

Lead institution: University of São Paulo	
Supervisor name: Prof. Julio Meneghini and Prof. Spencer Sherwin	Department: Mechanical Engineering and Aeronautics, respectively
Recipient: https://sites.usp.br/rcgi/opportunities/ Ref: 24PhD310 – Direct PhD Scholarship Deadline for submission: December 20th, 2024	Type: Full time, Doctorate (PhD) Period: Fixed, 20 months Number of months: 20 Intended beginning date: January, 2025
Project title: (Portuguese and English) Doutorado Direto em Método de Elementos Finitos de Alta Ordem Aplicado a Processos Multifísicos Direct PhD scholarship in High-Order (HP) Finite Element Method Applied to Multiphysics Processes	
Research theme area: (Portuguese and English) Método de Elementos Finitos de Alta Ordem; Modelagem Numérica; Processos Multifísicos. High-Order (HP) Finite Element Method; Numerical Modelling; Multiphysics Processes.	
Abstract (Portuguese and English) É com grande satisfação que apresentamos uma oportunidade de doutorado direto que se encontra na vanguarda da inovação em energia. O candidato selecionado trabalhará em conjunto com renomados professores da Universidade de São Paulo (USP) e do Imperial College London no projeto SPEC-FAPESP, intitulado "Da Ciência Fundamental à Tecnologia Aplicada: Novas Fronteiras em Tecnologias de Células a Combustível". Este projeto faz parte do Centro de Pesquisa FAPESP-Shell para Inovação em Gases de Efeito Estufa (RCGI) na POLI-USP, esta iniciativa vislumbra transformar a tecnologia de células a combustível. Detalhes abrangentes sobre o programa e os projetos podem ser acessados no site do RCGI (https://sites.usp.br/rcgi/). O candidato selecionado terá uma oportunidade única de contribuir para o desenvolvimento de modelagem numérica de ponta de processos multiphysics através do método de elementos finitos de alta ordem (hp), que foi originalmente criado pelo Prof. Spencer Sherwin, quem será o co-orientador do candidato de doutorado selecionado. We are delighted to present a direct Ph.D. (straight forward from undergraduation (bachelor), without carrying/holding a Master degree) opportunity that stands at the forefront of energy innovation. The chosen candidate will work with distinguished faculty members from the University of São Paulo (USP) and Imperial College London on the groundbreaking SPEC-FAPESP project, titled "From Fundamental Science to Applied Technology: New Frontiers in Fuel Cell Technologies." Hosted by the FAPESP-Shell Research Centre for Greenhouse Gas Innovation (RCGI)	

at POLI-USP, this initiative promises to transform fuel cell technology. In-depth program and project details can be accessed on the RCGI website (<https://sites.usp.br/rcgi/>).

The selected candidate will have a unique opportunity to contribute to developing cutting-edge numerical modelling of multiphysics processes through the high-order (hp) finite element method, which was originally created by Prof. Spencer Sherwin, who is the co-advisor of the selected PhD candidate.

Description (Portuguese and English)

O candidato selecionado terá uma oportunidade única de contribuir para o desenvolvimento de modelagem numérica de ponta de processos multiphysics através do método de elementos finitos de alta ordem (hp), que foi originalmente criado pelo Prof. Spencer Sherwin, quem será o co-orientador do candidato de doutorado selecionado.

The selected candidate will have a unique opportunity to contribute to developing cutting-edge numerical modelling of multiphysics processes through the high-order (hp) finite element method, which was originally created by Prof. Spencer Sherwin, who is the co-advisor of the selected PhD candidate.

Requirements to fill the position. (Ex: specific experience, minimum or maximum years after concluding the course) (Portuguese and English)

Procuramos um candidato com vocação para pesquisa e familiarizado com modelagem numérica e dinâmica de fluidos computacional. Uma graduação em Engenharia ou áreas relacionadas é necessário, e proficiência em modelagem numérica e CFD é altamente vantajosa.

We seek a candidate driven by a passion for research and familiar with numerical modelling and computational fluid dynamics. A degree in Engineering or related fields is required, and proficiency in numerical modelling and CFD is highly advantageous.

Funding Notes: This doctorate scholarship is funded by FAPESP. The scholarship will cover a standard maintenance stipend per month for PhD (amount available at <https://fapesp.br/valores/bolsasnopais>).

Work place: Department of Mechanical Engineering-Poli USP and internship period at the Department of Aerospace Engineering – Imperial College London

Documents/Information to be Sent:

Ref: 24PhD310

- 1) Access the link <https://sites.usp.br/rcgi/opportunities/>
- 2) Find the Position **Ref: 24PhD310**
- 3) Click on Application to apply

Deadline: December 20th, 2024

In case you have any question, please write to rcgi.opportunities@usp.br