



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO
Programa de Pós-Graduação em Engenharia Química - PósENQ
CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE
CEP: 88040-900 - FLORIANÓPOLIS - SC
TELEFONE (48) 3721-2501
Email: posenq@contato.ufsc.br | <https://posenq.posgrad.ufsc.br/>

CALL 3/PósENQ/2023



The Coordination of the Graduate Program in Chemical Engineering (PósENQ) at the Federal University of Santa Catarina, in the exercise of its legal powers, hereby announces the Call for Applications for the filling of positions in the Master's and Doctoral courses in the Field of Study of Chemical and Biotechnological Process Development for the first academic quarter of 2024.

1. SELECTION PROCESS TIMELINE

1.1 All stages of the Selection Process will be conducted online, as per the schedule below:

EVENT	PERIOD
Publication of the Call for Applications	24/10/2023
Application Period	24/10/2023 to 22/01/2024
Publication of Accepted Applications and Allocation of Affirmative Action Slots	29/01/2024
Preliminary Score Announcement	05/02/2024
Deadline for Preliminary Score Appeals	05 to 08/02/2024
Publication of the Final Results	09/02/2024
Enrollment	14 to 23/02/2024
Start of Classes	26/02/2024

1.2 All information related to this Call for Applications will be published on a specific page of the PósENQ: <https://posenq.paginas.ufsc.br/processo-seletivo/edital-de-processo-seletivo-2024-i/>.

2. NUMBER OF VACANCIES AND OFFERED TOPICS

2.1 The Program offers 21 positions for the Master's degree and 23 positions for the Doctorate associated with the Study Topics, as follows:



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO
Programa de Pós-Graduação em Engenharia Química - PósENQ
CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE
CEP: 88040-900 - FLORIANÓPOLIS - SC
TELEFONE (48) 3721-2501
Email: posenq@contato.ufsc.br | <https://posenq.posgrad.ufsc.br/>

2.2 MASTER'S DEGREE

Study Topic / Advisor	Vacancies
*Process Intensification Applied to Produced Water Treatment Advisor: Adriano da Silva (adriano.silva@ufsc.br)	2
Solid Processing Engineering and Particulate Systems Advisor: Agenor De Noni Junior (agenor.junior@ufsc.br)	1
Production of Natural Dyes as a Sustainable Alternative for the Cosmetic, Food, and Textile Industries Advisor: Ana Paula Serafini Immich Boemo (ana.immich@ufsc.br)	2
Flotation Processes in Produced Water Treatment: Numerical Simulation and Experimental Validation Advisor: Bruno Francisco Oechsler (b.oechsler@ufsc.br)	1
Assessment of Alternative Electrodes for Bioelectrochemical Systems Advisor: Camila Michels (camila.michels@ufsc.br)	1
Development of Membranes with Biodegradable Polymers for Water Recovery through Membrane Distillation Advisor: Cintia Marangoni (cintia.marangoni@ufsc.br)	1
Modeling and Simulation of Chemical Processes Advisor: Cíntia Soares (cintia.soares@ufsc.br)	1
Sustainable Polymerization Processes Advisor: Claudia Sayer (claudia.sayer@ufsc.br)	1
Production and Application of Biosurfactants Advisor: Cristiano José de Andrade (cristiano.andrade@ufsc.br)	1
Sustainable Processes and Products Advisor: Dachamir Hotza (d.hotza@ufsc.br)	1
Biotechnological Processes in the Chemical Industry Advisor: Débora de Oliveira (debora.oliveira@ufsc.br)	1
Synthesis and Characterization of Nanostructured Materials for Agricultural Applications Advisor: Humberto Gracher Riella (humberto.riella@ufsc.br)	1
Synthesis of Crystals and Co-crystals for Application in Neurodegenerative Diseases and Psychiatric Disorders Advisor: José Vladimir de Oliveira (jose.vladimir@ufsc.br)	1
Development and Simulation of Catalytic Systems for Syngas Production Advisor: Marinho Bastos Quadri (marinho.quadri@ufsc.br)	2
Computational Fluid Dynamics Applied to Chemical Processes Advisor: Natan Padoin (natan.padoin@ufsc.br)	1
Separation of Bioproducts in Membrane Processes Advisor: Pedro Henrique Hermes de Araújo (pedro.h.araujo@ufsc.br)	1
Wastewater Treatment through Separation and Advanced Oxidation Processes Advisor: Regina de Fátima Peralta Muniz Moreira (regina.moreira@ufsc.br)	1
Development of Materials and Processes Focused on Effluent Treatment and/or Energy Generation Advisor: Sergio Yesid Gómez González (sergio.gomez@ufsc.br)	1

* Research Project Scholarships under the Advisor's supervision.



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO
Programa de Pós-Graduação em Engenharia Química - PósENQ
CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE
CEP: 88040-900 - FLORIANÓPOLIS - SC
TELEFONE (48) 3721-2501
Email: poseng@contato.ufsc.br | <https://poseng.posgrad.ufsc.br/>

2.3 DOCTORATE

Study Topic / Advisor	Vacancies
*Application of Oxidative Processes in the Removal of Dissolved Organic Compounds in Produced Water Advisor: Adriano da Silva (adriano.silva@ufsc.br)	1
Simulation of Gas-Phase Chemical Species Dispersion in Silos Advisor: Agenor De Noni Junior (agenor.junior@ufsc.br)	1
Development of Biological Substitutes for Tissue Repair (Epithelial and Osseous Tissue Regeneration) Advisor: Ana Paula Serafini Immich Boemo (ana.immich@ufsc.br)	2
Reactor Intensification for Biogas Processing: Numerical Simulation and Experimental Validation Advisor: Bruno Francisco Oechsler (b.oechsler@ufsc.br)	2
Degradation of Micropollutants through Bioprocesses Advisor: Camila Michels (camila.michels@grad.ufsc.br)	1
Membrane Functionalization for Filter Applications Advisor: Cintia Marangoni (cintia.marangoni@ufsc.br)	1
Process Intensification for CO₂ Capture or High-Value Compound Synthesis: Numerical and/or Experimental Study Advisor: Cíntia Soares (cintia.soares@ufsc.br)	2
Sustainable Polymerization Processes Advisor: Claudia Sayer (claudia.sayer@ufsc.br)	1
Production and Application of Peptides Advisor: Cristiano José de Andrade (cristiano.andrade@ufsc.br)	1
Sustainable Processes and Products Advisor: Dachamir Hotza (d.hotza@ufsc.br)	1
Biotechnological Processes in the Chemical Industry Advisor: Débora de Oliveira (debora.oliveira@ufsc.br)	1
Green Hydrogen Production from Industrial Wastewater via Electrochemical Conversion Advisor: Hugo Moreira Soares (hugo.moreira.soares@ufsc.br)	1
Development of Environmentally Friendly Multifunctional Materials Advisor: Humberto Gracher Riella (humberto.riella@ufsc.br)	1
Synthesis of Crystals and Co-crystals and their Application in Neurodegenerative Diseases and Psychiatric Disorders Advisor: José Vladimir de Oliveira (jose.vladimir@ufsc.br)	1
Phenomenological Analysis and Simulation of Issues Related to the Ceramic Industry in the State of Santa Catarina Advisor: Marinho Bastos Quadri (marinho.quadri@ufsc.br)	2
Computational Fluid Dynamics Applied to Chemical Processes Advisor: Natan Padoin (natan.padoin@ufsc.br)	1
Recycling and Upcycling of Polymers Advisor: Pedro Henrique Hermes de Araújo (pedro.h.araujo@ufsc.br)	1
*Wastewater Treatment through Separation and Advanced Oxidation Processes Advisor: Regina de Fátima Peralta Muniz Moreira (regina.moreira@ufsc.br)	1
Development of Materials and Processes Targeted at Wastewater Treatment and/or Energy Generation Advisor: Sergio Yesid Gómez González (sergio.gomez@ufsc.br)	1

* Research Project Scholarships under the Advisor's supervision.



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO
Programa de Pós-Graduação em Engenharia Química - PósENQ
CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE
CEP: 88040-900 - FLORIANÓPOLIS - SC
TELEFONE (48) 3721-2501
Email: poseng@contato.ufsc.br | <https://poseng.posgrad.ufsc.br/>

2.4 Candidate approval in this selection process does not guarantee the award of scholarships provided by funding agencies (e.g., CAPES, CNPq, FAPESC) or specific projects. The forecast of available scholarships can be checked on the Call for Applications page (Item 1.2), and the release of these scholarships depends on the funding agencies.

3. APPLICATION IN THE SELECTION PROCESS

3.1 To apply, the candidate must:

- a) Complete the Registration Form, available at the following link: <http://inscricao.ppgeng.ufsc.br>;
- b) Fill out, in the specific field of the Registration Form, a Study Plan without identifying the candidate (with a maximum of 5,000 characters) containing, MANDATORILY, in a clear manner:
 - (i) **the title of the selected research topic of interest from among the topics offered by the Advisors** and listed in Item 2 of this Call for Applications;
 - (ii) reasons for the intention to pursue postgraduate studies in the selected topic;
 - (iii) a brief account of academic and professional experiences, with an emphasis on the projects and research in which the candidate has participated; and
 - (iv) a research proposal on the selected topic.

Each candidate can apply for up to 3 (three) topics, and for each topic, they should submit a specific Study Plan. The Study Plan aims to contribute to the selection of candidates and may be subject to changes when determining the subject of the dissertation or thesis, which will be done in mutual agreement with the advising faculty member.

- c) Attach to the Registration Form, in (.pdf) or (.zip) format, with a maximum size of 5 MB, the following documents:
 - (i) A scanned copy of the identity card and CPF (Brazilian taxpayer identification number) or driver's license. In the case of foreign candidates, a passport.
 - (ii) A scanned copy of the bachelor's degree diploma or a document confirming that the candidate is able to complete the undergraduate program by the enrollment period.
 - (iii) A scanned copy of the Master's degree diploma or a document confirming that the candidate is able to complete the Master's program by the enrollment period (only for Ph.D. candidates).
 - (iv) Academic transcript for the undergraduate program.
 - (v) Academic transcript for the Master's program (only for Ph.D. candidates).
 - (vi) Updated Curriculum Vitae in the LATTES format (www.cnpq.br). Foreign candidates may submit a curriculum in a free format.
 - (vii) Proof of participation in scientific initiation with specification of the period (if applicable).
 - (viii) Documentation of intellectual production (only the first page of scientific articles, patents, books, book chapters, and papers published in scientific events).
- d) For candidates applying for affirmative action quotas at UFSC, please attach the additional documentation outlined in sections 5.3 and 5.5.
- e) Obtain two reference letters that should be signed, scanned, and sent to the email



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO
Programa de Pós-Graduação em Engenharia Química - PósENQ
CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE
CEP: 88040-900 - FLORIANÓPOLIS - SC
TELEFONE (48) 3721-2501
Email: posenq@contato.ufsc.br | <https://posenq.posgrad.ufsc.br/>

address inscricoes.ppgenq@contato.ufsc.br by the application deadline. It is mandatory that the reference letters are sent directly from the original email address of the recommender. The reference letter form is available at the following link: <https://posenq.paginas.ufsc.br/processo-seletivo/edital-de-processo-seletivo-2024-i/> on the page of this call for applications.

- 3.2 After registration, each candidate will receive an identification number, which will be used for blind internal evaluation and for the publication of preliminary score results.
- 3.2.1 If the candidate submits multiple applications, only the last application submitted will be valid.

4. VALIDATION OF APPLICATIONS

- 4.1 Candidates who submit the required documentation in full within the deadline specified in Item 1 of this Call for Applications will have their applications validated by the Selection Committee.

5. AFFIRMATIVE ACTION POLICY

- 5.1 The reservation of positions for candidates with disabilities and candidates who are Black, Brown, and Indigenous is in accordance with Resolution No. 145/2020 of the University Council, which regulates the affirmative action policy of UFSC for postgraduate courses.
- 5.1.1 Candidates who wish to compete for positions reserved for candidates with disabilities and/or positions reserved for Black, Brown, and Indigenous candidates must make their choice on the Registration Form.
- 5.2 Of the positions available in each course (Master's and Ph.D.) associated with the study topics, as presented in Item 2 of this call for applications, 8% will be preferably allocated to candidates with disabilities, and 20% will be preferably allocated to Black, Brown, and Indigenous candidates.
- 5.2.1 The reservation of positions to meet UFSC's affirmative action policy will be conducted through a public lottery organized by PósENQ on the date of the validation of applications.
- 5.3 Candidates who choose to compete for positions reserved for Black, Brown, and Indigenous individuals must present phenotypic characteristics of the ethnic group and attach a self-declaration of their ethnic-racial condition at the time of registration.
- 5.3.1 Indigenous candidates should also attach a declaration of belonging to an indigenous group at the time of registration.
- 5.3.2 The phenotypic characteristics of self-declared Black and Brown candidates will be validated by the Heteroidentification Committee of the UFSC Technological Center.
- 5.3.3 The phenotypic characteristics of self-declared Indigenous candidates will be validated by the Selection Committee of PósENQ.



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO
Programa de Pós-Graduação em Engenharia Química - PósENQ
CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE
CEP: 88040-900 - FLORIANÓPOLIS - SC
TELEFONE (48) 3721-2501
Email: poseng@contato.ufsc.br | <https://poseng.posgrad.ufsc.br/>

5.3.4 The date and time of the heteroidentification procedure will be established and published by PósENQ on its institutional page and communicated to the candidate via email with a notice of 3 (three) business days in advance.

5.4 A person with a disability is considered to be someone who has a long-term impairment of a physical, mental, intellectual, or sensory nature, which, in interaction with one or more barriers, may obstruct their full and effective participation in society on equal terms with those other people (article 2 of Law no. 13,146/2015).

5.4.1 The type of disability must fall within the categories indicated in article 4 of Decree no. 3,298/99 or in § 2 of article 1 of Law no. 2,764/2012.

5.5 Candidates applying for vacancies provided for people with disabilities must provide, at the time of registration, a medical report issued in the last 12 (twelve) months, signed by a doctor specialized in the area of the disability alleged by the candidate, containing the degree or level of disability, the code corresponding to the International Classification of Disease (ICD) and a doctor's opinion containing the specific needs, considering the peculiarities of the disability.

5.5.1 For candidates with hearing impairment, hearing impairment tests (tonal and vocal) and immittance testing, carried out in the last 12 (twelve) months, must also be submitted.

5.5.2 Candidates with visual impairment must also submit an ophthalmological examination including visual acuity, carried out in the last 12 (twelve) months.

5.5.3 Medical reports and examinations must have a legible name and signature of the professional.

6. SELECTION COMMITTEE

6.1 The Selection Committee, responsible for the process of selecting candidates for the Master's and Doctorate, is made up of 7 (seven) professors and 1 (one) student representative from the Postgraduate Program in Chemical Engineering at UFSC, appointed by the Coordination of the Program, as stated in: <https://poseng.posgrad.ufsc.br/programa/comissoes/comissao-de-selecao-e-bolsas/>.

7. SELECTION CRITERIA

7.1 The items to be evaluated, with their respective weights, are presented in the following table.



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO
Programa de Pós-Graduação em Engenharia Química - PósENQ
 CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE
 CEP: 88040-900 - FLORIANÓPOLIS - SC
 TELEFONE (48) 3721-2501
 Email: poseng@contato.ufsc.br | <https://poseng.posgrad.ufsc.br/>

Item (I)	Description	Interval	Score Calculation
1	Weighted overall average (GPA) of undergraduate course grades (base 10); and affinity between the undergraduate course and the chemical engineering course (λ).	0.0 - 2.0	$I_1 = 0.2 \cdot \lambda \cdot GPA$ $0 \leq GPA \leq 10$ $\lambda = 1.0 \text{ for chemical engineering;}$ $\lambda = 0.8 \text{ for chemistry and other engineering;}$ $\lambda = 0.6 \text{ for exact sciences and technologies;}$ $\lambda = 0.3 \text{ for other courses.}$
2	Concept of the undergraduate course in the National Student Performance Exam (ENADE). <i>Non evaluated courses will be given 2.0.</i>	0.0 - 1.0	$I_2 = \frac{ENADE}{5}$
3	Number of academic semesters as a scholarship holder or volunteer for Scientific and Technological Initiation (nIC). <i>The score is saturated after 5 semesters and does not include monitoring or internship activities.</i>	0.0 - 1.0	$I_3 = 0.2 \cdot nIC$
4	<p>Number of publications in the categories patents and books (nP1), articles in journals (nP2), book chapters (nP3) and works published in scientific events (nP4).</p> <p>Up to 3 (three) publications will be considered for scoring for each category.</p> <p>The journal articles category is divided into 3 subcategories according to the journal's impact factor (IF)* according to the JCR classification:</p> <p>nP2a for the number of articles with $FI > 1.0$; nP2b for the number of articles with $0.5 < FI < 1.0$; nP2c for the number of articles with $FI < 0.5$ or without FI.</p> <p>Publications in journals in which the candidate is not the first author will have their score divided by 2.</p>	0.0 - 3.0	$I_4 = P1 + P2 + P3 + P4$ $I_4 \leq 3$ <p>where:</p> $P1 = 0.5 \cdot nP1$ $nP1 \leq 3$ $P2 = \sum_{i=1}^{nP2a} \frac{1.0}{k} + \sum_{i=1}^{nP2b} \frac{0.5}{k} + \sum_{i=1}^{nP2c} \frac{0.2}{k}$ $k = 1 \text{ (for first author) ou } k = 2$ $nP2a + nP2b + nP2c \leq 3$ $P3 = 0.2 \cdot nP3$ $nP3 \leq 3$ $P4 = 0.1 \cdot nP4$ $nP4 \leq 3$
5	CAPES Concept of the Postgraduate Program where the Master's degree was carried out.	0.0 - 1.0	$I_5 = \frac{Concept_CAPES}{7}$
6	<p>Study Plan (maximum 6000 characters) containing:</p> <p>(a) title of the chosen study topic; (b) reasons that motivated you to undertake postgraduate studies in the chosen topic; (c) brief report of academic and professional experiences, highlighting the research projects in which he participated; It is (d) research proposal you wish to carry out based on the chosen topic.</p>	0.0 - 2.0	$0 \leq I_6 \leq 2$ <p><i>The study plan will be evaluated "blindly" by a PósENQ professor and must not include the name or identification of the candidate.</i></p>

(*) A file will be available on the Notice page with a list of journals and their Impact Factors (IF) according to the Journal Citation Reports (JCR) classification.



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO

Programa de Pós-Graduação em Engenharia Química - PósENQ

CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE

CEP: 88040-900 - FLORIANÓPOLIS - SC

TELEFONE (48) 3721-2501

Email: posenq@contato.ufsc.br | <https://posenq.posgrad.ufsc.br/>

7.2 The final score (PF) will be the sum of all items evaluated:

$$PF = \sum_{i=1}^6 P_i$$

7.3 Candidates will be ranked by final score (PF) in each Study Topic.

- 7.3.1 In the event of a tie, preference will be given to the candidate who obtains the highest score in assessment item 4 and, if necessary, in assessment items 6, 1, 2, 3 and 5, successively.
- 7.3.2 Candidates who obtain a final score lower than 3.50 (three point fifty) for the Master's degree and 4.50 (four point fifty) for the Doctorate will not be classified.

8. RESULT

8.1 The preliminary score obtained will be published according to the schedule (Item 1.1) associated with the candidate's identification number on the Call page (Item 1.2).

8.2 The request for reconsideration of the preliminary score must be duly substantiated and sent to email inscricoes.ppgenq@contato.ufsc.br, according to the schedule set out in Item 1.1.

8.3 The final score result will be published on the Notice page, as well as the ranking order of candidates.

8.3.1 The classification of successful candidates will be done in descending order of the candidates' final scores by Study Topic.

8.4 Those candidates will be selected who, in descending order of classification, fill the number of vacancies offered by study topic, under the terms set out in Item 2 of this Notice.

8.4.1 Vacancies allocated by lottery to the Affirmative Action Program will be filled preferentially by candidates who choose to participate in this Program.

8.5 If selected candidates withdraw, other approved candidates may be called to fill the remaining vacancies, respecting the order of classification by study topic and the option for the Affirmative Action Program.

9. REGISTRATION

9.1 The candidate selected in the selection process referred to in this Notice must register within the period defined in Item 1 exclusively by email (posenq@contato.ufsc.br, with the subject "Registration"). The original documentation, referring to the documents attached at the registration stage, must be presented for verification as soon as face-to-face activities resume.



SERVIÇO PÚBLICO FEDERAL
UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO TECNOLÓGICO

Programa de Pós-Graduação em Engenharia Química - PósENQ

CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA - TRINDADE

CEP: 88040-900 - FLORIANÓPOLIS - SC

TELEFONE (48) 3721-2501

Email: posenq@contato.ufsc.br | <https://posenq.posgrad.ufsc.br/>

- 9.2 The candidate who presented, during the registration period, a document proving the projected completion of an undergraduate or master's degree (in the case of applying for a doctorate), must submit, by the beginning of the 1st quarter of 2024, a document proving the completion of the undergraduate course (copy of the undergraduate diploma or declaration of course completion, stating the date of graduation or master's degree defense, in the case of applying for a doctorate).
- 9.3 Other specific documents may be requested at the time of registration to comply with Brazilian legislation.
- 9.4 The qualified candidate who does not enroll within the period established in Item 1.1 of this Call will lose the right to a place and will be considered formally withdrawn.

10. FINAL DISPOSITIONS

- 10.1 This selection process will be valid until the release of the next PósENQ Selection Call.
- 10.1.1 If there are possibilities of new vacancies during the validity period of this selection process, classified candidates may be selected, following the order of classification within the Study Topic, and respecting the UFSC affirmative action legislation.
- 10.2 Omitted cases will be resolved by the Selection Committee.

Florianópolis (SC), October 24, 2023.

Prof. Dr. Débora de Oliveira
Coordinator of the Postgraduate
Program in Chemical Engineering

Prof. Dr. Dachamir Hotza
Subcoordinator of the Postgraduate
Program in Chemical Engineering