

<b>Lead institution:</b> University of São Paulo <b>Work Address of the position:</b> Av Professor Mello Moraes, 2231	
<b>Supervisor name:</b> Emilio Carlos Nelli Silva	<b>Department:</b> Mechatronic Engineering
<b>Co-supervisor (if any):</b> Guenther Krieger Filho	<b>Department:</b> Mechanic Engineering
<b>APPLY AT:</b> <a href="http://www.rcgi.poli.usp.br/opportunities">www.rcgi.poli.usp.br/opportunities</a> <a href="https://goo.gl/p4ifHx">https://goo.gl/p4ifHx</a>  <b>Position</b> <u>17PDR007</u>	<b>Type:</b> POS-DOC (40 hours weekly) <b>Duration:</b> 2 years <b>APPLICATION DEADLINE:</b> JULY, 31
<b>Project title: (Portuguese and English)</b>  <b>Development of Advanced Gas Systems</b>  <b>Pos doctoral fellowship REF <u>17PDR007</u></b>	
<b>Research theme area:</b> (Portuguese and English) Mechanical Engineering	
<b>Abstract (Portuguese and English)</b>  These 2 positions are expected to be developed in collaboration with researchers from the Engineering Programme of USP's Research Centre for Gas Innovation – RCGI (summary of the program and projects is found in the RCGI website at <a href="http://www.usp.br/rcgi">www.usp.br/rcgi</a> ).	
<b>Description</b>  ENGINEERING PROGRAMME RCGI includes projects that investigate the technological, scientific and market to a greater use of natural gas, biogas and hydrogen in the Brazilian energy mix and as fuel for transportation. It concerns the development of new-generation thermal power plants, problems involving the transportation and storage of natural gas, biogas and hydrogen, as well as key topics for the success of those gases as premium fuel for the 21st century.	
<b>Requirements to fill the position.</b>  The candidate must have expertise in <b>one or more of</b> the following areas: <ul style="list-style-type: none"> <li>- Computational simulations</li> <li>- Fluid dynamics</li> <li>- Finite element simulations</li> <li>- Topology optimization</li> <li>- Computer programming</li> <li>- Turbulent Combustion</li> <li>- Experimental skills with laser systems</li> <li>- Additive manufacturing</li> </ul>	

The position aims to work with research and development related to advanced gas systems. Depending on his expertise he will develop computational or experimental work. The computational work in fluid dynamics will involve implementation of finite element and topology optimization codes for the development of adsorbing gas storage systems and labyrinth seals. The experimental work will involve the investigation of turbulent combustion by using laser systems and advanced gas burners equipment aiming to design optimized shapes combustion chambers for gas turbines, industrial furnaces, large internal combustion engines, maritime propulsion systems, and power plant.

#### **Information about the FELLOWSHIP**

The selected candidate will receive a FAPESP Post-Doctoral fellowship in the amount of R\$ 6.819,30 monthly payed in Reais and a research contingency fund, equivalent to 15% of the annual value of the fellowship which should be spent on items directly related to the research activity, as well as displacement funding, if necessary and applicable. More information about the fellowship is at: [fapesp.br/en/postdoc](http://fapesp.br/en/postdoc).