
El Tatioo(Chile).Photographer: Rebecca Biagi.

GEOCHEM NEWSLETTER

January 2026, n.21

IN THIS ISSUE

So.Ge.I. – ITALIAN GEOCHEMICAL SOCIETY

Contacts

President:
Orlando Vaselli
presidenza@societageochimica.it
orlando.vaselli@unifi.it

Secretary:
Marino Vetuschi Zuccolini
segreteria@societageochimica.it

Presidential Council:
Walter D'Alessandro
walter.dalessandro@ingv.it
Enrico Dinelli
enrico.dinelli@unibo.it
Barbara Nisi
barbara.nisi@igg.cnr.it

Webmaster:
Stefania Venturi
stefania.venturi@unifi.it

Letter from the President

Orlando Vaselli

Dear Friends and Colleagues,

I have to start the GeochemNewsletter n. 21 with Barbara Nisi who left this world on the 8th of November 2025 after struggling with a terrible cancer that did not leave any possibility to her life. Barbara was a member of the So.Ge.I. scientific committee and we decided not to replace her until the new elections will take place. For me, Barbara was first of all a friend and then, a colleague with whom I spent more than two decades, from her PhD to the many field campaigns and congresses we had together. It will be very hard to leave without her smile. Every day I see her empty desk that is just in front of mine since we were in the same office. I cannot still believe she is not with us. I will miss her! I cannot say "the show must on"! No, it is just the passion for my work and the friends and colleagues I am working with who allow me to keep going ahead. Everything will be different, anyway. I do apologize if I began this letter with a very personal thought. I hope you may understand.

From the 19th to the 23rd of January 2026, Stefano Covelli (UNITS) with Christian Millo and Douglas Galante (University of São Paulo) are organizing a Winter School titled "*Deep-sea mineral deposits: from biogeochemistry to geopolitics*". This School is partially sponsored by our Society and is facing a very interesting aspect of geology, being related to marine georesources which will have (and actually have) a very important development in the next few years since the increasing demand of raw and critical materials is becoming exponential. You will find the flier of this event inside this newsletter. Almost 40 participants will be attending this Winter School.

From the 9th to the 12th of February 2026, a workshop, fully organized by the Italian Society of Geochemistry, titled "*Geochemical modeling applied to natural fluid-rock systems*" will be held in Florence, at the Capponi School Complex and the Department of Earth Sciences. The workshop is organized and held by Donato Belmonte (UNIGE), Giordano Montegrossi (CNR-IGG), Giuseppe Saldi (UNIPG) and Marino Vetuschi Zuccolini (UNIGE) in collaboration with Stefania Venturi (UNIFI). The course will recall the thermodynamic principles and theoretical framework that are at the base of geochemical codes and necessary for their correct use. The instructors will cover aqueous solution speciation, the numerical methods used to solve gas-water-rock equilibrium systems, and the role of thermodynamic databases in understanding the data and affecting the model results. Participants are expected to learn how to process large datasets (including thousands of data points) and present results through graphs derived from speciation and solubility calculations. They will also learn the importance of time (through kinetic modeling) and temperature on geochemical reactions. The final part of the course will focus on inverse models, enhancing participants' skills in transport and reactivity modeling. The complete program and the motivations of this workshop are reported in the newsletter. I hope that this workshop will be prodromic to an advanced course of geochemical modeling that is intended to be organized in 2027.

After this workshop, the next appointment with the So.Ge.I. activity is the Vulcano Summer School 2026 whose topics have been changed into: "*Sampling Techniques in Extreme Environments*". The School will be held from the 15th to the 19th of June 2025.
The title was changed since this School is becoming more multi-disciplinary, being researchers and participants from different fields are attending the Vulcano event, being including fluid geochemistry, micro- and biology, atmospheric chemistry and volcanology. In the newsletter, Rebecca Biagi and Antonio Randazzo are presenting the 2026 School that already has about 100 pre-inscriptions. It is a School that attracts people from many countries worldwide and Bachelor, Master, PhD and Post-Doc students can join it. This implies and requires a strong effort by the organizers (Rebecca Biagi, Sergio Calabrese, Lorenza Li Vigni, Guendalina Pecoraino, Antonio Randazzo, Andrea Ricci, Franco Tassi, Francesco Tripodi and Stefania Venturi) to keep this event occurring every year. There are no registration fees, while travel, accommodation and meals are charged by students. There is a very good news since this year the School will also be supported by IACVEI along with that will support travel expenses (e.g. airline tickets) but no accommodation costs. The grants are only provided to 2006 IAVCEI-CCVG members. The will be reimbursed to the travel grant awardees after the event upon submission of valid receipts. More infos can be found in the Rebecca and Antonio's note as well as at https://sites.google.com/view/vulcanosummerschool2026. Please, do not forget that the inscriptions to the School are open up to the 30th of March, 2026.

The end of June and early July 2026 (from the 30th to the 3rd) is dedicated to the 3rd Congress of the Italian Society of Geochemistry, titled: "*Geochemistry across time and space*". This event will be held in Ravenna at the Palazzo dei Congressi, located in the heart of the Ravenna's historic center, within walking distance of the city's UNESCO World Heritage monuments and easily accessible by train and car. Four are the main thematic sessions. They reflect both the diversity and the strong integrative nature of modern geochemistry (from theoretical and experimental approaches to applied studies addressing environmental, volcanic, and societal challenges).

Letter from the President

Orlando Vaselli

Nicolas Greggio and Enrico Dinelli provide for this newsletter a report of activities into which this congress is articulated partly resembling that of the previous editions held in Genoa (2022) and Perugia (2024). In fact, we will have a session on *Experimental and Computational Geochemistry* with Giuseppe Saldi (UNIPG), Donato Belmonte (UNIGE), Barbara Cantucci (INGV-Rome), as conveners. The second session is concerning *Recent Advances and Emerging Applications in Isotope Analysis*, whose conveners are Massimo Marchesi (UNI-Rome La Sapienza), Eleonora Regattieri (CNR-IGG), Fausto Grassa (INGV). The third session, *Biogeochemical Cycles and Anthropogenic Activities,* is convened by Daniela Varrica (UNIPA), Federico Floreani (UNITS), Antonio Randazzo (INGV-Rome). The last, but not the least, has as topic: *Geochemistry of Magmatic–Hydrothermal Systems: Multidisciplinary Approaches for Volcanic Monitoring and the Exploration of Geothermal Energy and Earth Resources*, whose conveners are Matteo Lelli (CNR-IGG), Rebecca Biagi (UNIFI), Giulio Bini (INGV-OV). In the Nicolas and Enrico's note, the names of plenarists and key-speakers are also reported. It is possible that a few changes are expected, although top-scientists will in any case involved. The congress is sponsored by the Department of Biological, Geological and Environmental Sciences of Bologna, INGV and CNR. Many thanks are also due to the Municipality of Ravenna, CIRSA (Center for Research in Environmental Sciences and CIFLA (Innovation Center of the Flaminia Foundation). Private companies (Analytical Pollution, Encotech and ThermoFisher) are gratefully acknowledged for supporting this congress. During this event, there will be two other important events. The first one is related to the awards to the best PhD theses: Premio Galli, Premio Tonani e Premio Tongiorgi. There will also be Premio Nisi in memory of Barbara. Before the end of January, the call for application to these awards will come out. Before the end of the congress, it has to be decided where the next congress (2028) will be held. Thus, be ready to submit your application in Ravenna. See you in Ravenna!

Last September a two-days meeting dedicated to Mercury (as element) and titled *Mercury, from a requested to a banned element* was held at Miniera del Siele (Piancastagnaio) and Miniera di Abbadia San Salvatore. Federica Meloni reports the main results of this event where more than 40 participants attended it. This workshop was very successful and I do really hope that it will be repeated in a near future. This free-of-charge event was financially supported by the National Park Museum of the Mt. Amiata Mines and the Italian Society of Geochemistry.

The last contribution is by Jacopo Cabassi and Lorenzo Chemeri (LC) who provided an up-to-date of the followers of our socials (Instagram, Facebook, LinkedIn and Twitter). The number of followers is increasing also due to the fact that posts of field-trips, projects and congresses are submitted, although more contributions are to be sent to LC. Thus, you are kindly requested to be more active in order to spread as much as possible our initiatives.

I would also like to draw your attention to the Special Issue "*Geochemical Processes and PTEs Distribution in Mine Waters*" on Hydrology (ISSN 2306-5338) https://www.mdpi.com/journal/hydrology/special_issues/2LP89G32T9. This Special Issue focuses on the geochemical and hydrogeochemical processes controlling the occurrence, transport, and attenuation of Potential Toxic Elements (PTEs) in mine water systems and aims to collect high-quality original research papers and reviews addressing key processes governing mine water chemistry across different geological, climatic, and hydrological settings. Contributions may include, but are not limited to, studies on metal and metalloid behavior, biogeochemical processes, secondary mineral formation, modelling approaches, long-term trends, and interactions between mine waters and receiving environments.
Guest Editors: Federica Meloni, Jacopo Cabassi, Lorenzo Chemeri, Josè Ignacio Barquero Peralbo
Deadline for manuscript submissions: August 31, 2026.

Finally, Stefania Venturi and Jacopo Cabassi are gratefully acknowledged for their amazing and precious work. Stefania keeps handling all the newsletter issues while Jacopo tirelessly assembles the list of publications of our members. From the last issue of this newsletter, 110 articles have been published. The publications are sorted by Scopus, independently by the IF of the journal. If there are publications that are not quoted by Scopus but they are of international relevance, you are kindly asked to send the citations (or the Digital Object Identifier: doi) to my e-mail address. They will be included in the next newsletter.

UNIVERSITÀ DEGLI STUDI DI TRIESTE | Dipartimento di Matematica, Informatica e Geoscienze | INSTITUTO OCEANOGRÁFICO | USP

A **Winter School** organized by USP Academy

in collaboration with

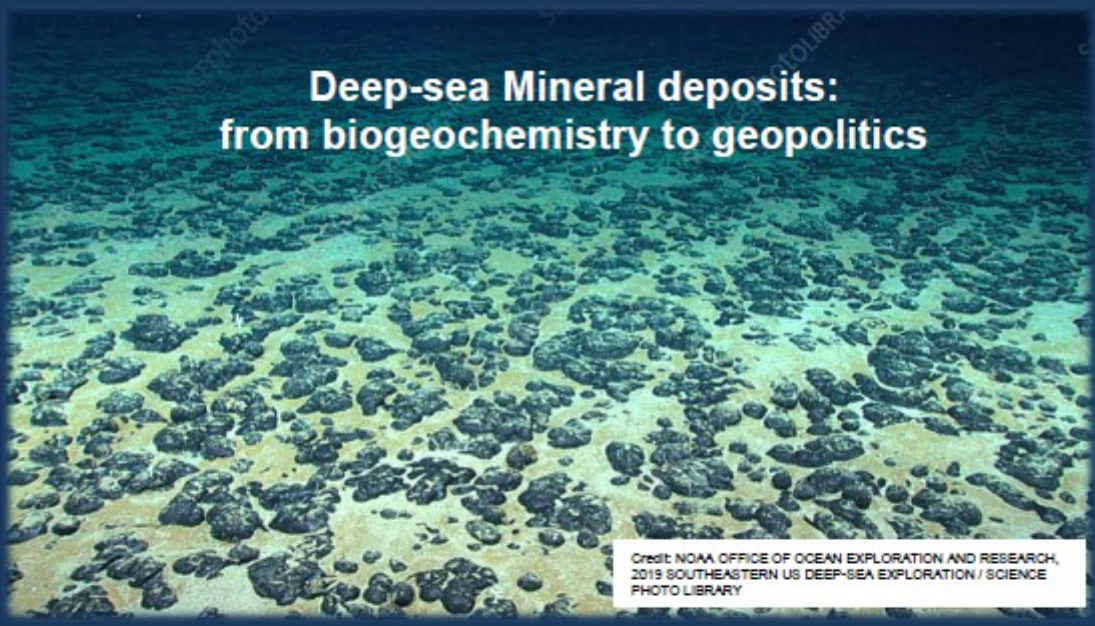
Dept. of Mathematics, Informatics and Geosciences, University of Trieste

January 2026, Monday 19th - Friday 23rd

Venue: University of Trieste, Dept. of Mathematics, Informatics and Geosciences

Room A, Building "O", Via Weiss 6, Trieste (Italy)

Deep-sea Mineral deposits: from biogeochemistry to geopolitics



Credit: NOAA OFFICE OF OCEAN EXPLORATION AND RESEARCH, 2019 SOUTHEASTERN US DEEP-SEA EXPLORATION / SCIENCE PHOTO LIBRARY

Prof. Dr. Christian Millo
Oceanographic Institute, University of São Paulo USP, Brazil; millo@usp.br

Prof. Dr. Douglas Galante
Institute of Geosciences, University of São Paulo USP, Brazil; galante@usp.br

Host: **Prof. Dr. Stefano Covelli**
Dept. of Mathematics, Informatics and Geosciences, UNITS, covelli@units.it

Participation is free upon registration till January 11st 2026. Max number participants: 65

Register now at: https://mige-web.units.it/winterschool

SOCIETÀ GEOCHIMICA ITALIANA

Course on

Geochemical Modelling Applied to Natural Fluid-Rock systems

Firenze
9-12 February 2026

Geochemical Modelling Applied to Natural Fluid-Rock systems

Geochemistry is a fundamental tool for investigating subaerial systems, hydrothermal–volcanic systems, ore deposits, and mineral alteration processes. Through geochemical analysis, scientists can trace the origin, migration, and evolution of fluids responsible for mineralization, reconstruct the thermal and chemical gradients of ancient systems, and identify the mechanisms driving element transport and deposition. In hydrothermal systems, for instance, geochemistry helps reveal how temperature, pressure, and fluid composition influence the solubility of metals and the formation of ore minerals. Isotope geochemistry can help distinguish between magmatic, meteoric, and metamorphic fluid sources, while trace element distributions shed light on reaction pathways and alteration zoning. Similarly, in the context of ore deposit exploration, geochemical mapping and mineral–fluid equilibrium modeling provide critical insights into the spatial and temporal evolution of mineralizing systems. Understanding these processes not only aids in resource discovery but also in the development of sustainable mining strategies and post-mining environmental management. Ultimately, geochemistry bridges the gap between environmental science, mineral exploration, and planetary processes, offering a unified framework to interpret how Earth's surface and interior systems interact through time. Understanding, and modeling, are the ultimate tools for an accurate interpretation.

Motivation for this workshop

Environmental legislation often provides a simplified approach to the analysis of natural materials (water, soils, sediments and rocks), which does not take into account the complexity of the geochemical processes that govern their chemical composition. When laboratory- acquired elemental concentrations of soils or natural waters are simply compared with legal threshold values, the information that is used tends to create more issues than solutions. Additionally, legal exclusions of certain elements from analytical protocols limit the scope of understanding, making it difficult to fully characterize the processes that control the chemical evolution of natural fluids and the distribution of elements at the Earth's surface. In the study of natural waters, in particular, the absence of labile in situ parameters like redox state, alkalinity, and sometimes pH in analytical reports prevents a proper evaluation of the balance or imbalance of aqueous solutions, thus hindering the understanding and prediction of their potential evolutionary pathways. As a consequence, the available compositional data are frequently used to generate classification diagrams that show correlation trends, but do not reveal the complex interactions between aqueous solutions, mineral phases and gases at the origin of the examined compositions. Overcoming these limitations is crucial to advance the study of geochemistry of aqueous solutions, both technically and in regulatory terms and, thus, to understand and predict the fate and distribution of elements in both natural and anthropized environments.

Geochemical Modelling Applied to Natural Fluid-Rock systems

Aims and Scope

The course aims to address these issues by answering the following questions:

- Can we expand the data provided by analytical sets to move from classification schemes to predictive modeling?
- Is it possible to create alternative numerical models to describe conceptual models and test different scenarios in the testing phase?
- How can we derive fundamental thermodynamic parameters that describe the behavior of certain elements within a given system?
- Can we design laboratory experiments and simulate their results to optimize boundary conditions and calibrate our models to obtain more accurate results?
- Can we establish a universal theoretical framework to explain trends observed in laboratory experiments and in natural systems?

Why PHREEQC?

The course bridges theory and fieldwork through computational methods, focusing on geochemical modeling. It introduces participants to **PHREEQC-based open-source geochemical modelling codes** such as **PhreePlot**, **PHAST**, **PhreeqcRM** and **PhreeSQL** showing their capabilities through coding examples. PHREEQC is one of the most popular software packages for simulating a wide range of processes using a variety of modelling forms. It allows the users to examine a number of topics using the modelling approach as the main investigation technique or as supporting tool in the interpretation of data and processes.

The Course

The course will at first provide the **thermodynamic principles and theoretical framework** that are at the base of geochemical codes and are necessary for their correct use. The instructors will cover **aqueous solution speciation**, the **numerical methods** used to solve gas-water-rock equilibrium systems, and the role of **thermodynamic databases** in understanding the data and affecting the model results. Participants will learn how to **process large datasets** (including thousands of data points) and **present results through graphs** derived from speciation and solubility calculations. They will also learn the importance of time (through **kinetic modeling**) and temperature on geochemical reactions. The final part of the course will focus on **inverse models**, enhancing participants' skills in **transport and reactivity modeling**.

The Program

DB – Prof. Donato Belmonte; **GM** – Dr. Giordano Montegrossi; **GS** – Prof. Giuseppe Saldi; **MZ** – Prof. Marino Vetuschi Zuccolini

Monday February 9 – Room 3, via G. Capponi 9

14:00 – 15:00	Geochemical thermodynamics and modelling of a fluid-rock system : basic principles and applications	DB
15:00 – 16:00	The solid phase - Thermodynamic properties, equation of state and mixing models of mineral phases (with practical exercises)	DB
16:00 – 16:30	Coffee break	
16:30 – 17:30	The aqueous phase: thermodynamic properties, aqueous speciation, activity models	GM
17:30 – 18:30	Equation of state and gas/water interaction	GM

Tuesday February 10 – Room 3, via G. Capponi 9

08:00 – 10:30	Phase equilibrium calculations in simple and complex systems - 1) Use and misuse of thermodynamic databases, 2) Gibbs free energy minimization, 3) Practicals and hands-on tutorial	DB
10:30 – 11:00	Coffee break	
11:00 – 13:00	Redox state, Pressure and Temperature effects in different geological context	GM
13:00 – 14:00	Lunch break	
14:00 – 16:00	Introduction to PHREEQC-based codes: from field to computer, PHREEQC features, implementations and programming rules	MZ
16:00 – 16:30	Coffee break	
16:30 – 18:30	Examples: reproducing diagrams from literature, tips & tricks, odd results, useful approach	MZ

The Program

DB – Prof. Donato Belmonte; **GM** – Dr. Giordano Montegrossi; **GS** – Prof. Giuseppe Saldi; **MZ** – Prof. Marino Vetuschi Zuccolini

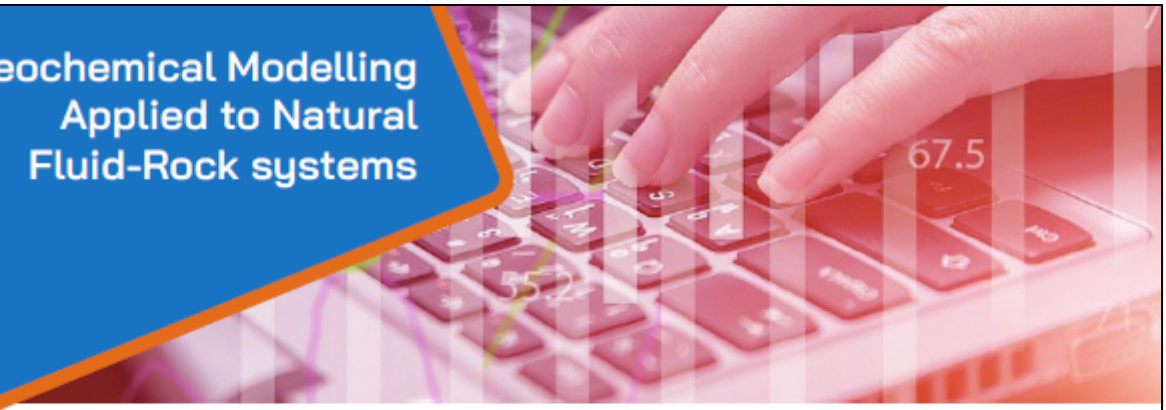
Wednesday February 11 – Room A, via G. La Pira 4

08:00 – 10:00	Introduction to kinetic including with stable isotopes	GM
10:00 – 10:30	Coffee break	
10:30 – 12:30	Examples – PHREEQC, Phreeplot: toward complex diagrams	MZ
12:30 – 14:00	Lunch break	
14:00 – 16:00	Examples - PHREEQC, PHAST: transport and reaction	MZ
16:00 – 16:30	Coffee break	
16:30 – 18:30	Examples - iPHREEQC and PhreeSQL: parallel computation on big data and post-processing	MZ

Thursday February 12 – Room 14, via G. Capponi 9

08:00 – 10:30	Experiment-computation integration, illustrated with examples of kinetic reaction models using PHREEQC	GS
10:30 – 11:00	Coffee break	
11:00 – 12:30	Experiment-computation integration, illustrated with examples of kinetic reaction models using PHREEQC	GS
12:30 – 13:30	Discussion and Closing Remarks	

Geochemical Modelling Applied to Natural Fluid-Rock systems



Where?

The course will be held in the historic center of Florence at the University of Florence:

- 9, 10 and 12 February 2026: via G. Capponi 9
- 11 February 2026: via G. La Pira 4

Organizing Committee

Donato Belmonte
Giordano Montegrossi
Giuseppe Saldi
Orlando Vaselli
Stefania Venturi
Marino Vetuschi Zuccolini

Registration fee

The school is reserved to **2026 SoGel members.** (http://www.societageochimica.it/iscriviti)

The **registration fee** is **50 €**. Travel, accommodation and meals are charged by students.

The maximum number of students is 30.

To register and for more information, send an e-mail to **segreteria@societageochimica.it**

Members' Activities

Vulcano Summer School 2026

Sampling Techniques in Extreme Environments

June 15-19, 2026 – Vulcano Island, Aeolian Archipelago (Italy)

Rebecca Biagi and Antonio Randazzo

Standing on the rim of an active crater, watching volcanic gases gigantically rise from the ground while instruments record weird numbers in real-time. Sampling high-temperature waters, fumaroles, and gases, observing the incredible colors that extreme microbial communities paint. This picture is an experience that no textbook can replace.

Fieldwork in active volcanic systems remains one of the most powerful ways to understand Earth processes, and the ***Vulcano Summer School 2026 - Sampling Techniques in Extreme Environments*** offers exactly this opportunity. For one intensive week (**15-19 June 2026**) on **Vulcano Island** (Italy), participants will have the chance to work directly in a natural laboratory where high-temperature fumaroles, diffuse soil degassing, hydrothermal waters, submarine vents and bizarre microorganisms coexist in a napkin. Here, measurements are not just demonstrations, but participants can collect data by using their hands through the same approaches adopted in extreme environmental research and volcanic monitoring worldwide!

Participants will gain experience in sampling water and hydrothermal/volcanic gases, air quality and hazards, volcano monitoring, and will enter the hidden world of microbiology. The Summer School will allow the participants to feel the strength of an active volcano, dive into the warm seawater to observe the bubbles rising from the bottom, and then rest on an authentic black beach after a day of hard work!

The shared passion in extreme environments, combined with close interaction in the field, creates an atmosphere that encourages collaboration, exchange of ideas, and lasting professional connections. The appeal of this experience has been reflected in recent editions of the school, which have drawn up a large and eclectic group of students and early-career researchers from many countries and scientific backgrounds.

The 2026 edition continues along this path, inviting a new cohort of participants to learn, measure, and interpret processes in extreme environments directly where they occur, transforming Vulcano Island into a classroom without walls, where science is experienced first-hand!

Who can apply

The School is open to **bachelor's, master's, and PhD students, as well as postdoc, early-career researchers and stakeholders**, and anyone with a background or strong interest in Earth and extreme environmental sciences. The working language is **English**, and applications are welcome from all countries. Motivation to work in the field and interest in extreme environments are essential features!

Dates, Venue, and Logistics

The Vulcano Summer School 2026 will take place from **15 to 19 June 2026** on **Vulcano Island**, Aeolian Archipelago (Italy). The island can be reached by ferry or hydrofoil from mainland Italy (Naples) and Sicily (Palermo and Milazzo); detailed travel information is available on the official website.

There is **no registration fee**. Travel, accommodation, and meals are at the participants' own expense. A limited number of shared rooms are available at an affiliated facility on Vulcano Island at a reduced cost of **€25 per night**, assigned on a first-come, first-served basis. Participants opting for independent accommodation must provide proof of booking on the island by **30 March 2026**.

Registration

Pre-registration through the official online form is mandatory. Please note that pre-registration **does not automatically guarantee participation**, as the final acceptance requires proof of accommodation booking.

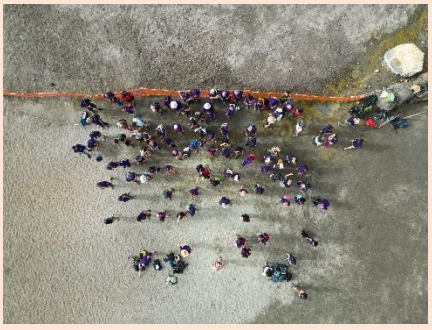
Grants and support

To promote international participation, IAVCEI grants may be available for eligible applicants (2026 IAVCEI-CCVG members). Details regarding eligibility and application procedures are provided on the Summer School website.

Further information

Updates, detailed information, the pre-registration form, and the travel grant application form are available at: https://sites.google.com/view/vulcanosummerschool2026

For inquiries: vulcanosummerschool@gmail.com



INTERNATIONAL

VULCANO SUMMER SCHOOL 2026

SAMPLING TECHNIQUES IN EXTREME ENVIRONMENTS

VULCANO ISLAND (ITALY)

JUNE 15-19, 2026

- Who can join: Bachelor, Master, PhD students and PostDocs
- Multidisciplinary training with experts in geochemistry, microbiology, volcanology & more
- No registration fee: travel, accommodation* & meals are charged by students

*A limited number of places in an affiliated facility will be available upon request, on a first-come, first-served basis.

Patronised by:

Sign Up!

vulcanosummerschool@gmail.com

The Vulcano Summer School on ***Sampling Techniques in extreme Environments*** is a unique opportunity to engage in hands-on learning experiences, handling the science of geochemistry of fluids applied in hydrothermal and volcanic systems with experts coming from around the world. Vulcano Island provides a unique setting for studying the dynamic interactions between volcanic and hydrothermal processes, fluids, and microorganisms.

You will get experience in sampling waters and gases, monitoring air quality and hazards, and will enter the hidden world of microbiology characterising extreme environments. You will feel the strength of an active volcano, dive into the warm seawater to look at the bubbles coming from the bottom, and then chill on an authentic black beach after hard work.

The school aims to bring together students and scientists from different backgrounds to develop a holistic and multidisciplinary approach to the (bio)geochemical exploration of volcanic and hydrothermal systems.

Vulcano Summer School 2026 can be your chance to shape, or even switch, your academic and research skills in the investigation of fluids in volcanic and hydrothermal systems!

Funding for travel is available for IAVCEI members.

For further information, get in touch with the Organizing Committee at vulcanosummerschool@gmail.com

IAVCEI

HURRY UP!

DON'T MISS THE CHANCE TO EXPLORE THE MYSTERIOUS, POWERFUL, AND MAGICAL WORLD OF VOLCANOES

Patronised by:

CCVG

DiSTeM
Dipartimento di Scienze della Terra e del Mare

UNIVERSITÀ DEGLI STUDI FIRENZE
DST
Da un secolo, oltre.

Sign Up!

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3° CONGRESSO SOCIETÀ GEOCHIMICA ITALIANA

GEOCHEMISTRY ACROSS TIME AND SPACE

RAVENNA – 30 GIUGNO - 3 LUGLIO 2026

Nicolas Greggio and Enrico Dinelli

Six months ahead of the event, the Italian Geochemical Society (SOGEI) is pleased to present the 3rd SOGEI Congress, entitled "*Geochemistry Across Time and Space*", which will take place in Ravenna (Italy) from 30 June to 3 July 2026. The congress will be hosted at the Palazzo dei Congressi, located in the heart of Ravenna's historic center, within walking distance of the city's UNESCO World Heritage monuments and easily accessible by train and car.

The 3rd SOGEI Congress aims to provide a vibrant forum for discussion and exchange among the Italian and international geochemical communities, fostering dialogue across disciplines, scales, and methodological approaches. With an expected attendance of approximately 130–140 participants per day, the congress will feature a rich scientific program combining plenary and keynote lectures by internationally recognized scientists, oral and poster presentations, and ample opportunities for networking and informal discussion.

The scientific program is articulated around four main thematic sessions that reflect both the diversity and the strong integrative nature of modern geochemistry, spanning from theoretical and experimental approaches to applied studies addressing environmental, volcanic, and societal challenges.

Experimental and Computational Geochemistry will focus on the complementary role of laboratory experiments and advanced computational modelling in quantifying the physicochemical parameters that govern geochemical processes and the evolution of natural systems. The session will bring together experimental, theoretical, and modelling approaches applied to a broad range of topics, including thermodynamics of solids and aqueous species, isotopic fractionation, chemical weathering processes, crystal nucleation and growth, and reactive transport modelling. Emphasis will be placed on the integration of experimental observations and computational methods, with contributions from young and early-career researchers especially encouraged.

Conveners: Giuseppe Saldi (University of Perugia), Donato Belmonte (University of Genoa), Barbara Cantucci (INGV, Rome).

Plenary Speaker: Pascale Bénézeth (University of Toulouse, France).

Keynote Speaker: to be confirmed.

The session *Isotope Analysis: Recent Advances and Emerging Applications* will highlight the central role of isotopic tools in geochemical research, with particular emphasis on recent methodological innovations. Topics will include compound-specific isotope analysis, clumped and multi-isotope approaches, non-conventional isotopes, and their applications in tracing sources, processes, and interactions in both natural and anthropogenic systems. The session will bring together analytical developments and field-based applications across the Earth sciences.

Conveners: Massimo Marchesi (Sapienza University of Rome), Eleonora Regattieri (CNR-IGG), Fausto Grassa (INGV).

Plenary Speaker: Thomas Röckmann (Utrecht University).

Keynote Speaker: Mary Anne Tafuri (Sapienza University of Rome).

Biogeochemical Cycles and Anthropogenic Activities: The View of Environmental Geochemistry will address the complex interactions between natural geochemical cycles and human activities. Contributions will explore the behaviour, mobility, and bioavailability of chemical elements in soils, sediments, waters, and the atmosphere, with a particular focus on pollution, ecosystem resilience, and environmental management strategies. By integrating experimental studies, field observations, and modelling approaches, this session aims to promote a holistic perspective on environmental change and sustainability.

Conveners: Daniela Varrica (University of Palermo), Federico Floreani (University of Trieste), Antonio Randazzo (INGV).

Plenary Speaker: Riikka Rinnan (University of Copenhagen).

Keynote Speaker: Sergio Balzano (Stazione Zoologica Anton Dohrn).

The session *Geochemistry of Magmatic–Hydrothermal Systems: Multidisciplinary Approaches for Volcanic Monitoring and the Exploration of Geothermal Energy and Earth Resources* will focus on high-temperature geochemical processes operating in volcanic and geothermal environments. Topics will include magmatic degassing, fluid–rock interaction, geochemical monitoring of active systems, and applications to geothermal energy and mineral resource exploration. The session will emphasize multidisciplinary approaches combining geochemistry, petrology, geophysics, and remote sensing.

Conveners: Matteo Lelli (CNR-IGG), Rebecca Biagi (University of Florence), Giulio Bini (INGV).

Plenary Speaker: Bernard Sanjuan (BRGM, France).

Keynote Speaker: Giancarlo Tamburello (INGV, Bologna).

Beyond the scientific program, the congress will offer several social and networking events designed to encourage informal interaction among participants and to highlight the unique cultural heritage of Ravenna. The opening day will conclude with an Ice Breaking Event hosted at the MAR – Museo d'Arte della Città di Ravenna, which is complimentary and offered by the Congress. A guided visit to Ravenna's iconic UNESCO mosaic monuments will allow participants to discover the city's artistic heritage; this optional activity requires prior registration and a participation fee. The Social Dinner, held at the historic venue of the "Mercato Coperto", recently restored and brought back to its former splendor, will be a further opportunity for networking and will be organized as an optional event, paid by participants.

The congress is organized by University of Bologna – Department of Biological, Geological and Environmental Sciences (BiGeA) and the Italian Geochemical Society (SOGEI) in collaboration with the, the National Research Council (CNR), and the National Institute of Geophysics and Volcanology (INGV), with the support of the Campus of Ravenna – CIRSA, CIFLA–Fondazione Flaminia, the Municipality of Ravenna, Encotech, Pollution, and Thermo Fisher Scientific.

The Scientific Committee includes: Carmine Apollaro, Luigi Dallai, Enrico Dinelli, Valerio Funari, Nicolas Greggio, Paola Iacumin, Giordano Montegrossi, Elena Pavoni, Monia Procesi, Franco Tassi, and Simone Toller.

The Organizing Committee is composed of: Francesco Capecchiacci, Enrico Dinelli, Valerio Funari, Nicolas Greggio, Antonio Randazzo, Simone Toller, Orlando Vaselli, Stefania Venturi, and Marino Vetuschi Zuccolini.

The SOGEI community warmly invites researchers, early-career scientists, and professionals to join us in Ravenna for four days of scientific exchange, discussion, and collaboration at the forefront of geochemical research.

Mercury: From a Sought-After Resource to a Banned Element

Federica Meloni

On 7–8 September 2025, the workshop "*Mercury: From a Sought-After Resource to a Banned Element*" was held between the municipalities of Piancastagnaio and Abbadia San Salvatore (Siena, Italy), within the historical mining district of Mount Amiata. The event brought together researchers, professionals, and institutional representatives to address the environmental, geochemical, and historical implications of mercury, an element that has played a central role in industrial development while posing long-term environmental and health challenges.

The workshop was organized by members of the Italian Society of Geochemistry (SOGEI), namely Orlando Vaselli, Elena Pavoni, Stefano Covelli, and Federica Meloni, in collaboration with universities and the Parco Nazionale delle Miniere dell'Amiata (Daniele Rappuoli). It attracted an international audience and encouraged active dialogue among academics, public authorities, environmental agencies, and independent professionals, fostering a multidisciplinary and inclusive exchange of perspectives.

The first day, held on 7 September 2025 at the former Siele mining complex, was conceived with a predominantly outreach-oriented approach, aimed at contextualizing mercury mining within the broader framework of territorial history and landscape transformation. After institutional greetings, the day opened with a presentation on the inventory of mercury deposits within the National Park, offering an updated overview of geological and mining knowledge in the area and highlighting the importance of systematic mapping for planning and conservation. Attention then turned to the history of mining companies on Mount Amiata, analyzed as drivers of economic development but also as agents of profound social and landscape changes. The discussions clearly showed how mercury extraction shaped not only the local economy but also community identity and territorial organization.

Particularly well received were the contributions focusing on the historical productive landscape of Mount Amiata and the survey of mining archaeological heritage, which emphasized the cultural value of mining structures, facilities, and infrastructures. In this perspective, mines were presented not merely as sites of resource exploitation but as material testimonies of technical knowledge and collective memory worthy of preservation and reinterpretation.

The first day concluded with a guided visit to the former Siele mining site, one of the most representative locations of mercury mining history on Mount Amiata.

On 8 September 2025 we moved at the Mine Museum of Abbadia San Salvatore where the mayor (Niccolò Volpini) and Daniele Rappuoli greeted the participants. The second day of this meeting represented the scientific core of the workshop and focused on the environmental behavior of mercury, its cycling among environmental compartments, and its long-term impacts on ecosystems.

The scientific sessions opened with an overview of the geochemistry of mercury and its natural and anthropogenic emission sources, presented by J. Cabassi (CNR-IGG, Florence), who emphasized the high mobility and complex chemical behavior of mercury. The persistence of emissions from historical mining areas was highlighted as a key issue in understanding present-day contamination patterns.

P. Higueras (Universidad de Castilla La Mancha y Almaden) addressed the topic of gaseous mercury in mining-impacted areas, discussing emission mechanisms, atmospheric transport, and the role of soil and climatic factors in regulating mercury fluxes.

Siele mining site

Environmental challenges associated with mercury contamination in mining districts were further explored by V. Rimondi (UNIFI), who focused on the spatial heterogeneity and long-term persistence of contamination.

An innovative methodological perspective was provided by P. Costagliola (UNIFI), who illustrated the use of mercury isotopes as tracers of biogeochemical processes, demonstrating their potential to distinguish between sources and transformation pathways. Key processes controlling mercury exchange at the water–air and soil–air interfaces were discussed by F. Floreani (UNITS), while F. Meloni (UNIFI) examined the speciation of mercury in soils, underlining its importance for mobility, bioavailability, and environmental risk assessment.

Daniele Rappuoli and the mayor of Abbadia San Salvatore Niccolò Volpini.

Several case studies offered a comparative and integrated view of mercury contamination. P. Garofalo (UNIBO) presented the mercury ore deposits of southern Tuscany, framing the Mount Amiata district within its regional geological setting. P. Higueras then introduced the case of Almadén, widely regarded as the world's most important historical mercury mining district, providing a valuable international comparison.

The focus subsequently shifted to aquatic and coastal environments. S. Covelli (UNITS) discussed mercury in the coastal sediments of the northern Adriatic Sea, from the Gulf of Trieste to the Marano and Grado Lagoon, while E. Pavoni (UNITS) examined mercury remobilization and transformation processes in sediments, along with potential mitigation strategies. The ecological implications of mercury contamination were further explored by A. Acquavita (ARPAFV), who presented evidence of mercury transfer along the trophic chain in northern Adriatic coastal ecosystems.

A distinctive feature of the workshop was the active participation of public environmental authorities, including ARPA and ISPRA, which presented ongoing monitoring activities and regulatory perspectives. These contributions stimulated a constructive dialogue with academic researchers, technical experts, and independent professionals, highlighting the importance of cooperation between science and public administration in addressing mercury-related environmental challenges.

The event showed how scientific knowledge, when shared across disciplines and institutions, can contribute decisively to understanding and managing the complex environmental legacy of historical mercury mining.

So.Ge.I. on Social Media

Jacopo Cabassi and Lorenzo Chemeri

We are currently present on four social media platforms: Instagram, Facebook, LinkedIn and Twitter. Our contents are mainly focused on research activities, such as sampling campaigns and on-going projects, carried out by our members and on the attendance of national and international conferences to promote the results obtained and their dissemination. Our target is to share at least one post per week depending on content availability. Therefore, any member is free to contact us to share their ongoing activities and current research on our channels. On Instagram, the So.Ge.I. page (@societageochimica_it) has overcome the milestone of 600 followers, we currently have 610 followers, recording a 10% increase since the last report on August 2025. The average likes for post is ca. 60 and although we recorded a slight decrease in the engagement factor, it is still higher if compared to other pages sharing similar contents. In the last trimester, our Instagram page reached 1.500 accounts with more than 12.000 views to our posts and our profile was visited ~1.000 times. Regarding Facebook, the statistics are unchanged with respect to the last report with 1.135 followers and the same number of views during the last trimester. Instagram confirms its position as our social network with the younger audience with ~65% of the users below 35 years old while Facebook is mainly reaching users above 35 years old (>70%). On X (former Twitter), our page (@SocietaGe) has 88 followers showing a slight increase compared to our last report in August and an average view for post ~45. The greatest improvement is recorded by LinkedIn, the Italian Society of Geochemistry page overcome 1.000 followers (+81 vs. August 2025) while the number of interactions remains stable. As already observed in the August report, So.Ge.I. social media continues to grow in terms of followers and audience reached, albeit more slowly than in the previous year.

The growth of our socials strongly depends on the posts provided by our members. The higher the number of posts the higher the number of followers. Thus, you are strongly encouraged to send your contributions to Lorenzo.chemeri@unif or jacopo.cabassi@igg.cnr.it or orlando.vaselli@unifi.ti

Follow So.Ge.I. on Social Media

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Events and Opportunities

Special Issues

- *Biogeochemical Frontiers in Transitional Environments: Where Land Meets Sea*

  Journal of Geochemical Exploration (IF 3.3)

  Website

  Deadline for manuscript submissions: **31 January 2026**

- *Geochemical Processes and PTEs Distribution in Mine Waters*

  Hydrology (IF 3.2)

  Website

  Deadline for manuscript submissions: **31 August 2026**

hydrology

Schools and Thematic Days

Conferences And Congresses

- Follow updates on So.Ge.I. website

  www.societageochimica.it

Memorial keepsakes

Dr. Barbara Nisi

Orlando Vaselli

Barbara Nisi had her PhD degree in Earth Sciences at the Department of Earth Sciences (University of Florence) in 2005. Since 2013, she has been a researcher at the Institute of Geosciences and Earth Resources (IGG-CNR) in Pisa. In 2016, she was appointed as Adjunct Professor at the Department of Pure and Applied Sciences (DiSPeA) at the University of Urbino Carlo Bo. Since 2005, she gave seminars and laboratory classes in Environmental Geochemistry, Applied Geochemistry, and Geochemistry at the Department of Earth Sciences (University of Florence). From 2000 to 2013, she had various scholarships, research grants, and post-doctoral fellowships from the University of Florence and CNR-IGG. Her studies mostly focused on fluid geochemistry (water and gas), as follows: 1. geochemical investigations of volcanic and geothermal fluids; 2. monitoring protocols for selected pilot basins for CO2 storage; 3. CO2 risk assessment and determination of CO2 fluxes for calculating output from both natural and man-made systems; 4. water geochemistry and monitoring protocols for the delineation of water resource protection zones; 5. environmental geochemistry applied to municipal landfill sites and decommissioned mines; 6. statistical processing of geochemical data and geochemical mapping. She actively collaborated on numerous scientific projects of both national and international interest, such as: Ciudad de la Energia (Ponferrada, Spain); CIEMAT (Spain); MIUR PRIN; Integrated Italy-Spain Project; INGV; United Nations Office for the Coordination of Humanitarian Affairs (OCHA). From 2015 to 2016, she was responsible for the CNR/ASM – MOLDOVA Bilateral Project. Since 2019, she had been CNR-IGG Principal Investigator in the framework of the European Interreg Italy-Croatia project ASTERIS (Adaptation to Saltwater Intrusion in sEa-level Rise Scenarios). Since 2020, she had been member of the Scientific Committee of the Italian Society of Geochemistry. In September 2024, she became senior researcher at the CNR-IGG.

I do wish to remember Barbara with this photo where she expresses her joy of life which was prematurely torn away by an incurable tumor.

Members' Publications

List of Members' Publications

referred to the period September 3, 2025 – January 13, 2026

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