

Directions

By car:

From the A3 take the exit "Rottendorf" and follow the B8 to Würzburg. At the traffic light in Würzburg take the left-hand lane onto Stadtring Süd in the direction of Ansbach / Schwäbisch Hall. Leave the Stadtring Süd at the the Frauenland / Stadtmitte exit and head for the Stadtmitte (city centre).

From the A7 take the exit "Esterfeld" and follow the B19 to Würzburg (ca. 7 km). Get in the left-hand lane before the Würzburg place name sign and continue straight on (Stadtring Süd) in the direction of Ansbach / Schwäbisch Hall. Leave the Stadtring Süd at the Frauenland / Stadtmitte exit and head for the Stadtmitte (city centre).

By plane:

Frankfurt Airport: Take the ICE train from Frankfurt Airport long distance train station to Würzburg central station (Hbf) (1.5h)

Nürnberg Airport: Take the U2 to Nürnberg central station (Hbf). From there take the ICE train to Würzburg central station (Hbf) (1.5h)

Munich Airport: Take the Metro (S1 or S8) to Munich central central station (Hbf). From there take the ICE train to Würzburg central station (Hbf) (3h)

By train:

Please see the travel service of Deutsche Bahn on how to get to Würzburg central station.

Deadlines and Fees

Please note the following dates:

Submission deadline for the abstract of contributed talk or poster until 31.05.2026.

Please submit a [one page \(A4\) abstract](#) to: fabian.hartmann@uni-wuerzburg.de

Notification of acceptance: 15.06.2026

Fees

The workshop fee is 350 €.



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