INSTITUTE OF GEOSCIENCES

PUBLIC NOTICE ATAC No. 15/2025, dated 07/02/2025

CALL FOR APPLICATIONS FOR THE PUBLIC COMPETITION OF TITLES AND EXAMINATIONS AIMING TO FILL 01 (ONE) POSITION OF DOCTORAL PROFESSOR IN THE DEPARTMENT OF MINERALOGY AND GEOTECTONICS OF THE INSTITUTE OF GEOSCIENCES OF THE UNIVERSITY OF SÃO PAULO

The Director of the Institute of Geosciences of the University of São Paulo hereby announces to all interested parties that, pursuant to the decision *ad referendum* of the Congregation on 06/13/2025, applications will be open for a period of 90 (ninety) days, starting at 08:00 a.m. (Brasília time) on 07/04/2025 and ending at 05:00 p.m. (Brasília time) on 10/01/2025, for the public competition of titles and examinations to fill 01 (one) position of Professor Doctor, reference MS-3, under the Full-Time Dedication to Teaching and Research Regime (RDIDP), vacancy/position no. 1263480, with a salary of BRL 16,353.01 (May/2025), in the Department of Mineralogy and Geotectonics, in the field of knowledge: **Elemental Geochemistry and Non-Traditional Isotopes**, in accordance with Article 125, paragraph 1 of the USP General Regulations, and the corresponding syllabus below:

GMG0404 – Applied Isotopic Geology: 1. Radioactivity and Geochronology. Isotopic Measurements and Mass Spectrometry; 2. K-Ar and ^{40}Ar-^{39}Ar Methods – Age Calculation; 3. Rb-Sr System – Age Calculation – Construction of Isochron Diagrams – Sr Isotopes in Petrogenesis; 4. Sm-Nd Method – Age Calculation (isochron and model) – Nd Isotopes in Petrogenesis; 5. U-Pb Method – Applications, Geological Interpretations and Concordia Diagram Construction; 6. Pb-Pb Method – Age Calculation (isochron and model) – Applications and Geological Interpretations; 7. Isotopic Geology applied to Metallogenesis; 8. Isotopic Geochemistry applied to Paleoclimatology; 9. Isotopic Geochemistry applied to the Environment; 10. Isotopic Geochemistry applied to Chemostratigraphy.

GMG5834 – Radiogenic Isotopes Applied to Metallogenesis and Mineral Exploration: 1. Introduction: Applications of Geochronology and Isotopic Geochemistry in the course theme, basic principles of radioactivity, basic concepts of isotopic analysis; 2. K-Ar and Ar-Ar Systems: Basic fundamentals of the methods, geological interpretations, and applications in geochronology of mineralizations; 3. Rb-Sr System: Theoretical fundamentals and applications in geochronology, behavior of Sr isotopes in magma/fluid mixtures, and uses in conceptual and descriptive models of mineral deposits and as mineral exploration indicators; 4. Sm-Nd System: Theoretical fundamentals and applications in geochronology, use of Nd isotopes in conceptual and descriptive models of mineral deposits and in tectonic evolution models associated with metallogenesis; 5. Re-Os System: Theoretical fundamentals and applications in geochronology, use of Os isotopes in conceptual and descriptive models of mineral deposits; 6. U-Th-Pb

System: Characteristics of the isotopic system, theoretical fundamentals, and geological interpretations of U-Pb and Pb-Pb geochronological methods. U-Pb microanalyses and geological interpretations based on mineral imaging and types of U-Pb ages; 7. Pb Isotopes: Concepts of Pb isotopic evolution, use of Pb isotopes in conceptual and descriptive models of mineral deposits and as criteria for mineral exploration; 8. Techniques for developing integrated analytical programs for mineral exploration: Cost/benefit analysis; 9. Sampling techniques for mineral deposits and associated rocks: Sample collection from outcrops and drill cores.

The competition will be governed by constitutional principles, notably that of impersonality, as well as by the provisions of the Statute and General Regulations of the University of São Paulo and the Regulations of the Institute of Geosciences of the University of São Paulo.

1. **Applications must be submitted exclusively through the link https://uspdigital.usp.br/gr/admissao during the period specified above. Applicants must complete the required personal information and attach the following documents:**

   I – Detailed curriculum vitae (memorial) and supporting documentation of published works, relevant professional activities related to the competition, and other information enabling evaluation of the applicant's merits, in digital format;

   II – Proof of holding a Doctorate degree granted by USP, recognized by USP, or valid nationally;

   III – Proof of compliance with military service obligations (for male candidates);

   IV – Proof of electoral compliance or a circumstantial certificate issued by the Electoral Court dated within 30 days prior to the beginning of the application period;

   V – Official identification document;

   VI – Research Project, as specified in item 9 of this notice.

   §1º – Supporting materials referred to in item I, such as models, works of art, or other materials that cannot be digitized, must be delivered by the last business day preceding the start of the competition.

   §2º – Dropbox, Google Drive, or any other links redirecting to pages that can be altered by the applicant will not be accepted as valid proof of items listed in the memorial.

   §3º – For the purposes of item II, defense minutes that do not include information regarding the formal approval of the doctoral degree will not be accepted, in cases where such approval is required by the granting institution. The applicant is hereby informed that failure to provide this proof will result in the rejection of the application.

§4º – Professors currently employed by USP will be exempt from the requirements set forth in items III and IV, provided that they presented the relevant documentation upon their initial hiring.

§5º – Foreign candidates will be exempt from the requirements of items III and IV, but must prove they are legally residing in Brazil.

§6º – A foreign candidate who is approved and selected for the position may only take office upon presentation of a temporary or permanent visa authorizing paid employment in Brazil.

§7º – At the time of application, candidates with disabilities must submit a request specifying any necessary accommodations for the examination process.

§8º – It is the sole responsibility of the applicant to upload each document to the correct field in the system available at https://uspdigital.usp.br/gr/admissao, and uploading documents in any order other than that specified by the system will result in disqualification

§9º – It is the candidate's full responsibility to submit their documents in their entirety (front and back) and in a legible file, and the candidate is already aware that if they do not remedy any irregularities *in uploading* incomplete or illegible documents during the registration period, their registration will be rejected.

§10º – Late submission of documents by the applicant will not be accepted, even under appeal.

§11º – When applying, candidates who self-identify as Black, Brown, or Indigenous may express their interest in receiving the affirmative action bonus, as outlined in item 12 and its paragraphs.

§12º – To be eligible for the affirmative action bonus for self-declared Black and Brown candidates, the individual must present phenotypic traits consistent with being Black or Brown.

§13º – The self-declaration of race by candidates who opt to participate in the affirmative action scoring will be subject to confirmation through a hetero-identification panel.

§14º – If the racial self-declaration is not confirmed, the candidate will be disqualified from the competition and, if already appointed, will be subject to annulment of the appointment after due administrative process, ensuring the right to a full defense and appeal, without prejudice to other applicable sanctions.

§15º – For the confirmation of Indigenous self-identification, the applicant must submit, at the time of application, either their own *RANI* (Administrative Registry of Indigenous Birth) or that of one of their parents, if theirs is unavailable.

§16º – Exceptional cases may be reviewed by the Inclusion and Belonging Council, which may accept confirmation of Indigenous self-identification through a combination of a memorial and a signed statement of ethnic belonging issued by community leaders (caciques, *tuxauas*, Indigenous community leaders, associations and/or representative organizations), under penalty of law.

§17º – Current rules for the presentation and confirmation of racial self-identification documentation (Black, Brown, or Indigenous) are available on the USP General Secretariat website (https://secretaria.webhostusp.sti.usp.br/?p=12343).

§18º – For the purposes of item III, the documents listed in Article 209 of Federal Decree No. 57.654/1966 will be accepted. Male candidates who turned 45 by December 31 of the year prior to the start of the application period are exempt.

§19º – At the time of application, candidates may express their intention to take the exams in English, in accordance with Article 39 and its sole paragraph of the Institute of Geosciences Regulations. The exam content will be identical in both Portuguese and English.

2. Applications will be reviewed by the Congregation of the Institute of Geosciences of the University of São Paulo for formal compliance, and the decision will be published in a public notice.

Sole Paragraph – The competition must be held within thirty to one hundred and twenty days from the date of publication of the approved applications in the Official Gazette of the State, pursuant to Article 134, sole paragraph, of the USP General Regulations.

3. The competition will be conducted using objective criteria, in two phases, with the following weighted scores:

Phase 1 (eliminatory): Written examination – weight 1 (one)

Phase 2: I) Evaluation of the memorial with public oral defense – weight 4 (four)

II) Teaching examination – weight 3 (three)

III) Presentation and defense of the research project – weight 2 (two)

§1º – The call for applicants to take the exams will be published in the Official Gazette of the State.

§2º – The following will be disqualified from the competition, without prejudice to applicable legal sanctions, at any point in the process:

a) Any candidate arriving after the scheduled time for the beginning of any phase of the competition, including the topic draw;

b) Any candidate exhibiting inappropriate behavior or disrupting the examination environment, including verbal outbursts or any conduct compromising the integrity and order of the event;

c) Any candidate carrying a firearm at the examination site, even with legal authorization, except in cases explicitly authorized by law and the examining committee.

§3º – In evaluating the exams, the examining committee will consider the purpose stated for the creation of the position (faculty vacancy authorization), as outlined in the annex to this public notice.

4. The written examination, which will cover general and doctrinal topics, shall be conducted in accordance with Article 139 and its sole paragraph of the USP General Regulations.

I – The examining committee shall prepare a list of ten topics, based on the competition syllabus, and shall disclose it to the candidates 24 (twenty-four) hours before the topic draw. During this period, the committee may require candidates to undertake other activities;

II – Immediately after reviewing the list of topics, the candidate may request the substitution of any topic believed to be unrelated to the syllabus. The examining committee shall rule on the validity of the claim without delay;

III – Once the topic has been drawn, the candidate will have a non-extendable period of five hours to complete the examination;

IV – During the first sixty minutes after the draw, consultation of books, journals, and other bibliographic materials will be permitted;

V – Notes taken during the consultation period may be used throughout the examination. These must be made on paper initialed by the committee and will be attached to the final answer;

VI – The examination shall be read aloud by the candidate in a public session and must be reproduced in copies to be distributed to the examining committee at the beginning of the session;

VII – Each examination will be individually assessed by the members of the examining committee;

VIII – Candidates who receive a minimum grade of seven from the majority of the committee members will be considered qualified for the second phase;

IX – The examining committee shall publicly announce the grades received by the candidates in a public session.

5. Upon conclusion of the written examination evaluation, each candidate shall receive from each examiner a final grade, taking into account any applicable affirmative action scoring as described in item 12 of this notice.

6. Only candidates who pass the first phase will proceed to the second phase.

7. The evaluation of the curriculum vitae (memorial), expressed as a global score and including both the oral defense and the content evaluation, must reflect the candidate's merit.

Sole Paragraph – In evaluating the memorial, the committee shall consider:

I – Scientific, literary, philosophical, or artistic production;

II – University-level teaching activities;

III – Community service activities;

IV – Professional or other relevant activities, when applicable;

V – diplomas and other university honors.

8. The teaching examination shall be public, lasting a minimum of forty and a maximum of sixty minutes, and shall cover the syllabus of the specified field of knowledge, under the terms of **Article 137 of the USP General Regulations.**

I – The examining committee, based on the competition syllabus, shall prepare a list of ten topics, which will be presented to the candidates immediately before the topic draw;

II – Immediately after reviewing the topics, the candidate may request the substitution of any topic they believe is not part of the competition syllabus. The examining committee shall promptly decide on the validity of the request;

III – The teaching examination shall be conducted 24 (twenty-four) hours after the topic draw. During this period, the candidate shall have full autonomy over their schedule, and no activities will be required;

IV – The candidate may use any teaching materials they consider necessary;

V – If the number of candidates requires it, they will be divided into groups of no more than three, following the order of registration, for the purposes of topic draw and examination scheduling;

VI – Upon reaching the sixtieth (60th) minute of the examination, the examining committee shall interrupt the candidate;

VII – If the candidate's presentation ends before the fortieth (40th) minute, the committee members shall assign a grade of zero for that examination.

9. In the public examination for the presentation of the research project, the candidate must make a presentation lasting no more than 20 (twenty) minutes, followed by questioning by the committee, which will assess:

I – The project's alignment with the established and/or proposed teaching and research lines, in accordance with the position profile document attached to this notice;

II – Its originality and innovative approach, considering the Department's areas of activity and the prospects for scientific advancement in the Geosciences;

III – Its scientific feasibility and funding prospects.

Sole Paragraph – The questioning period shall not exceed thirty minutes per examiner, and the candidate will have an equal amount of time to respond.

10. Upon completion of the examination evaluations, each candidate shall receive from each examiner a final grade, calculated as the weighted average of the grades awarded in both phases, considering the weights defined in item 3 and any affirmative action scoring applied as per item 12 of this notice.

11. The exam scores shall range from zero to ten, rounded to one decimal place.

12. Affirmative Action Scoring (Differentiated Scoring) will be applied to Black, Brown, and Indigenous candidates, as specified below.

§1º – The formula for calculating the differentiated score to be awarded to Black, Brown, and Indigenous candidates in all phases of the public competition is:

PD = (MCA – MCPPI) / MCPPI

Where:

- PD is the differentiated score to be added to the grades, in each phase of the public competition, for all Black, Brown, or Indigenous candidates who have expressed interest in participating in the affirmative action scoring.

- MCA is the average score of the general competition, calculated from all candidates who received a score (excluding disqualified candidates, i.e., those who did not reach the minimum grade required in items 4 and 13 of this Notice). “General competition” includes all candidates who received a score and who either did not self-declare as Black, Brown, or Indigenous or, if they did, chose not to participate in the differentiated scoring.

- MCPPI is the average score among all Black, Brown, and Indigenous candidates who received a score, excluding disqualified candidates.

§2º – The formula for applying the differentiated score to the final grades of Black, Brown, and Indigenous candidates in each phase of the public competition is:

NFCPPI = (1 + PD) * NSCPPI

Where:

- NFCPPI is the final grade for the phase of the public competition, after the application of the differentiated score. This grade will determine the candidate's ranking in the phase, capped at the maximum score established in the notice. After the phase ends, the final grade is considered the candidate's simple grade.

- NSCPPI is the candidate's simple grade (before the bonus), to which the differentiated score will be applied.

§3º – The calculations referenced in §§1 and 2 of this item must use two decimal places. Fractions greater than or equal to 0.5 (five-tenths) shall be rounded up to the next whole number.

§4º – The differentiated score (PD) provided for in this item shall apply only to eligible candidates, i.e., those who have achieved the minimum performance established in this Notice, based on their simple grade.

§5º – If there are no eligible Black, Brown, or Indigenous candidates among those qualified in a given phase, the differentiated score will not be calculated.

§6º – The differentiated score will not be applied if, in the formula for calculating PD, **MCPPI** (the average score of Black, Brown, and Indigenous candidates) is higher than **MCA** (the average score of the general competition).

13. The results of the competition shall be announced by the examining committee immediately after its conclusion, in a public session.

14. Candidates who receive a final grade of at least seven from the majority of the examiners shall be considered qualified.

15. Each examiner shall indicate their preferred candidates based on the grades they assigned.

16. The candidate receiving the highest number of nominations from the examining committee shall be proposed for appointment.

17. Appointment of the selected candidate is subject to approval in a medical examination conducted by the State Medical Examination Department – DPME, pursuant to Article 47, item VI, of Law No. 10.261/68.

18. The appointment of the selected faculty member and all resulting procedures shall be governed by the provisions of Resolution No. 7271 of 2016.

19. A faculty member under the RDIDP regime must maintain exclusive employment with USP, in accordance with Article 197 of the USP General Regulations.

20. The competition shall take effect immediately, and only the candidate selected for the position being offered shall be proposed for appointment.

21. **The selected candidate will be summoned for appointment via the Official Gazette of the State of São Paulo.**

22. **Additional information, as well as the regulations applicable to the competition, are available to interested parties at the Academic Technical Office (Assistência Técnica Acadêmica) of the Institute of Geosciences of the University of São Paulo, Rua do Lago, 562 – Room 306 – Butantã, São Paulo – SP, e-mail: atacigc@usp.br.**

ANNEX – JUSTIFICATION FOR THE OPENING OF THE FACULTY POSITION

Current Situation of the Department/Area

Recent discussions on the Curricular Reform at the IGc have highlighted the need to modernize undergraduate education, with direct impacts on the development of new scientific approaches. Among the various curricular aspects analyzed, the urgency of revitalizing Geochemistry teaching stands out, currently limited to a single required course. Geochemistry plays a central role in expanding the frontiers of geoscientific knowledge and in understanding the interactions between society and the Earth system, underscoring the need to train professionals increasingly equipped to tackle complex challenges such as climate change, sustainable resource exploration, and environmental management.

The profile of the new faculty member should stand out in **Elemental Geochemistry and Non-Traditional Isotopes**. The professor must be capable of integrating theoretical and practical knowledge to modernize Geochemistry instruction at the undergraduate level, adopting approaches that combine elemental and isotopic patterns in various geological settings through the incorporation of active teaching methodologies. Such practices should promote student engagement and the application of geochemical concepts to real-world problems.

General Objective of Hiring the Faculty Member

Geochemistry is an essential field of the Geosciences, dedicated to studying the Earth's composition and chemical processes, as well as the interactions that occur among its various reservoirs, such as the geosphere, hydrosphere, and atmosphere. Its relevance is even more evident in the contemporary context, particularly for its ability to monitor anthropogenic environmental impacts.

Geochemistry is subdivided into: **Elemental Geochemistry** and **Isotopic Geochemistry**. Elemental Geochemistry focuses on analyzing the chemical elements present in geological materials, aiming to understand their concentrations, distributions, and patterns in the terrestrial

environment. Isotopic Geochemistry, on the other hand, has more specific applications and focuses on studying isotopes of these elements using quantification methods and applications that vary according to the nature of the isotopes involved. It is further subdivided into the study of **radiogenic isotopes**, derived from radioactive decay, and **stable isotopes**, based on physical-chemical fractionation caused by a spectrum of (bio)geological processes.

While traditional stable isotopes such as O, H, and C have been widely used for decades, **non-traditional isotopes**—such as Li, B, Mg, Fe, Cu, Cd, and Zn—have emerged as powerful tools for investigating complex processes occurring at the interfaces between Earth's reservoirs.

The continued advancement of high-resolution analytical techniques and the exploration of new isotopic systems promise to further expand the potential of this field of knowledge.

Individual Plan

Teaching

The faculty member shall teach undergraduate courses (Geochemistry, Environmental Geochemistry, Applied Isotopic Geology) and graduate courses (Advanced Analytical Techniques in Geochemistry, Applications of Mass Spectrometry in Geosciences), whether existing or newly created; update and/or develop syllabus content; advise and supervise students; and develop integrated teaching and research projects.

Research and Innovation

The faculty member is expected to have solid training in the establishment of chemical procedures in clean laboratories and in instrumental techniques, particularly **Inductively Coupled Plasma Mass Spectrometry (ICP-MS)**, due to its prominent role in the precise measurement of non-traditional isotope abundances.

The faculty member must be capable of training undergraduate and graduate students in laboratory practices, offering them direct experience in analytical data acquisition and interpretation. This skill is not only a strategic asset for raising the level of instruction—especially at the graduate level—but also an investment in strengthening the institution's (analytical) reputation and in consolidating partnerships and collaborative projects in scientific research and innovation, including with industrial and productive sectors.

The faculty member shall create and consolidate strategic research lines in **Non-Traditional Isotope Geochemistry** and its applications in environmental monitoring and biogeochemical cycles, mineral exploration, sediment geochemistry, seawater chemical variation over geologic time, and the implementation of (new) analytical methods. The professor will also play a key role in supporting the ongoing operation of institutional laboratory infrastructure.

Culture and Outreach

The professor shall develop (or be engaged in) university extension projects through courses, workshops, exhibitions, community lectures, etc., demonstrating the relevance of geoscientific knowledge as a means of ensuring the sustainable future of the planet Earth and the society that inhabits it.

Expected Impact of the Appointment

Hiring a professor with expertise in such a versatile field is expected to have a multifaceted impact, including:

- Strengthening research by expanding the scope of studies and refining thematic approaches in geology and related fields, as well as by attracting funding and partnerships;
- Training human resources at various levels, with a focus on cutting-edge analytical techniques and methods;
- Establishing and improving specialized laboratories, greatly benefiting the academic community and productive sectors;
- Increasing the institution's visibility in the academic landscape through high-impact publications and partnerships, as well as through the establishment of collaborative networks with researchers and institutions of recognized excellence in the field;
- Applying the knowledge generated in socially relevant projects, contributing to public policies and sustainable solutions grounded in scientific evidence.