GRADUATE PROGRAM IN INDUSTRIAL BIOTECHNOLOGY – PPGBI
MASTER'S DEGREE ADMISSION CALL FOR APPLICATIONS

The Coordinating Committee of the Graduate Program in Industrial Biotechnology (CCP-PPGBI) of the Department of Biotechnology at the School of Engineering of Lorena (EEL-USP), hereby announces the opening of the selection process for the Master's degree program, for the period **from November 4 to December 3, 2025**.

1. AVAILABLE POSITIONS

1.1. A total of six (6) positions will be offered for the Master's degree program. Of these six (6) positions, five (5) will be granted to candidates who will receive scholarships from the Coordination for the Improvement of Higher Education Personnel (CAPES), and one (1) will be assigned to a candidate who does not require a scholarship during the period in which they will pursue the Master's degree through PPGBI.

1.2. The five (5) positions with available scholarships are associated with research projects supervised by faculty members accredited by the PPGBI and are listed in **Attachments I to IV** of this call.

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

1.4. Candidates who do not require a scholarship must contact the PPGBI directly via email at ppgbi@eel.usp.br, expressing their interest and indicating the desired research line and advisor (for more information, visit: https://sites.usp.br/ppgbi/orientadores/).

2. APPLICATIONS

Applications will be accepted exclusively via electronic submission, by sending the required documents to the PPGBI email address ppgbi@eel.usp.br, with a mandatory copy to the email of the faculty member responsible for the position (Attachments I to IV) for which the candidate wishes to apply.

Candidates who self-declare as Black or Brown must submit the necessary documentation for the racial 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 sent in searchable PDF format, with good readability and adequate resolution. When applicable, files must be electronically signed (certified electronic signature such as gov.br, DocuSign, or equivalent), in accordance with CoPGr Circular 12/2023.

3. REQUIRED DOCUMENTS FOR MASTER'S PROGRAM APPLICATION

Applicants must submit the following documents in PDF format:

3.1. Application form (template available at https://cpg.eel.usp.br/aluno/formularios/inscricao-para-selecao);

3.2. Copy of the Undergraduate Diploma.

3.3. Copy of the Undergraduate Academic Transcript.

3.4. Curriculum summary (FAPESP model).

3.5. Contact information of two individuals (professors, researchers, or professionals) who can serve as references for the candidate.

4. SELECTION CRITERIA FOR THE MASTER'S PROGRAM

4.1. The five (5) positions available in this call for application are associated with research projects supervised by faculty members accredited by PPGBI (**Attachments I to IV**). Therefore, each faculty member is responsible for conducting the individual selection process, choosing the candidate whose profile aligns with the competencies required for the respective project. It is also the faculty member's responsibility to ensure compliance with the regulations established in this call.

4.2. The position intended for a candidate **not applying for a scholarship** is not linked to the research projects listed in the attachments. The application will be forwarded by PPGBI to the faculty member indicated by the candidate, who will be responsible for the selection process.

4.3. Each faculty member may, at their discretion, increase the visibility of their research proposals within the academic community by sharing information about the position or project through websites, social media, and/or other communication channels.

4.4. Applications will remain open until **6:00 p.m. (BRT) on December 3, 2025**, and interviews will take place between **December 8 and 12, 2025**, via the Google Meet platform.

4.5. The results will be announced on **December 17, 2025**, after the faculty-led selection processes have been approved by the PPGBI Coordinating Committee (CCP-PPGBI), upon submission of the following documentation:

4.5.1. List of candidates enrolled in the selection process and their respective application documents.

4.5.2. Written justification for the choice of the selected candidate.

4.5.3. The scholarship holder's activity plan.

4.6. Enrollment of the selected candidate in the **Graduate Committee of EEL** (CPG-EEL) must take place between **February 23 and 26, 2026**.

5. SELECTION CRITERIA FOR CANDIDATES WITH SCHOLARSHIPS GRANTED BY NATIONAL OR INTERNATIONAL AGENCIES, COMPANIES, OR INSTITUTIONS

The selection of Master's candidates who already hold scholarships granted by national or international agencies, companies, or other institutions will be conducted by the **PPGBI Coordinating Committee (CCP-PPGBI)**, independently of the number of CAPES-funded scholarships available under this call for application.

6. IMPORTANT DATES FOR THE SELECTION PROCESS

Applications	Selection Process	Results	Enrollment
Nov 4 – Dec 3, 2025	Dec 3 – 12, 2025	Dec 17, 2025 https://cpg.eel.usp.br/	Feb 23- 26, 2026

7. ENROLLMENT

Enrollment must be carried out **in person** at the **Graduate Committee Office (CPG)** of **EEL/USP**, from **February 23 to 26, 2026**, between **8:30 a.m. and 11:00 a.m.** and **2:30 p.m. and 5:00 p.m.**, either by the candidate or their legal representative.

8. REQUIRED DOCUMENTS FOR MASTER'S PROGRAM ENROLLMENT

8.1. Duly completed and signed First Regular Enrollment Request Form, with the advisor's approval. The form is available at: www.cpg.eel.usp.br/formulario-cpg

8.2. Copy of the Undergraduate Diploma.

8.3. Copy of the Undergraduate Academic Transcript.

8.4. Copy of the CPF (Individual Taxpayer Registry) – waived if included on the ID card (mandatory for foreign candidates).

8.5. Copy of the ID card (RG) – driver's license, professional registration cards, or military IDs will not be accepted.

8.6. Copy of the RNE (National Registry of Foreigners) or Protocol (showing type of visa: Temporary IV, Mercosur, or Permanent) with number and validity period – for foreign candidates.

8.7. Copy of the Passport (pages showing identification, number, and validity) – for foreign candidates.

8.8. Copy of the Birth and/or Marriage Certificate.

8.9. One recent 3x4 photo.

9. FINAL CONSIDERATIONS

9.1. Candidates must carefully read all instructions in this Call for Applications before applying and are responsible for the information provided. Submission of the application implies full agreement with the rules and conditions set forth herein and claims of ignorance will not be accepted.

9.2. Any omitted cases will be reviewed and decided upon by the CCP-PPGBI.

9.3. All submitted documents must be in PDF format. Applications will be confirmed by a message from the PPGBI office. If the candidate does not receive confirmation within two (2) business days, they must contact PPGBI at +55 (12) 3159-5034.

9.4. 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 Program:
Phone: +55 (12) 3159-5034
Website: http://sites.usp.br/ppgbi/
Email: ppgbi@eel.usp.br

- Graduate Committee – CPG/EEL-USP:
Phone: +55 (12) 3159-5051 / +55 (12) 3159-5015
Email: cpg@eel.usp.br

ATTACHMENT I

The scholarship holder will be selected to develop the project entitled: **"Synthesis and characterization of renewable-based nonionic surfactants for application in emulsion polymerization systems."**

Project objective: The project aims to develop nonionic surfactants derived from vanillin and fatty acids, exploring the use of renewable raw materials and synthetic strategies aligned with the principles of green chemistry. The combination of these two classes of molecules enables the production of new surfactants that are potentially biodegradable and of low toxicity, capable of replacing petrochemical-derived compounds commonly used in industrial processes. The obtained surfactants will be synthesized and characterized in terms of their chemical structure and physicochemical properties and subsequently evaluated for their emulsifying capacity and the stability of emulsions formed under different experimental conditions. In a later stage, the most promising compounds will be tested in emulsion polymerization systems to assess their efficiency as stabilizing agents and their impact on the morphology and performance of the resulting polymers.

This proposal seeks to contribute to advances in the development of bio-based additives and surfactants, promoting more sustainable technological alternatives compatible with the contemporary challenges of the chemical and materials industries.

Research areas: Organic chemistry; Polymer chemistry; Polymers derived from renewable sources.

Principal Investigator: Prof. Talita Martins Lacerda

Requirements:
- Theoretical and experimental knowledge in the project's research area.
- Ability to design and perform experimental approaches independently.
- Ethical, collaborative, and respectful teamwork skills.
- Proficiency in scientific search tools (databases, reference management software);
- Strong ability for critical reading and interpretation of scientific articles.
- Proficiency in academic writing (reports, papers, project proposals) in both Portuguese and English.

Scholarship amount: According to the modality described by CAPES at 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 specified in the main call to **ppgbi@eel.usp.br**, with a copy to **talitalacerda@usp.br**. The subject line must read: **"Scholarship Application – PPGBI Call 03/2025 – Attachment I."**

The interview for the selection process will be scheduled by the supervising professor via the email provided by the candidate and will take place between December 8 and 12, 2025.

ATTACHMENT II

The scholarship holder will be selected to develop the project entitled: **"Impregnation of *Pinus* wood with lignin".**

Project objective and summary: The use of wood in civil construction and furniture manufacturing has always been associated with housing quality and human well-being. In many cases, however, wood requires treatments to preserve its dimensional stability and resistance to termite and microorganism attacks. The present project aims to make *Pinus* wood more resistant through impregnation with lignin obtained from Kraft liquor. For this purpose, *Pinus* wood samples will be treated with Kraft liquor in an originally alkaline medium. After impregnation under reduced pressure, two lignin fixation methods will be evaluated:

1. Acidification of the medium to promote lignin precipitation within the cell lumens.
2. Acidification of the medium simultaneous with the addition of fungal laccases, to polymerize the impregnated lignin within the wood.

The treated wood will be characterized using physical-mechanical techniques (surface hydrophobicity, water absorption, dimensional stability, dynamic mechanical analysis – DMA, and fluorescence microscopy), as well as through biodegradation resistance assays using wood-degrading fungi. The nature of the lignin generated in the laccase treatment will be investigated using chromatographic techniques to determine molar mass distribution, and FTIR and 2D-NMR spectroscopies.

Research areas: Biomass Chemistry, Enzymology, Polymers.

Principal Investigator: Prof. André Ferraz

Requirements:
- Undergraduate degree in Biochemical Engineering or related fields, including Chemistry, Biochemistry, or Chemical Engineering.
- Proficiency in English for scientific reading and writing.

Scholarship amount: According to the modality described by CAPES at 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 documentation required in the main call to **ppgbi@eel.usp.br**, with a copy to **andreferraz@usp.br**. The subject line must read: **"Scholarship Application – PPGBI Call 03/2025 – Attachment II."**

The interview will be scheduled by the supervising professor via the email provided by the candidate and will take place between December 8 and 12, 2025.

ATTACHMENT III

The scholarship holder will be selected to develop the project entitled: **"Evaluation of yeast co-culture strategies for the efficient co-fermentation of glucose and xylose,"** which is part of the CNPq project No. **305515/2021-7.**

Project objective and summary: The general objective of this research line is to continue efforts toward developing the process of second-generation (2G) ethanol production from lignocellulosic biomass, with emphasis on the efficient use of the main sugars present in enzymatic hydrolysates of rice straw. Specifically, this project aims to evaluate different fermentation conditions employing combinations of yeasts to optimize the conversion of C6 and C5 sugar mixtures into ethanol. This approach represents a relevant contribution to advancing 2G ethanol production technology and to promoting research directed toward consolidating sustainable and economically viable bioprocesses.

Research areas: Industrial Microbiology and Fermentation.

Principal Investigator: Prof. Inês C. Roberto

Requirements:
- Ability to work both independently and collaboratively.
- Basic knowledge of microbiology, fermentation, analytical laboratory techniques, and data analysis.
- Proficiency in English for scientific reading and writing.
- Scientific publications in indexed journals (preferred).

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

How to apply:

Candidates must send an email with the documentation required in the main call to **ppgbi@eel.usp.br**, with a copy to **iroberto@usp.br**. The subject line must read: **"Scholarship Application – PPGBI Call 03/2025 – Attachment III."**

The interview will be scheduled by the supervising professor via the email provided by the candidate and will take place between December 8 and 12, 2025.

ATTACHMENT IV (2 positions)

The scholarship holders will be selected to develop the project entitled: **"Valorization of carbonaceous by-products and bioactive compounds from sugarcane bagasse through integrated strategies for alcoholic fermentation and agricultural biostimulation,"** associated with the FAPESP Thematic Grant **2023/09789-8**, titled **"Decarbonization of transportation for societal benefit: enhancing sustainability through the integration of biochemical and thermochemical routes for complete biomass utilization."**

Project objective and summary: This project aims to develop and apply carbonaceous fractions (biochar and hydrochar) and bioactive compounds derived from sugarcane bagasse (lignin derivatives), targeting both the intensification of fermentative processes and the formulation of sustainable agricultural bioinputs. In the first research line, the master's student will focus on alcoholic fermentation, evaluating the effects of additives on yield, productivity, and cell tolerance, investigating the physicochemical and microbiological mechanisms that influence fermentative efficiency, and optimizing application conditions for the intensification of biotechnological processes. In the second research line, the master's student will work with seed germination and early plant development, investigating the potential of biochar and surfactants derived from sugarcane bagasse as biostimulants, evaluating seedling growth and vigor parameters, and correlating them with the physicochemical and structural characteristics of the applied materials. The overall goal is to contribute to the development of sustainable agricultural inputs.

Research areas: Pretreatments, 2G Ethanol, Agroindustry, Bioprocesses.

Principal Investigator: Prof. Silvio Silvério da Silva

Requirements:
- Ability to work independently and collaboratively within multidisciplinary research group.
- Proficiency in English for reading, writing, and conversation.
- Scientific publications in indexed journals (preferred).

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

How to apply:

Candidates must send an email with the documentation required in the main call to **ppgbi@eel.usp.br**, with a copy to **silviosilverio@usp.br**. The subject line must read: **"Scholarship Application – PPGBI Call 03/2025 – Attachment IV."**

The interview will be scheduled by the supervising professor via the email provided by the candidate and will take place between December 8 and 12, 2025.