GRADUATE PROGRAM IN INDUSTRIAL BIOTECHNOLOGY – PPGBI
CONTINUOUS CALL FOR APPLICATIONS FOR THE PhD AND DIRECT PhD PROGRAMS

The Coordinating Committee of the Graduate Program in Industrial Biotechnology (CCP-PPGBI) of the Department of Biotechnology, School of Engineering of Lorena (EEL-USP), hereby announces the opening of the selection process for candidates applying to the PhD and Direct PhD programs, for the period from October 13, 2025, to February 13, 2026.

1. AVAILABLE POSITIONS

1.1 A total of seven (7) positions will be offered, distributed between the PhD and Direct PhD programs, with scholarships provided by the Coordination for the Improvement of Higher Education Personnel (CAPES).

1.2 The available positions are linked to research projects supervised by faculty members accredited in the PPGBI program and are listed in the Attachments (I to VI) of this Call for Applications.

1.3 Each applicant **may apply for only one position**, corresponding to a specific research project (Attachments I to VI).

2. APPLICATIONS

Applications must be submitted **exclusively by electronic means**, by sending the required documentation to the faculty member responsible for the position to which the candidate wishes to apply, with a mandatory copy (cc) to: **ppgbi@eel.usp.br**

Candidates who self-declare as Black or Brown must submit the necessary documentation for the racial self-identification verification process, in accordance with COIP Resolution No. 8835, dated August 7, 2025. One scholarship will be reserved exclusively for candidates who self-declare as Black or Brown.

All documents must be submitted in searchable PDF format, with good readability and appropriate resolution. When applicable, documents must be electronically signed (certified electronic signature such as gov.br, DocuSign, or equivalent), in accordance with CoPGr Circular No. 12/2023.

3. REQUIRED DOCUMENTS FOR PhD OR DIRECT PhD APPLICATION

Applicants must submit the following documents in PDF format:

3.1. Copy of the master's degree Diploma or Certificate of Completion (if applicable);
3.2. Copy of the master's Academic Transcript;
3.3. Copy of the Undergraduate Degree Diploma;
3.4. Copy of the Undergraduate Academic Transcript;
3.5. Curriculum Summary (FAPESP model);
3.6. Contact information for two individuals (professors, researchers, or professionals) who can serve as references for the applicant.

4. SELECTION CRITERIA FOR PhD AND DIRECT PhD PROGRAMS

4.1. The positions offered in this Call are associated with research projects conducted by faculty members accredited in the PPGBI program (Attachments I to VI). Therefore, each faculty member is responsible for conducting the individual selection process, choosing the candidate whose profile best matches the competencies required for the development of the respective project.

It is also the faculty member's responsibility to ensure compliance with the rules established in this Call for Applications.

4.2. Each faculty member may, at their discretion, increase the visibility of their research proposal within the scientific community by disseminating information about the available position or project through websites, social media, and/or other communication channels.

4.3. The positions must remain open for a minimum of fifteen (15) days before the selection of the successful candidate(s) and may remain open until the end of the application period specified in this Call.

4.4. The selection processes conducted by the faculty members will be ratified by the PPGBI Coordinating Committee (CCP-PPGBI) upon submission of the following documentation:

4.4.1. List of all candidates enrolled in the selection process, along with the documents submitted at the time of application;

4.4.2. Written justification for the selection of the recommended candidate;

4.4.3. Proposed activity plan for the scholarship holder.

4.5. The enrollment of the selected candidate in the Graduate Committee (CPG-EEL) may be carried out after ratification by the CCP-PPGBI.

5. SELECTION CRITERIA FOR APPLICANTS HOLDING SCHOLARSHIPS GRANTED BY NATIONAL OR INTERNATIONAL AGENCIES, COMPANIES, OR INSTITUTIONS

The selection of PhD and Direct PhD applicants who already hold scholarships granted by national or international agencies, companies, or institutions will be conducted by the PPGBI Coordinating Committee (CCP-PPGBI), independently of the number of CAPES-funded scholarships available in this Call for Applications.

6. DATES / PERIODS

The results will be announced within a maximum of five (5) business days after ratification by the CCP-PPGBI.

7. ENROLLMENT

After ratification by the CCP-PPGBI, the Graduate Committee of EEL (CPG-EEL) will publish the results on its official website (https://cpg.eel.usp.br/) and will summon the selected candidate to appear in person, at a pre-specified location, date, and time, to complete the enrollment process.

8. REQUIRED DOCUMENTS FOR PhD ENROLLMENT

8.1. Completed and signed First Regular Enrollment Form, with the advisor's approval. Available at: www.cpg.eel.usp.br/formulario-cpg

8.2. Copy of the master's degree Diploma or Certificate of Completion;

8.3. Copy of the Undergraduate Degree Diploma;

8.4. Copy of the Undergraduate Academic Transcript;

8.5. Copy of the master's Academic Transcript;

8.6. Copy of the CPF (Individual Taxpayer Registry) – waived if included on the RG; mandatory for foreign applicants;

8.7. Copy of the RG (General Registry ID) — CNH, Professional License, Military ID, or other documents will not be accepted;

8.8. Copy of the RNE (National Registry of Foreigners) or Protocol containing visa type (Temporary IV, Mercosur, or Permanent), number, and validity — for foreign applicants;

8.9. Copy of the Passport (pages showing identification, passport number, and validity) — for foreign applicants;
8.10. Copy of the Birth and/or Marriage Certificate;
8.11. One recent 3x4 photo.

9. REQUIRED DOCUMENTS FOR DIRECT PhD ENROLLMENT

9.1. Completed and signed First Regular Enrollment Form, with the advisor's approval. Available at: www.cpg.eel.usp.br/formulario-cpg
9.2. Copy of the Undergraduate Degree Diploma or Certificate of Completion, indicating the date of graduation;
9.2.1. This document is mandatory for the enrollment process;
9.3. Copy of the Undergraduate Academic Transcript;
9.4. Copy of the CPF – waived if included on the RG (mandatory for foreign applicants);
9.5. Copy of the RG — CNH, Professional License, Military ID, or other documents will not be accepted;
9.6. Copy of the RNE or Protocol (containing visa type, number, and validity) — for foreign applicants;
9.7. Copy of the Passport (pages with identification, number, and validity) — for foreign applicants;
9.8. Copy of the Birth and/or Marriage Certificate;
9.9. One recent 3x4 photo.

10. FINAL CONSIDERATIONS

10.1. Candidates must carefully read all instructions in this Call for Applications before applying and are responsible for the accuracy of the information provided. Submitting an application implies full agreement with the rules and conditions established herein, and claims of ignorance will not be accepted.
10.2. Any omitted cases will be analyzed and decided upon by the CCP-PPGBI.
10.3. All submitted documents must be in PDF format. Applications will be confirmed via a message from the PPGBI office. If the candidate does not receive confirmation within two (2) business days, they must contact the PPGBI office by phone: +55 (12) 3159-5034.
10.4. Additional Information:

- Information on the research areas of PPGBI faculty members:
https://sites.usp.br/ppgbi/orientadores/
- Information on scholarships available through PPGBI/EEL-USP:
http://sites.usp.br/ppgbi/bolsas-de-estudo/
- Graduate Office – Industrial Biotechnology (PPGBI):
Phone: +55 (12) 3159-5034
Website: http://sites.usp.br/ppgbi/
E-mail: ppgbi@eel.usp.br
- Graduate Committee – CPG/EEL-USP:
Phone: +55 (12) 3159-5051 / +55 (12) 3159-5015
E-mail: cpg@eel.usp.br

ATTACHMENT I

PhD or Direct PhD (one position)

The selected fellow will develop the project entitled: "**Renewable-source-derived polyimines: exploring dynamic covalent bonds for the development of self-healing materials.**"

Project objective: The aim is to employ vanillin, eugenol, and furan derivatives as platforms to synthesize new polymers containing dynamic covalent bonds derived from renewable sources. Specifically, the project intends to synthesize bifunctional aldehydes and amines as key compounds for the synthesis of polyimines. By exploring the inherent reversibility of covalent bonds in imines, this project seeks to develop new polymers capable of reorganizing and regenerating themselves, effectively promoting material circularity and paving the way for a more sustainable future in polymer science.

Fields of study: Organic Chemistry; Polymer Chemistry; Polymers derived from renewable sources.
Supervisor: Prof. Talita Martins Lacerda

Requirements:
- Solid theoretical and experimental background in the project's research area;
- Ability to propose and independently carry out experimental approaches;
- Capacity to work ethically and respectfully in a team and engage in interdisciplinary collaborations;
- Proficiency with scientific research tools (databases, reference management software);
- Critical reading and interpretation of scientific articles;
- Ability to write academic texts (reports, articles, proposals) in Portuguese and English.

Scholarship amount: According to the CAPES guidelines: https://www.gov.br/capes/pt-br/acesso-a-informacao/acoes-e-programas/bolsas/prestacao-de-contas/valores-de-bolsas

How to apply:
Applicants must send an email with the required documentation (as described in the main call) to **ppgbi@eel.usp.br**, with a copy to **talitalacerda@usp.br**. **Subject line: "Scholarship Application – PPGBI Call 02/2025 – Attachment I."**

Selection process: 1st stage: Curriculum analysis; 2nd stage: Interview.
Interview dates (for candidates approved in the 1st stage) and results will be informed by email by the supervisor.

Start date: Immediate.

ATTACHMENT II

PhD or Direct PhD (one position)

The selected fellow will develop the project entitled: **"Sustainable Transformation of Wood Using Lignin and Furfuryl Alcohol."**

Project objective: The project aims to develop a sustainable method for treating reforested wood to increase its dimensional stability and resistance to biodegradation without resorting to toxic agents traditionally used for this purpose. To achieve this, the proposal involves incorporating lignin and its derivatives into the furfuryl alcohol polymerization process to reduce costs, minimize environmental impacts, and improve the physicochemical performance of the treated wood. Additionally, the project will characterize the materials obtained through physical-mechanical and biological resistance analyses, as well as elucidate the nature of the polymers formed using spectroscopic and chromatographic techniques, contributing to the advancement of eco-friendly and high-value-added wood treatments.

Fields of study: Chemistry, Organic Chemistry, Biomass Chemistry.
Supervisor: Prof. Talita Martins Lacerda

Requirements:
- Solid theoretical and experimental background in the project's research area;
- Ability to propose and independently carry out experimental approaches;
- Capacity to work ethically and respectfully in a team and engage in interdisciplinary collaborations;
- Proficiency with scientific research tools (databases, reference software);
- Critical reading and interpretation of scientific articles;
- Ability to write academic texts (reports, articles, proposals) in Portuguese and English.

Scholarship amount: According to the CAPES guidelines: https://www.gov.br/capes/pt-br/acesso-a-informacao/acoes-e-programas/bolsas/prestacao-de-contas/valores-de-bolsas

How to apply:
Applicants must send an email with the required documentation to **ppgbi@eel.usp.br**, with a copy to **talitalacerda@usp.br**. **Subject line: "Scholarship Application – PPGBI Call 02/2025 – Attachment II."**

Selection process:
1st stage: Curriculum analysis; 2nd stage: Interview.
Interview dates (for candidates approved in the 1st stage) and results will be informed by email by the supervisor.

Start date: Immediate.

ATTACHMENT III

PhD (two positions)

The selected fellows will develop projects related to the theme: **"Hydrodynamic cavitation-assisted pretreatment applied to 2G biorefineries: scale-up and process intensification,"** linked to the FAPESP Thematic Grant No. 2023/09789-8, entitled **"Decarbonizing transportation for societal benefit: enhancing sustainability through the integration of biochemical and thermal routes for full biomass utilization."**

Project objectives: Hydrodynamic cavitation systems, developed successfully in recent years by our research group at EEL/USP, will be employed for the pretreatment of biomass (sugarcane bagasse and straw).
In one project, the focus will be processing optimization and system scale-up, using statistical optimization tools and evaluating scale-up criteria with cavitators of different working volumes available in our laboratory.
In the second project, the focus will be processing intensification, applying hydrodynamic cavitation to assist various stages of second-generation biofuel production. Additionally, interconnected bioreactor systems will be used to develop processes with simultaneous steps.
For both projects, knowledge in biochemical engineering and applied microbiology is desirable.

Scholarship amount: According to the CAPES guidelines: https://www.gov.br/capes/pt-br/acesso-a-informacao/acoes-e-programas/bolsas/prestacao-de-contas/valores-de-bolsas

Fields of study: Biochemical Engineering; Industrial Biotechnology.
Supervisor: Prof. Júlio César dos Santos (Lattes: http://lattes.cnpq.br/9646799989531481)

Requirements:
- Master's degree completed within the last 3 years;
- Ability to work independently and collaboratively in multidisciplinary research teams;
- English proficiency for reading, scientific writing, and conversation;
- Scientific publications in indexed journals (desirable).
- Scholarship amount: According to CAPES guidelines.

How to apply:
Applicants must send an email with the required documentation to **ppgbi@eel.usp.br** with a copy to **jsant200@usp.br** by November 7, 2025, indicating in the **subject line: "Scholarship Application – PPGBI Call 02/2025 – Attachment III."**

Selection process:
1st stage: Curriculum analysis; 2nd stage: Interview.
Interview dates and results will be communicated by email by the supervisor.

Start date: December 2025.

ATTACHMENT IV

PhD (one position)

The selected fellow will develop the project entitled: **"Enzymatic oxidation of sugarcane bagasse II: exploring the interaction between CDHs and LPMOs toward the development of more efficient enzymes for integration into a genetically modified cell factory,"** linked to a Young Investigator Grant.

Project objective: This research line aims to continue developing a cell factory for enzyme production using RNAi and CRISPR technologies. Specifically, the project seeks to elucidate coupling mechanisms and electron transfer pathways between cellobiose dehydrogenase (CDH) and lytic polysaccharide monooxygenases (LPMOs), which oxidize a wide range of chemical bonds in lignocellulosic materials, acting synergistically with enzymes of the hydrolytic system. Combining oxidative and hydrolytic functions in a single cellular system will yield an enzymatic complex capable of more efficiently degrading lignocellulosic biomass, regardless of its source.

Fields of study: Enzymology, Molecular Biology, and Microbiology.
Supervisor: Prof. Fernando Segato

Requirements:
- Master's degree completed within the last 3 years;
- Ability to work independently and collaboratively in a multidisciplinary team;
- English proficiency for reading, scientific writing, and conversation;
- Scientific publications in indexed journals (preferred);
- Preference will be given to candidates with international experience.

Scholarship amount: According to the CAPES guidelines: https://www.gov.br/capes/pt-br/acesso-a-informacao/acoes-e-programas/bolsas/prestacao-de-contas/valores-de-bolsas

How to apply:
Applicants must send an email with the required documentation to **ppgbi@eel.usp.br**, with a copy to **segato@usp.br**. **Subject line: "Scholarship Application – PPGBI Call 02/2025 – Attachment IV."**

Selection process:
1st stage: Curriculum analysis; 2nd stage: Interview.
Interview dates and results will be informed by email by the supervisor.

Start date: Immediate.

ATTACHMENT V

PhD (one position)

The selected fellow will develop the project entitled: **"Aqueous supramolecular structures composed of amphiphilic copolymer blends and ionic liquids for the extraction and encapsulation of antitumor biomolecules,"** linked to the FAPESP Regular Grant No. 2023/13870-5.

Project objective: This project aims to develop aqueous supramolecular platforms formed by blends of amphiphilic copolymers and ionic liquids for the extraction, purification, and encapsulation of biomolecules of clinical and therapeutic interest with biological activity (e.g., antitumor, antioxidant, antimicrobial). The proposal combines aqueous biphasic systems (ABS) and microfluidic technologies to improve control over micelle and polymeric vesicle formation, optimizing parameters such as selectivity, efficiency, and stability. The goal is to create intelligent, sustainable, and scalable systems that can act as integrated platforms for drug and biopharmaceutical processing and delivery, fostering advances in pharmaceutical biotechnology and cancer therapy.

Fields of study: Nanobiotechnology; Pharmaceutical Biotechnology; Bioengineering.
Supervisor: Prof. André Moreni Lopes

Requirements:
- Master's degree completed within the last 4 years;
- Ability to work independently and collaboratively in a multidisciplinary research group;
- English proficiency for reading, scientific writing, and conversation;
- Scientific publications in indexed journals (preferred);
- Preference will be given to candidates with international experience;
- The project will be developed in person.

Scholarship amount: According to the CAPES guidelines: https://www.gov.br/capes/pt-br/acesso-a-informacao/acoes-e-programas/bolsas/prestacao-de-contas/valores-de-bolsas

How to apply:
Applicants must send an email with the required documentation to **ppgbi@eel.usp.br**, with a copy to **andreml@usp.br**. **Subject line: "Scholarship Application – PPGBI Call 02/2025 – Attachment V."**

Selection process:
1st stage: Curriculum analysis; 2nd stage: Interview.
Interview dates and results will be communicated by email by the supervisor.

Start date: Immediate.

ATTACHMENT VI

PhD (one position)

The selected fellow will develop the project entitled: **"Production of aromatic compounds by *Geotrichum candidum* strains using dairy effluents: from direct biosynthesis to the synergistic role of lipases and proteases in generating value-added compounds."**

Project objective: This project continues the INCT Yeasts research on Brazilian biodiversity (CNPq 406564/2022-1), focusing on metabolic properties of biotechnological interest. It aims to investigate the ability of *Geotrichum candidum* strains to produce industrially relevant aromatic compounds using dairy effluents as a carbon source. In a subsequent stage, the synergism between endogenous lipases and proteases will be evaluated, as well as their effect on the formation of esters, seeking to understand the mechanisms involved in bioconversion and optimize the generation of value-added products. The expected results will contribute to developing innovative bioprocesses based on renewable resources, promoting the sustainable use of industrial effluents and the production of high-value natural aromatic compounds, aligned with the principles of bioeconomy and green biotechnology.

Fields of study: Bioprocesses, Industrial Biotechnology, and Applied Microbiology.
Supervisor: Prof. Dr. Rita de Cássia Lacerda Brambilla Rodrigues

Requirements:
- Master's degree completed within the last 3 years;
- Ability to work independently and collaboratively in a multidisciplinary research team;
- English proficiency for reading, scientific writing, and conversation;
- Scientific publications in indexed journals (desirable);
- Preference for candidates with experience in fermentation processes and GC-MS analyses.

Scholarship amount: According to the CAPES guidelines: https://www.gov.br/capes/pt-br/acesso-a-informacao/acoes-e-programas/bolsas/prestacao-de-contas/valores-de-bolsas

How to apply:
Applicants must send an email with the required documentation to **ppgbi@eel.usp.br**, with a copy to **ritaclb_rodrigues@usp.br**. **Subject line: "Scholarship Application – PPGBI Call 02/2025 – Attachment VI."**

Selection process:
1st stage: Curriculum analysis; 2nd stage: Interview.
Interview dates and results will be informed by email by the supervisor.

Start date: Immediate.