

## VI GRANULITES &amp; GRANULITES CONFERENCE, SEPTEMBER 2024, VERBANIA, ITALY

Granulites are high-grade metamorphic rocks that form in the middle to lower crust. They preserve different aspects of processes (hence Granulites & Granulites) such as crustal anatexis, melt extraction and transfer, lower crustal structure and composition, and crust–mantle interactions. The discussion of such processes brings together scientists from all over the world at the Granulites & Granulites Conference the VI edition of which was held on 02–06 September 2024 in Verbania, on the beautiful shores of Lake Maggiore in northern Italy.

Some 135 participants (37% female) from 27 countries and 6 continents contributed 66 oral and 55 poster presentations to a packed programme over four days. Reconstruction of deep crustal processes is generally supported by **petrochronology** and **thermodynamic modelling**, which were the subjects of two sessions, including presentations on long-term melt generation, ultrahigh-temperature metamorphism, its duration and effect on crustal differentiation, crustal thickening, melt focusing and migration, long-lived crustal roots, and exhumation of metamorphic rocks through time. Another session focused on **geochemical tracing** of processes such as crustal differentiation and melt loss, melting of mafic crust and volatile recycling, and also discussed the curse and blessing of trace element mobility. The **timescale of metamorphism** was the focus of presentations discussing zircon dissolution-precipitation, in situ U-Pb and Lu-Hf dating of garnet and ultrahigh metamorphic reactions. A special session was devoted to the **Ivrea-Verbano Zone** with emphasis on carbon content and mobility, melt–rock reactions, accessory minerals and radiogenic heat production, geochemistry of ultramylonites and amphibolites, geochronology, and geophysical properties of the lower crust. A broader view was presented in the session on **lithospheric processes**, which discussed mechanisms for generating hot crust, global peaks in granulite temperature–pressure ratios, lithosphere-scale fluid transfer, and earthquake-induced fluid flow in granulites.



Delegates at the Granulites & Granulites Conference with the Lake Maggiore in the background. PHOTO: PIERRE LANARI.

Early career researchers made up a large proportion of the delegates with 43 oral and poster presentations. Their reduced fee was made possible by a sponsorship of the European Association of Geochemistry, the Swiss Geological Society, the Italian Society of Geochemistry, the University of Padova, and industry sponsor like Zeiss, Assing, and JEOL. The award for the best student talk was given to Ankan Bhattacharyya (University of Bern, Switzerland) who presented results on garnet trace element composition across metamorphic grade. He reflects,

“This my first major conference and a remarkable experience. What stood out most for me were the insightful discussions with eminent geologists whose work has shaped my research in many ways. I got to know them on a personal level and learn from them. I had an amazing time connecting with peers, exchanging ideas, and getting to understand their research. I left the conference with new scientific insights and as a more informed researcher.”

The best student poster was presented by Caliméria Passos do Carmo (University of Toulouse, France) on the topic of tracing crustal assimilation and magma hybridisation in the lower crust. She stated,

“Attending the conference was an exceptional opportunity to engage with cutting-edge research on metamorphism and continental crust formation. As a final-year PhD student, I found it an immensely fruitful immersion into discussions on key topics such as the distribution of elements within the crust and the mobility of carbon in high-temperature processes. With the stunning views of Lago Maggiore as a background, the conference perfectly balanced passionate scientific discussions during breaks with the enjoyment of the beautiful surroundings.”



The winners of the student awards Caliméria Passos do Carmo (LEFT) and Ankan Bhattacharyya (RIGHT) with Bernardo Cesare, member of the Organising Committee. PHOTO: PIERRE LANARI.

The programme was further enriched by various mid-conference activities, including an excursion to the “Moho,” a thermodynamic modelling workshop led by Nicholas Riel (Johannes Gutenberg University Mainz, Germany), and a visit to the spectacular granulite-facies marble used exclusively for the construction of the Duomo of Milano.

The Granulites & Granulites Conference has always included **field excursions** and this edition was no different. The pre-conference excursion was led by Omar Bartoli, Jörg Hermann, Antonio Langone, Othmar Müntener, and Daniela Rubatto. Over two days, about 60 delegates visited the nearby Ivrea-Verbano crustal section from mantle peridotites to volcanics. They were able to see in outcrop and discuss the magmatic and metamorphic processes that shape the crust and what actually constitutes the lower crust. A three-day post-conference excursion went to the nearby Finero Complex and Central Alps (northern Italy and southern Switzerland), where Jörg Hermann and Alberto Zanetti discussed granulites in an orogenic cycle. A four-day post-conference excursion led by Patrizia Fiannacca and Antonio Langone visited the Serre Massif, Capo-Vaticano Promontory and Palmi area in Calabria (Italy) to showcase crustal differentiation, anatexis, magma hybridisation, and extraction. The post-conference excursions were not always blessed with the best weather, but this did not dampen the intense discussions.

The meeting was supported by three national societies, the French Society of Mineralogy and Crystallography (SFMC), the Swiss Geological Society, and the Italian Geochemical Society. The international organising committee included Bernardo Cesare (University of Padova), Christian Chopin (École Normale Supérieure de Paris, CNRS and SFMC), Patrizia Fiannacca (University of Catania), Jacob Forshaw (University of Bern), Jörg Hermann (University of Bern), Pierre Lanari (University of Bern, University of Lausanne and SFMC), Antonio Langone (University of Pavia), Othmar Müntener (University of Lausanne), Daniela Rubatto (Chair, University of Bern and University of Lausanne) and Alberto Zanetti (Italian National Research Council).

During the conference, it was also possible to present the bids for the next two editions, to be held in Canada in 2027 and in Finland in 2030; the community is grateful to those who have committed themselves to continue the conference and wishes them good luck!

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for the Organising Committee