



## ADVANCED MATERIALS SCIENCE

Fields of Expertise TU Graz

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**T**his year, for the first time, the FoE Advanced Materials Science brought together colleagues from all seven faculties. We enjoyed this range of research at our Advanced Materials Science Poster Day.

The event was a great success, with more than 60 posters presented. Our 2025 ERC grant recipients (Starting and Proof of Concept) opened the event with inspiring talks in which they shared their ideas on how to turn their know-how into practical and literally portable applications. Afterwards, lively discussions took place at the poster session with snacks and drinks. The next Advanced Materials Poster Day will be held on 3rd February, 2027, so make a note of the date!

In the 24th call of the TU Graz initial funding programme, we supported innovative project proposals in the areas of physics, chemistry and mechanical engineering: Max Schmallegger and Verena Lipic from the Institute of Physical and Theoretical Chemistry, Kevin Ayrton Pendl from the Institute of Strength of Materials, Kriti Batra from the Institute for Chemistry and Technology of Materials and Markus Koch from the Institute of Experimental Physics. The project ideas range from additive manufacturing, either by using light to initiate chemical reactions with spatial control or by upcycling ceramic

waste as printing material, to developing self-assembling frameworks to protect enzymes as catalysts and sensors. Projects also include investigating the photocatalytic role of water-splitting materials for hydrogen production, and capturing the dynamics of recrystallization processes in materials based on their microstructural defects. We wish all the recipients much success with their project proposal submissions.

In this edition, Franziska Stamm from the Institute of Applied Geosciences talks about her research focus. She aims to understand how the ongoing breakdown and chemical transformation of silicate minerals and related processes are influenced by environmental chemistry and, ultimately, how they contribute to the long-term storage and cycling of atmospheric CO<sub>2</sub>. To uncover the underlying mechanisms, particularly those involving poorly crystalline and amorphous silicates, she combines experimental mineral and water chemistry with isotope geochemistry.

Another contribution to this edition of TU Graz research, from Matthias Neumann of the Institute of Statistics, highlights how statistical and data-driven approaches can be used to uncover properties and processes in materials of complex composition, from the complementary perspective of the FoE Information, Communication & Computing.



**Karin Zojer, Gregor Trimmel  
and Sergio Amancio**

Source: Lunghammer – TU Graz

Advanced Materials Science

