



Working Group Biominerals and the Environment:

report October 2025

The WG-BME Board: Giovanni DE GIUDICI (Chair), Kevin ROSSO (Vice Chair), Juraj MAJZLAN (Vice Chair) and Karen HUDSON-EDWARDS (Secretary).

The WG comprises the following colleagues from many countries:

Andreas Kappler (Germany); Juan Liu (China); Lucian Staicu (Slovenia); Francesco di Benedetto (Italy); Eric van Hullebusch (France); Pupa Gilbert (USA); Jonathan Lloyd (UK); Łukasz Kruszewsk (Poland); Karim Benzerara (France); Juan Liu (China); Julie Cosmidis (UK); Maria Dittrich (Canada);

WG board and members are expected to help plan or lead activities to promote BME topics, such as organizing symposia or journal special issues. The main activities of the WG were:

- **IMA Lyon 2022**- session Biominerals and environmental mineralogy- Convenors: Giovanni De Giudici, Kareen Hudson-Edwards, Juraj Majzlan, Kevin Rosso.
- **EMC2 - Dublin 2024**, Session: “Biominerals and environment”. Convenors: Giovanni De Giudici, Kareen Hudson-Edwards, Juraj Majzlan, Kevin Rosso.
- Summer School “**Biomineral and The Environment**”, Italy 5-8 September 2023 see leaflet attached), 25 students attending the school, 6 WG members teaching.
- IAGC 3 conference, Cagliari 16 – 21 June 2025, a session on Biominerals and the environment <https://www.unica-wri-18.it/>
- **Workshop on Biominerals**, 30 June – 4 July 2025, Tübingen Germany.
- **IMA Nanjing 2026** - session proposal: “**Biominerals and the Environment**”, convenors Giovanni De Giudici, Jonathan Lloyd, Juan Liu, Pupa Gilbert, Juraj Majzlan, Kevin Rosso.

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Ongoing activity:

Devising summer schools, developing editorial projects and proposing workshop symposia on the following topics (list not exhaustive):

- Bioinspired materials alternatives to cement and concrete: microbially precipitated minerals (CaCO₃, others) as biomaterials
- Sustainable mine technologies: biometallurgy,
- Biominerals and environmental resilience
- Biominerals used to stabilize carbon in soils and sediments,
- Building material restoration (e.g. limestone)

Editorial project: we are evaluating to advertise our WG and implement biomineral literature with a state-of-the-art paper or a special issue. During the next 6 months we expect to further enlarge our WG and define a detailed editorial plan. WG Vice-Chairman Rosso was recently appointed to the Editorial Board of the new Elsevier journal Geo-Bio Interfaces, sponsored by MinSoc, which could serve as an opportunity for a special issue on our WG topics.

We copy at the end of this report the WG overview.

On the behalf of the WG board

Giovanni De Giudici

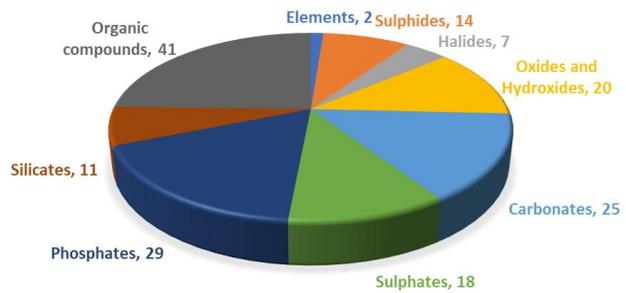
Chairman of the WG Biomineral and The Environment

- **WG Overview:**

Biominerals: a continuously growing family

Biominerals are the product of an organism's activity leading to mineral formation within the cellular space or in the space surrounding the organism. In the last decades biominerals have received growing interest from a large interdisciplinary scientific community.

Actually, biominerals are known from the geological record to play a pivotal role in biogeochemical cycles of elements. Thus, understanding biomineralization processes in widely different environments helps us to understand environmental changes induced by anthropic activities, as well as the environment's resiliency. Moreover, they offer diverse examples to devise useful biobased materials and allow the development of technologies for environmental sustainability.



Working Group Biominerals and The Environment was created around the concept that **biominerals, in all their diversity of forms, are central to environmental function and human activities in the environment.**



However, the community of specialist researchers in this topical area currently lacks a forum for information exchange to discuss and promote this science. It is the charter of the WG-BME to bridge this gap by rallying a set of enthusiastic leaders from the community that can help promote relevant research, both basic and applied, and foster dissemination more broadly. The members of the WG act on a voluntary basis and participate with a collaborative approach to pursue said aim.

For info write to bio-enviro-office@mineralogy-ima.org

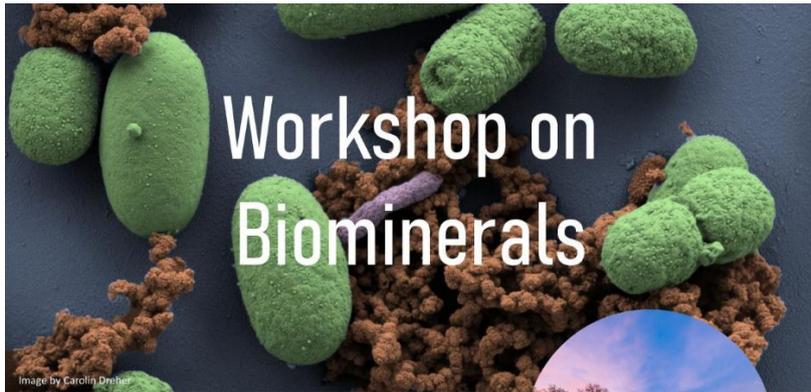
IMA Summer School 2023

Biominerals and the Environment

Cagliari (Italy)

<https://sites.unica.it/biominerals-and-environment/>





**30 June – 04 July (2025)
University of Tuebingen
Germany**



For international PhD students with interest in Geomicrobiology, Environmental Sciences and Astrobiology.

- **Renowned experts** will share their expertise in biominerals.
- Specialized hands-on **laboratory training** in biomineral characterization.
- **Field Excursion to the Black Forest** - visit historical mines showcasing **bio-stalactites with an expert guide!**

Fee: 450 EUR (includes accommodation, daily lunch, excursion and social events).

Application: Submit a 1-page **motivation letter** detailing your research interests and how the workshop will benefit your work to Prof. Andreas Kappler andreas.kappler@uni-tuebingen.de

- Only 20 spots available-

Application **deadline: May 1st, 2025**
(or as soon as all spots are filled)

Further information on our website: <https://uni-tuebingen.de/de/84441>

