



Mineralogical Society of Poland

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YOUNG RESEARCHERS AWARDED

As every year, young researchers have been recognized for the best doctoral and master's theses. In 2024, the award for the best master's thesis went to **Patrycja Tomala**, while the doctoral category featured two laureates: **Katarzyna Derkowska** and **Bartosz Puzio**. Below, we introduce the winners and their research.



Laureates and their supervisors at the PTMin General Assembly during the diploma ceremony. (LEFT TO RIGHT): Jakub Kierczak, Maciej Manecki, Bartosz Puzio, Patrycja Tomala, Artur Kuligiewicz, Łukasz Musielok, and Chair of the Competition Committee, Jacek Szczepański.

MSc Patrycja Tomala, awarded for the best master's thesis in 2024, completed her research under the supervision of **Dr. Łukasz Musielok** (Jagiellonian University) and **Dr. Artur Kuligiewicz** (Institute of Geological Sciences, PAN). Her thesis, "*Properties of Late Carboniferous paleosols as indicators of paleoenvironmental conditions*," explored soils formed over 300 million years ago in the Upper Silesian Coal Basin. By analyzing mineralogy, chemistry, and soil micromorphology from six drill cores, she reconstructed the ancient environment, revealing evidence of warm, humid tropical conditions, episodic sediment accumulation, and fluctuating groundwater levels. Micromorphological studies proved particularly important, allowing certain features to be identified such as root traces, soil aggregates, and illuviation structures that preserve a record of soil formation processes, even in poorly developed profiles. Patrycja's work demonstrates that even subtle soil features can provide key insights into past landscapes, highlighting the lasting value of paleosols for reconstructing Earth's environmental history.



Katarzyna Derkowska

Dr. Katarzyna Derkowska, a researcher at the Polish Geological Institute, explores the legacy of centuries-old copper smelting in Lower Silesia. Her award-winning PhD at the University of Wrocław, supervised by **Prof. Jakub Kierczak** and **Prof. Anna Potysz**, was titled "*Phase and chemical characterization of metallurgical slags from the Old Copper Basin and their environmental impact*." Her work focused on industrial slags left behind from the 18th to 20th centuries, using advanced mineral analysis and thermodynamic

modeling to reconstruct smelting temperatures and techniques over time. Her research also revealed how these historic wastes continue to affect the environment today, releasing copper, zinc, lead, and cadmium into nearby soils. Katarzyna's findings not only connect the region's industrial past with its environmental present, but also provide insights into how human activity leaves a lasting mark on the Earth. More details



Société Française de Minéralogie et de Cristallographie

www.sfmc-fr.org

5th EUROPEAN MINERALOGICAL CONFERENCE

2–7 July 2028, Brest, France

emc²⁰²⁸

2-7 July
Brest | France

Thanks to the involvement of the extended committee and members from the French Society for Mineralogy and Crystallography, the Fifth European Mineralogical Conference will be held in Brest city center, at the impressive Quartz Conference Center, in France. The conference will be from Sunday, July 2nd to Friday, July 7th, 2028. This conference will be the opportunity to celebrate the SFMC's 150th anniversary; the society was founded on March 21, 1878, on the initiative of A. Des Cloizeaux, a professor at the Museum of Natural History (Paris).

The scientific committee will prepare sessions to cover a wide range of themes, from traditional to modern mineralogy, petrology and geochemistry from Earth and planetary sciences that are as broad and inclusive as possible. The local organizing committee is preparing numerous attractions accompanying the main event, including field trips (Groix Island, Ploumana'ch granites, the Saints Valley, etc.).

Learn more at: <https://emc2028.sfmc-fr.org/>.

Save the date!

We hope to meet you in Brest in July 2028.

can be found in her publications: Kądziołka et al. (2020, *Journal of Archaeological Science*); Derkowska et al. (2021, *Minerals*); and Derkowska et al. (2023, *Applied Geochemistry*).



Bartosz Puzio

Dr. Bartosz Puzio, an engineering specialist at the AGH University of Science and Technology in Kraków, was recognized for his groundbreaking PhD research supervised by **Prof. Maciej Manecki**. His dissertation, "*A new method of predicting thermodynamic functions for minerals from the apatite group*," tackled one of the largest and most diverse mineral groups in nature. Puzio developed a universal regression algorithm capable of predicting fundamental thermodynamic properties of phosphate, arsenate, and vanadate apatites—including molar volume, enthalpy of formation, and standard entropy—with a precision comparable to experimental methods. This innovative approach not only refines our understanding of these complex minerals, but also opens the door to modeling Gibbs free energy, solubility constants, and geochemical reactions. His findings, published in *Contributions to Mineralogy and Petrology* (Puzio and Manecki 2022, 2025), provide a valuable tool for extending predictions to other mineral groups, such as tourmalines or amphiboles.