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<b>Recipient:</b> TO BE APPOINTED	<b>Type:</b> Scientific Initiation (IC)
<b>Project title:</b> Flow field analysis of a Supersonic Gas Separator	
<b>Research theme area:</b> Computational fluid dynamics, Fluid Mechanics, Compressible Flow, Multiphase flow	
<p><b>Aims</b></p> <p>The aim of this Scientific Initiation position is to train a future post-graduate student (MSc or PhD) in flow field analysis of the flow in a Supersonic Gas Separator. The focus will be on the application of numerical methods to investigate such flow. The position will lead development of future optimized designs of Supersonic Gas Separators.</p>	
<p><b>Objectives</b></p> <p>The Research Centre for Gas Innovation (RCGI) at the University of São Paulo aims to undertake research and development into new applications of natural gas as well as synergies between gas and other emerging technologies. In order to fulfil these goals, gas separators have to be developed in order to allow the separation of different gases found in the multiphase components of the oil and gas produced at the pre-salt basin in Brazil.</p> <p>The primary objectives and roles of the position are to;</p> <ul style="list-style-type: none"> <li>- Introduce the student to numerical methods for flow simulation and mesh generation;</li> <li>- simulate the flow field in Supersonic Gas Separators employing commercial codes (e.g. Fluent or Comsol);</li> <li>- introduce the student to post-processing the result;</li> <li>- introduce the student to the use of super-computing;</li> <li>- Investigate the physics of this complex flow.</li> </ul> <p>This project would be well-suited to a highly motivated individual, who are an undergraduate student in Mechanical, Mechatronics, Naval, Chemical or Civil Engineering or in Physics. It is required an overall grade above 7.0. Special cases above 6.5/10.0 will be also considered. The student should be enrolled in the 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> or 8<sup>th</sup> Semester of his/her course.</p>	



Research Centre  
for Gas Innovation