

**TENURE-TRACK FACULTY POSITION IN PHYSICS – TWO STAGES
INSTITUTE OF PHYSICS, UNIVERSITY OF SÃO PAULO, BRAZIL**

Notice No. IF-23/2026

OPENING OF APPLICATIONS FOR A PUBLIC COMPETITIVE EXAMINATION OF ACADEMIC RECORDS AND EXAMINATIONS FOR THE APPOINTMENT OF ONE (01) POSITION OF PROFESSOR (PH.D.) AT THE DEPARTMENT OF MATERIALS PHYSICS AND MECHANICS, INSTITUTE OF PHYSICS, UNIVERSITY OF SÃO PAULO

The Director of the Institute of Physics of the University of São Paulo hereby makes public to all interested parties that, pursuant to the decision of the Congregation (Faculty Council) at its ordinary meeting held on February 26, 2026, applications will be open for a period of ninety (90) days, starting at 00:01 a.m. (Brasília time) on March 25, 2026, and ending at 11:59 p.m. (Brasília time) on June 22, 2026, for the public competitive examination for the appointment of one (01) position of Professor (Ph.D.), reference MS-3, under the Full-Time Dedication to Teaching and Research regime (RDIDP), position no. 1263650, with a monthly salary of R\$ 16,353.01 (sixteen thousand three hundred fifty-three Brazilian reais and one cent) (May/2025), at the Department of Materials Physics and Mechanics, in the field of **Theoretical Condensed Matter Physics**, pursuant to Article 125 of the General Regulations of the University of São Paulo, with the following program:

Syllabus

- Crystal Structure and Diffraction: direct lattice, reciprocal lattice, and X-ray diffraction conditions (Bragg's Law and Laue's conditions).
- Thermal properties of solids. Phonon contribution to specific heat and thermal conductivity.
- Conductivity in metals: electrical conductivity, thermal conductivity, Hall effect, and transport models (Drude/Sommerfeld).
- Band Theory and Bloch's Theorem. Periodic potential, nearly free electrons, and tight-binding models.
- Semiconductors: band structure (direct and indirect band gap), doping, and transport properties in junctions.
- Magnetism in the matter: diamagnetism, paramagnetism, ferromagnetism, and antiferromagnetism.
- Superconductivity.
- Interaction of radiation with matter: optical processes, absorption, emission, and spectroscopy in solids.

The examination shall be conducted in accordance with constitutional principles—particularly the principle of impersonality—and in compliance with the Statute and General Regulations of the University of São Paulo, as well as the Regulations of the Institute of Physics.

1. Applications

Applications must be submitted exclusively through the website <https://uspdigital.usp.br/gr/admissao> within the period indicated above. Applicants must complete the required personal information and upload the following documents:

I – a detailed academic memorial (in Portuguese or English), along with supporting documentation of published work, activities relevant to the examination, and other information allowing the evaluation of the candidate's merits, in digital format;

II – proof of holding a Doctoral degree awarded by USP, recognized by USP, or valid nationwide in Brazil;

III – proof of compliance with military service obligations, for Brazilian male candidates;

IV – electoral clearance certificate or equivalent detailed certificate issued by the Brazilian Electoral Court within 30 days prior to the beginning of the application period;

V – official identification document;

VI – an academic project proposal, in Portuguese or English, authored by the candidate, with a maximum length of ten (10) pages, describing the proposed teaching, research, and outreach activities to be developed throughout the candidate's academic career;

VII – a research project, in Portuguese or English, in digital format.

§1 – The academic memorial referred to in item I shall consist of a reflective analysis of the candidate's academic background, personal study experiences, professional activities, research, publications, and other relevant academic and professional information, indicating motivations and significance.

§2 – Supporting materials for the memorial that cannot be digitized (such as models, artworks, or similar items) must be submitted no later than the last business day prior to the start of the examination.

§3 – Links to Dropbox, Google Drive, or any other platform that allows later modification by the candidate will not be accepted as supporting documentation.

§4 – For the purposes of item II, defense minutes lacking formal approval (homologation) will not be accepted where such approval is required by the degree-granting institution. Failure to provide such proof will result in rejection of the application.

§5 – Faculty members currently employed at USP shall be exempt from the requirements set forth in items III and IV, provided that they have already demonstrated compliance therewith at the time of their initial appointment.

§6 – Foreign applicants are exempt from the requirements in items III and IV but must demonstrate that they are in regular legal status in Brazil at the time of the examinations.

§7 – A foreign candidate approved in the examination and nominated for the position may only take office upon presentation of a temporary or permanent visa authorizing remunerated activity in Brazil.

§8 – At the time of application, candidates with or without disabilities may request specific accommodations for the examinations by submitting a medical report issued within the last two (2) years, written in Portuguese or accompanied by a certified translation, clearly indicating the need for such accommodations.

§9 – The candidate shall bear full responsibility for uploading documents to the appropriate fields in the application system. The submission of documents in incorrect fields may result in the rejection of the application, should it compromise the proper assessment of the documentation.

§10 – The candidate shall bear full responsibility for the submission of complete (including front and back, where applicable) and legible documents. Failure to rectify incomplete or illegible submissions within the application period shall result in the rejection.

§11 – Late submission of documents will not be accepted under any circumstances, including at the appeal stage.

§12 – At the time of application, candidates who self-identify as Black, Brown, or Indigenous may indicate their interest in participating in the differentiated scoring system.

§13 – To qualify for the bonus system, self-declared Black or Brown candidates must possess phenotypic characteristics consistent with such classification.

§14 – Self-declarations by Black or Brown candidates will be subject to confirmation by a hetero-identification committee.

§15 – If racial self-identification is not confirmed, the candidate will be eliminated from the examination and, if already appointed, may have their appointment annulled following administrative proceedings ensuring due process.

§16 – For Indigenous candidates, confirmation requires submission of the Indigenous Birth Administrative Record (RANI), either of the candidate or of one of their parents.

§17 – Exceptional cases may be evaluated by the Inclusion and Belonging Council, which may accept alternative documentation, including a memorial and a declaration of ethnic belonging signed by recognized Indigenous leaders.

§18 – Current rules regarding documentation for racial self-identification are available on the USP General Secretariat website. <https://secretaria.webhostusp.sti.usp.br/?p=12343>

§19 – For item III, documents listed in Article 209 of Federal Decree No. 57,654/1966 will be accepted. Male candidates aged 45 or older by December 31 of the year prior to the application period are exempt.

§20 – The 10-page limit for the academic project includes all content, including references and appendices. Only the cover page and table of contents are excluded and must not be numbered. Failure to comply will result in rejection.

§21 – At the time of application, candidates are required to formally acknowledge and accept the terms set forth in this notice, as well as to provide their explicit consent to the processing of their personal data for the purposes of the selection process, in accordance with the Brazilian General Data Protection Law (Lei Geral de Proteção de Dados Pessoais – LGPD, Law No. 13,709/2018).

§22 – Only applications fully compliant with this notice will be considered.

§23 – At the time of application, candidates may indicate their intention to undertake the examinations in English, pursuant to Article 52, paragraph 2-A, of the Regulations of the Institute of Physics. The content of the examinations shall be identical in both Portuguese and English.

2. Application Fee

The application fee is R\$ 384.20 (three hundred eighty-four Brazilian reais and twenty cents), to be paid via the link <https://managerweb.fusp.org.br/#!/acessos/A0F70805/eventos>. Proof of payment must be attached at the time of application.

§1 – The applicant may request, through the application system (<https://uspdigital.usp.br/gr/admissao>), exemption from or reduction of the application fee in the following cases:

I – Full exemption from the application fee shall be granted to applicants who can demonstrate that they are regular blood donors, in accordance with State Law No. 12,147 of December 12, 2005;

II – A 50% (fifty percent) reduction of the application fee shall be granted to applicants who cumulatively demonstrate that they:

- are regularly enrolled in a preparatory course for higher education entrance examinations or in an undergraduate or graduate program; and
- receive a monthly income lower than two (2) minimum wages or are unemployed.

§2 – For the purposes of the exemption provided for in item I of §1, the applicant shall upload, through the application system, between May 25, 2026, and May 26, 2026, proof of blood donation on at least three (3) occasions within the twelve (12) months preceding the end of the exemption request period. Such proof shall be issued on official letterhead and shall include the date, signature, and stamp of the duly authorized blood collection entity.

§3 – For the purposes of the reduction provided in item II of §1, the applicant must upload, in the application system, between May 25, 2026 and May 26, 2026, the following documents:

- proof of enrollment in a preparatory course or in an undergraduate or graduate program; and
- proof of income or a written declaration of unemployment status, including full name, CPF number, date, and signature.

§4 – Requests for exemption and reduction will be reviewed administratively, and the results will be published in the application system on June 2, 2026.

§5 – In the event of denial, the applicant may submit a request for reconsideration directly through the application system between June 9, 2026 and June 10, 2026.

§6 – The results of any reconsideration requests will be published on June 12, 2026 in the application system.

§7 – The final results of exemption and reduction requests will be published in the Official Gazette of the State of São Paulo.

§8 – No partial or full refund of the application fee will be granted in cases attributable solely to the applicant.

§9 – Except in cases of exemption as provided for in §1, the failure of the application fee payment to be duly processed by the banking system, in the prescribed manner and within the designated application period, shall result in the automatic cancellation of the application.

§10 – It shall be the sole responsibility of the applicant to ensure that payment has been duly completed within the established deadlines. The University shall not be held liable for any failures within the banking system, including but not limited to unprocessed scheduled payments or any other impediments to the clearance of payment.

3. Review of Applications

Applications shall be reviewed by the Congregation (Faculty Council) of the Institute of Physics with regard to their formal compliance within a maximum period of ninety (90) days after the end of the application period. The decision shall be published in the Official Gazette of the State of São Paulo within five (5) business days.

§1 – The competitive examination shall take place within a period of thirty (30) to one hundred twenty (120) days, counted from the date of publication in the Official Gazette of the State of São Paulo of the approval of applications, in accordance with Article 134 of the General Regulations of the University of São Paulo.

§2 – The call for the examinations shall be published in the Official Gazette of the State of São Paulo at least five (5) business days prior to their commencement.

4. Examination Structure

The competitive examination shall be conducted according to objective criteria, in two stages, through the assignment of scores in the following examinations:

I – First stage (eliminary):

- Evaluation of the academic project – weight 0.5

II – Second stage:

- a) Evaluation of the academic memorial, including a public oral examination – weight 4
- b) Teaching examination and the corresponding oral examination – weight 3
- c) Presentation of the research project and the corresponding oral examination – weight 2.5

§1 – The call for applicants to take the examinations shall be published in the Official Gazette of the State of São Paulo.

§2 – The candidate shall be eliminated from the present selection process, without prejudice to any applicable legal sanctions, if at any time he or she:

- a) arrives after the scheduled start time of the examination proceedings or any of its stages, including the drawing of the topic, if applicable;
- (a) arrives after the scheduled commencement time of the examination proceedings or any of their stages, including, where applicable, the drawing of the topic;
- b) fails to appear when required during any stage of the examination or leaves the examinations without authorization from the Examining Committee;
- c) includes, in examination materials that require anonymity, any sign, mark, initials, annotation, or signature that allows identification;
- d) engages in inappropriate conduct or disrupts the proper conduct of the examinations or any stage of the selection process, disturbing the order of proceedings through verbal manifestations or behavior incompatible with the fairness and orderly environment required;
- e) carries a firearm at the examination venue, even if legally authorized to do so, except in exceptional cases provided by law and expressly authorized by the Examining Committee.

§3 – In the evaluation of the examinations, the Examining Committee shall take into account the purpose underlying the creation of the position (authorization of the faculty post) to which this selection process refers, as set forth in the annex to this notice.

5. Academic Project Evaluation

The following rules shall apply to the evaluation of the academic project:

I – At the time of application, the candidate must submit an academic project proposal, in accordance with item 1, subsection VI, of this Notice;

II – The Examining Committee shall mandatorily consider the following criteria in evaluating the submitted project:

a) alignment with the academic project of the Institute, available at: <https://portal.if.usp.br/diretoria/sites/portal.if.usp.br/diretoria/files/Projeto%20Acad%C3%AAmico%20do%20Instituto%20de%20F%C3%ADsica%20da%20USP%202024-2028.pdf>

b) alignment with the academic project of the Department, available at: https://portal.if.usp.br/dfmt/sites/portal.if.usp.br/dfmt/files/Proposta_Projeto%20Acade%CC%82mico%20DFMT%20%282023%20-%202027%29%20home%20page%20DFMT.pdf

c) alignment with the faculty profile described in the annex to this Notice;

d) originality, feasibility, and coherence.

Sole Paragraph – The Examining Committee shall prepare a duly reasoned written report and assign the corresponding scores, which shall be made public in accordance with the established examination schedule.

6. Qualification for the Second Stage

Upon the conclusion of the evaluation of the eliminatory stage, each candidate shall be assigned a final score by each examiner, with due regard to the possible application of differentiated scoring, pursuant to item 10 of this Notice.

Sole Paragraph – Candidates who obtain a minimum score of 7 (seven) from the majority of the Examining Committee members shall be considered qualified to proceed to the second stage.

7. Evaluation of the Academic Memorial

The evaluation of the academic memorial, expressed as an overall score and comprising both the oral examination and the documentary assessment, shall duly reflect the candidate's merit.

§1 – In evaluating the academic memorial, the Committee shall consider:

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

II – university-level teaching activities;

III – activities related to community service;

IV – professional activities or others, when applicable;

V – academic degrees and other academic distinctions.

§2 – Upon completion of the oral examination of all candidates, the Examining Committee shall meet in a closed session, during which each examiner shall prepare a detailed written report on each candidate's academic memorial and assign the respective scores.

8. Teaching Examination

The teaching examination shall be public, with a minimum duration of forty (40) minutes and a maximum duration of sixty (60) minutes, and shall cover topics within the syllabus of the field of knowledge specified in this Notice.

- I – The candidate shall select the topic based on the examination syllabus;
- II – The candidate may use any teaching materials deemed necessary;
- III – Upon reaching the 60th (sixtieth) minute of the examination, the Examining Committee shall interrupt the candidate;
- IV – If the candidate's presentation ends before the 40th (fortieth) minute, the examiners shall assign a score of zero for this examination;
- V – At the end of the presentation, the members of the Examining Committee may request clarifications from the candidate, and the total time for questions and answers shall not exceed six (6) minutes per examiner or thirty (30) minutes in total;
- VI – Scores for the teaching examination shall be assigned after all candidates have completed their examinations.

Sole Paragraph – The Examining Committee shall take into account the relevance of the topic to the examination syllabus when assigning the score.

9. Research Project Presentation

The Research Project presentation shall be conducted as a talk and shall not exceed sixty (60) minutes for the examiners collectively and sixty (60) minutes for the candidate.

I – In the evaluation of the research project, its alignment with the field of knowledge defined in this Notice, as well as its relevance, originality, and feasibility in light of the infrastructure available at the Institute, shall be considered.

10. Final Scores

At the conclusion of the evaluation process, each candidate shall receive a final score from each examiner, calculated as the weighted average of the scores assigned in both stages, in accordance with the weights specified in item 4 and with the possible application of differentiated scoring pursuant to item 10 of this Notice.

11. Differentiated Scoring

Differentiated scoring shall be applied to candidates who self-identify as Black, Brown, or Indigenous, in accordance with the terms set forth below.

§1 – The formula for calculating the differentiated score to be assigned to Black, Brown, and Indigenous candidates at all stages of the public competitive examination shall be as follows:

$$PD = (MCA - MCPPI) / MCPPI$$

Where:

- **PD** is the differentiated score, calculated by each examiner, to be added to the scores of all Black, Brown, or Indigenous candidates who have opted to participate in the differentiated scoring system;
- **MCA** is the average score of the general competition among all candidates who received scores, excluding those disqualified (i.e., those who did not obtain a minimum final score of 7 (seven) from the majority of examiners). "General competition" refers to all candidates who received scores and did not self-identify as Black, Brown, or Indigenous, as well as those who, having self-identified as such, chose not to participate in the differentiated scoring system;
- **MCPPI** is the average score of the Black, Brown, and Indigenous (PPI) competition among all candidates who received scores, excluding those disqualified.

§2 – The formula for applying the differentiated score to the final scores of Black, Brown, and Indigenous candidates is:

$$\text{NFCPPI} = (1 + \text{PD}) \times \text{NSCPPI}$$

Where:

- **NFCPPI** is the final score in the stage of the public competitive examination after applying the differentiated scoring, which will determine the candidate's ranking at that stage, limited to the maximum score established in this Notice. At the end of the stage, this value shall be considered the candidate's final score;
- **NSCPPI** is the candidate's original (unadjusted) score, to which the differentiated scoring will be applied.

§3 – The calculations referred to in §1 and §2 of this item shall be carried out to two decimal places, and fractions greater than or equal to 0.5 shall be rounded up to the next whole number.

§4 – The differentiated score (PD) shall be applied to all eligible beneficiaries, i.e., those who have achieved the minimum performance required in this Notice, considering, for this purpose, the unadjusted score.

§5 – If no eligible candidates qualify for differentiated scoring, the differentiated score shall not be calculated.

§6 – The differentiated score shall not be applied if, in the formula above, MCPPI (average score of PPI candidates) is greater than MCA (average score of the general competition).

12. Scoring Scale

Scores for all examinations shall range from zero (0) to ten (10), rounded to one decimal place.

13. Announcement of Results

The result of the competitive examination shall be announced by the Examining Committee immediately after its conclusion, in a public session.

14. Qualification

Candidates who obtain a minimum final score of 7 (seven) from the majority of the examiners shall be considered qualified.

15. Indication of Candidates

Each examiner shall rank the candidates according to the highest scores assigned. In the event of a tie, the examiner shall provide a reasoned decision to break the tie.

16. Nomination

The candidate who obtains the highest number of nominations from the Examining Committee shall be proposed for appointment.

Sole Paragraph – In the event of a tie in the number of nominations, the Examining Committee shall decide on the basis of the highest overall average score. Should the tie persist, the Committee shall issue a duly reasoned decision to resolve it.

17. Approval of the Final Report

The report of the Examining Committee shall be submitted to the Congregation (Faculty Council) for approval, following formal review, within a maximum period of ninety (90) days.

Sole Paragraph – The decision of the Congregation (Faculty Council) and the report of the Examining Committee shall be published within five (5) business days.

18. Appeals

Appeals may be filed within ten (10) days from the date of publication of the relevant act in the Official Gazette of the State of São Paulo, under penalty of forfeiture of the right to appeal, in the following cases:

- I – decision of the Congregation (Faculty Council) appointing the Examining Committee;
- II – review of applications by the Congregation (Faculty Council), with regard to formal requirements;
- III – approval of the final report of the Examining Committee by the Congregation (Faculty Council).

§1 – The evaluation of candidates' merit is the exclusive and non-delegable responsibility of the Examining Committee, and appellate bodies shall not re-evaluate merit, but only verify the legality and regularity of the evaluation process.

§2 – Appeals based on item I, after review by the Congregation (Faculty Council), shall only proceed to higher instances after the final report of the examination has been approved by the Congregation (Faculty Council).

§3 – In appeals based on item III, the candidate selected shall be granted the opportunity to submit counterarguments within ten (10) days from formal notification.

19. Medical Examination

The appointment of the selected candidate shall be subject to approval in a medical examination conducted by the State Department of Medical Expertise (DPME), pursuant to Article 47, VI, of Law No. 10,261/68.

20. Appointment

The appointment of the approved candidate, as well as all related procedures, shall be governed by Resolution No. 7271 of 2016.

21. Exclusive Dedication

The faculty member under the RDIDP regime must maintain an exclusive employment relationship with the University of São Paulo, pursuant to Article 197 of the General Regulations of USP.

22. Validity of the Examination

The competitive examination shall have immediate validity, and only the candidate selected for the position shall be proposed for appointment.

23. Call for Appointment

The selected candidate shall be formally called to take office through publication in the Official Gazette of the State of São Paulo.

24. Additional Information

Further information regarding this Notice may be obtained from the Academic Division of the Institute of Physics of the University of São Paulo via email at ataac@if.usp.br or through the website: https://portal.if.usp.br/ataac/pt-br/concursos_abertos

ANNEX – JUSTIFICATION FOR THE AUTHORIZATION OF THE FACULTY POSITION

Current Situation of the Department/Area

The field of Theoretical Condensed Matter Physics constitutes one of the most traditional and well-established areas within the Institute of Physics of the University of São Paulo (IFUSP), exerting a significant impact on both the training of highly qualified human resources and the advancement of high-level scientific research. The present demand is associated with two principal research fronts: the electronic structure of materials (ESM), a well-established line of internationally recognized relevance, and quantum materials (QM), an emerging and interdisciplinary field that has gained increasing prominence in recent decades through the integration of concepts from Physics, Materials Science, and Quantum Computing.

The theoretical and computational investigation of systems exhibiting nontrivial quantum properties—such as unconventional superconductors, heavy fermion systems, quantum spin liquids, and topological insulators—has substantially broadened the scope for innovation across a range of technological domains. The increasing synergy between theoretical and experimental approaches, fostered by collaborations with large-scale research facilities, such as Sirius, further

underscores the need to strengthen this strategic area through the recruitment of researchers capable of independent and innovative contributions.

This appointment is essential to ensure the continuity of IFUSP's academic excellence in this field, enabling the renewal of the faculty body and the advancement of the frontiers of knowledge in theoretical condensed matter physics.

General Objective of the Faculty Appointment

The objective of this appointment is to consolidate and expand teaching, research, and outreach activities in Theoretical Condensed Matter Physics, with particular emphasis on quantum materials and the electronic structure of materials. The integration of contemporary theoretical and computational methodologies is expected, with a view to fostering interdisciplinary engagement with other strategic areas of IFUSP, as well as with leading national and international research centers.

The Institute seeks to appoint a researcher demonstrating strong potential for academic leadership, capable of establishing new high-impact lines of research and making substantive contributions to the training of students at all levels. The appointment further aims to foster scientific collaboration and to strengthen IFUSP's institutional presence in initiatives related to innovation and internationalization.

INDIVIDUALIZED PLAN

a) Teaching – Goals

The appointed faculty member is expected to contribute directly to undergraduate teaching, offering both required and elective courses within the Physics, Medical Physics, and Physics Teaching degree programs, as well as courses delivered to other units of the University of São Paulo. The generalist training in Physics requires versatility and demonstrated competence to teach across a broad spectrum of courses, ranging from introductory to advanced levels, including those directly related to Theoretical Condensed Matter Physics.

At the graduate level, the appointed faculty member is expected to participate in teaching activities by offering both foundational and specialized courses aligned with their research lines, thereby contributing to the continuous development and updating of the program. Engagement in the supervision of undergraduate research students, Master's and Ph.D. candidates, as well as postdoctoral researchers, is also anticipated.

Pedagogical development is strongly encouraged, and the adoption of contemporary teaching methodologies that foster active learning, interdisciplinarity, and critical thinking is expected.

b) Research and Innovation – Goals

The appointed faculty member shall develop high-level research in Theoretical Condensed Matter Physics, with emphasis on quantum materials and the electronic structure of materials. Their work is expected to combine intellectual independence with the ability to engage in internal and external collaborations at national and international levels.

The candidate is expected to secure funding from state, national, and international research agencies, as well as to publish regularly in high-impact, internationally recognized scientific journals. Collaboration with experimental groups and the development of innovative theoretical methods are highly valued.

Internationalization is encouraged through joint projects with foreign institutions, research visits, and active participation in global scientific collaboration networks.

c) Culture and Outreach – Goals

IFUSP maintains a strong tradition in outreach and science communication activities. The appointed faculty member is expected to actively contribute to this area by participating in established initiatives such as the *Physics Show*, the Demonstration Laboratory, and the *USP and Professions Fair*, as well as by proposing new actions for the dissemination and popularization of science.

There are also opportunities for engagement in activities aimed at physics education in schools, including workshops, seminars, and events for high school teachers and students. The organization of colloquia, public lectures, and collaboration with science communication media channels are also encouraged.

EXPECTED IMPACT OF THE APPOINTMENT

Short term: Immediate integration into teaching activities; initiation of an independent line of research; active engagement in collaborative projects; and participation in the institutional activities of DFMT.

Medium term: Consolidation of the research line through the successful acquisition of research funding; production of high-impact scientific output; supervision at the graduate level; and expansion of national and international scientific collaborations.

Long term: Strengthening of DFMT's scientific leadership in Condensed Matter Physics; training of highly qualified human resources; contribution to institutional leadership in strategic areas of contemporary physics; and enhanced involvement in innovation and outreach initiatives.