

## Program of the 12<sup>th</sup> Brazilian-German Workshop on Applied Surface Science

Monday, September 22<sup>nd</sup>, 2025

### *Nanoporous materials*

12:00-13:30      *Lunch*

13:30-14:00      Opening

14:00-14:45      Christof Wöll  
*Layer-by-layer synthesis of MOF thin films: enhancing optical properties and electrical conductivity through self-driving robotic laboratories*

14:45-15:30      Carlos César Bof Bufon  
*Enhancing device functionality through defect engineering in surface-supported Metal-Organic Frameworks*

15:30-16:00      *Coffee break*

16:00-16:45      Abner de Siervo  
*On-surface synthesis of porous planar carbon lattices*

16:45-17:10      Elisa S. Orth, Bernardo M. Régnier, André H. G. Martinez, Vinícius O. Costa, Mayara G. Gonçalves, Mariane Burgo, Gabriel C. B. Gomes, Aldo J. G. Zarbin  
*Gambling with nano functionalization for catalysis: how good can it get?*

17:10-17:30      Two-minute poster pitches

17:30-19:00      Poster session

19:30              *Dinner*

## Program of the 12<sup>th</sup> Brazilian-German Workshop on Applied Surface Science

Tuesday, September 23<sup>rd</sup>, 2025

### 2D-Materials, Oxides

9:00-9:45                      Sabine Maier  
*On-surface synthesis: crafting atomically precise nanographenes and patterned 2D materials*

9:45-10:30                  Luis Henrique de Lima  
*Probing the local atomic structure of corrugated  $sp^2$ -hybridized monolayers*

10:30-11:00                *Coffee break*

11:00-11:45                Hongde Yu, Thomas Heine  
*Magnetic carbon*

11:45-12:30                Jörg Libuda  
*Precision growth of low dimensional materials by ALD: from surface science to the solid/liquid interface*

12:30-14:00                *Lunch*

14:00-14:45                Katharina J. Franke  
*Engineering electronic and phononic properties by atomic-scale defects*

14:45-15:30                Lars Mohrhusen  
*Titanium-based sulfide and oxide (nano)catalysts for the (photo-)activation of greenhouse gases*

15:30-15:55                Jeison Fischer  
*Engineering of 2D materials: new phases, magnetic states, and quantum impurities*

15:55-16:25                *Coffee break*

16:25-17:10                Victor Lopez Richard  
*When surfaces remember: memory effects in 2D materials and oxides*

17:10-17:55                Martin Sterrer  
*Controlling the charge state of organic molecules on ultrathin dielectric films*

17:55-19:00                Individual Networking

19:30                         *Dinner*

## Program of the 12<sup>th</sup> Brazilian-German Workshop on Applied Surface Science

Wednesday, 24<sup>th</sup>, 2025

### ***Molecular layers***

- 9:00-9:45      Aldo J.G. Zarbin, Maria K. Ramos, Carla R. Klimpovuz  
*Multifunctional nanoarchitected thin films for sustainable energy: aqueous and beyond-lithium-ion batteries, hydrogen generation and electrochromism*
- 9:45-10:30      Noah Al-Shamery, Florian Heppner, Carsten Dosche, Dimitrios Valavanis, Thomas Bredow, Gunther Wittstock, Paul Wilson, Patrick R. Unwin, Pooi See Lee  
*Melanin-inspired materials: crossing borders for multifunctional applications*

10:30-11:00      *Coffee break*

- 11:00-11:45      Hans-Peter Steinrück  
*How to tailor the surface enrichment of metal complexes in ionic liquids*

- 11:45-12:30      Andreas Terfort  
*Effect of fluorine-induced dipole moments in self-assembled monolayers*

- 12:30-12:55      Alisson Ceccatto, Gustavo Campi, Vanessa Carreño, Eidsa Ferreira, Natalie J. Waleska-Wellnhofer, Eva Marie Freiburger, Simon Jaekel, Duncan John Mowbray, Christian Papp, Hans-Peter Steinrück, Abner de Siervo  
*On-surface design of highly-ordered two-dimensional networks stabilized by non-metal atoms*

12:55-14:00      *Lunch*

14:00-17:30      Conference outing

17:30-22:00      *Conference dinner at Alpe Dornach*

## Program of the 12<sup>th</sup> Brazilian-German Workshop on Applied Surface Science

Thursday, 25<sup>th</sup>, 2025

### *Heterogeneous catalysis and nanomaterials*

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|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00-9:45   | <u>Paulo Roberto Bueno</u><br><i>Quantum Coherent Electron Transport in Electrolyte Ambient</i>                                                                                                                                                                                                                                                                             |
| 9:45-10:30  | <u>Fabiano Bernardi</u><br><i>Tracking complex atomic-scale events in nanostructures under reactive environments</i>                                                                                                                                                                                                                                                        |
| 10:30-11:00 | <i>Coffee break</i>                                                                                                                                                                                                                                                                                                                                                         |
| 11:00-11:45 | <u>Swetlana Schauer mann</u><br><i>Towards low-temperature heterogeneous hydrogenation of carbonyl compounds: molecular systems for reversible hydrogen storage</i>                                                                                                                                                                                                         |
| 11:45-12:30 | <u>Gustavo Martini Dalpian</u><br><i>Learning from machine learning: discovering new science for materials</i>                                                                                                                                                                                                                                                              |
| 12:30-14:00 | <i>Lunch</i>                                                                                                                                                                                                                                                                                                                                                                |
| 14:00-14:45 | <u>Christian Papp</u> , Michael Moritz, Christoph Wichmann, Andreas Görling, Hans-Peter Steinrück, Peter Wasserscheid.<br><i>Catalysis with liquid metal alloys</i>                                                                                                                                                                                                         |
| 14:45-15:10 | <u>Pablo Ribeiro Alves de Oliveira</u> , Pedro Venezuela, Fernando Stavale, Jorge Anibal Boscoboinik<br><i>AP-XPS and DFT investigation on CO<sub>2</sub> adsorption and CO oxidation on ZnS surface</i>                                                                                                                                                                    |
| 15:10-15:35 | <u>Ana Luiza Costa Silva</u> , Rafael S. W. Silva, Lucas A. Moisés, Adenilson J. Chiquito, Marcio P. F. de Godoy, Fabian Hartmann, Victor Lopez-Richard<br><i>From memory traces to surface chemistry: decoding REDOX reactions</i>                                                                                                                                         |
| 15:35-16:05 | <i>Coffee break</i>                                                                                                                                                                                                                                                                                                                                                         |
| 16:05-16:50 | <u>Hans-Joachim Freund</u><br><i>Preparation and characterization of model catalysts using surface science-based techniques</i>                                                                                                                                                                                                                                             |
| 16:50-17:35 | <u>Túlio Rocha</u><br><i>Functional interfaces probed with soft X-ray spectroscopy</i>                                                                                                                                                                                                                                                                                      |
| 17:35-18:00 | <u>Rafael R. Barreto</u> , Guilherme Rodrigues-Fontenele, Luisa V. C. Freitas, Lucas A. B. Marçal, Wendell S. Silva, Gilberto Rodrigues-Junior, Douglas Miquita, Khadiza Ali, Dina Carbone, Mario S.C. Mazzoni, Angelo Malachias, Rogerio Magalhaes-Paniago<br><i>Co-existence of surface electronic confinement and topological states in Sb<sub>4</sub>Te<sub>3</sub></i> |
| 18:00-18:30 | Individual Networking                                                                                                                                                                                                                                                                                                                                                       |
| 18:30       | <i>Reception</i>                                                                                                                                                                                                                                                                                                                                                            |
| 19:30       | <i>Dinner: Bavarian evening</i>                                                                                                                                                                                                                                                                                                                                             |

## Program of the 12<sup>th</sup> Brazilian-German Workshop on Applied Surface Science

Friday, 26<sup>th</sup>, 2025

### ***New materials, electrochemistry***

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| 9:00-9:45   | <u>Lola González-García</u><br><i>Electrofluids: liquid composites for flexible, conductive materials</i>                                                                                                                                                                                                        |
| 9:45-10:30  | <u>Fabian Hartmann</u> , Soumen Pradhan, Kirill Miller, Merit Spring, Silke Kuhn, Victor Lopez-Richard, Michael Sing, Ralph Claessen, Sven Höfling<br><i>Oxide interface-based reconfigurable devices for neuromorphic and reservoir computing applications</i>                                                  |
| 10:30-11:00 | <i>Coffee break</i>                                                                                                                                                                                                                                                                                              |
| 11:00-11:45 | <u>Olaf Brummel</u> , Leon Jacobse, Alexander Simanenko, Xin Deng, Simon Geile, Olof Gutowski, Vedran Vonk, Yaroslava Lykhach, Andreas Stierle, Jörg Libuda<br><i>Chemical and structural in-situ characterization of model electrocatalysts by combined infrared spectroscopy and surface X-ray diffraction</i> |
| 11:45-12:00 | Closing remarks                                                                                                                                                                                                                                                                                                  |
| 12:00-13:30 | <i>Lunch</i>                                                                                                                                                                                                                                                                                                     |
| 13:30       | Departure                                                                                                                                                                                                                                                                                                        |