

Lead institution: University of São Paulo (USP) – CEPEMA Work Address of the position: CEPEMA Rod Con Domenico Rangoni, km 270 City: Cubatão State: São Paulo Country: Brazil	
Supervisor name: Claudio A. Oller do Nascimento	Department: Chemical Engineering
e-mail: Phone:	Application deadline: July, 3
Co-supervisor (if any):	Department:
APPLY AT: www.rcgi.poli.usp.br/opportunities or https://goo.gl/p4ifHx Position 17PDR006	Type: Post-doctoral Period: start July, 2017 Number of months: 30
Project title: (Portuguese and English) - Position 17PDR006 Mitigação de CO ₂ e CH ₄ através do uso de consorcio microbiano (algas e bactérias) Mitigation of CO ₂ and CH ₄ using microbial consortium (algae and bacteria)	
Research theme area: (Portuguese and English) Processos biotecnológicos para conversão de CO ₂ e CH ₄ em bioprodutos Biotechnological processes for the conversion of CO ₂ and CH ₄ into bioproducts	
Abstract (Portuguese and English) Este projeto visa abordar desafios científicos e tecnológicos para o avanço na mitigação de componentes do gás natural (CO ₂ e CH ₄). Para tanto, um consórcio microbiano envolvendo algas e bactérias serão utilizados. Juntos, estes micro-organismos poderiam rapidamente metabolizar altas concentrações de CO ₂ e CH ₄ , transformando-os em bioprodutos valiosos. This project aims to approach scientific and technological challenges for the advancement in natural gas components mitigation (CO ₂ and CH ₄). Therefore, a microbial consortium involving algae and bacteria will be used. Together, these microorganisms could rapidly metabolize high concentrations of CO ₂ and CH ₄ , making them into valuable bioproducts.	
Description A pesquisa será dividida em: 1- isolamento dos micro-organismos, algas que tolerem altas concentrações de CO ₂ e bactérias que consumam o CH ₄ como fonte de carbono. 2- estabelecimento de concentrações limite de CO ₂ para determinadas espécies de microalgas; 3- estabelecimento de concentrações limite de CH ₄ para as bactérias isoladas; 4- a partir do sistema otimizado, estabelecer concentrações de CH ₄ que as microalgas identificadas possam crescer sem interferir nas condições pré-estabelecidas; 5-estabelecimento de um sistema de co-cultura de microalgas e bactérias metanotróficas para maximizar o consumo de CO ₂ e CH ₄ à produção de bioflocos e/ou biomoléculas; 6- identificação de proteínas envolvidas na formação de bioproduto. The research will be divided into: 1- isolation of microorganisms, algae that tolerate high concentrations of CO ₂ and bacteria that consume CH ₄ as a carbon source. 2 - establishment of CO ₂	

limit concentrations for certain microalgae species; 3 - establishment of CH₄ boundary concentrations for the isolated bacteria; 4- from the optimized system, to establish concentrations of CH₄ that the identified microalgae can grow without interfering in the pre-established conditions; 5-establishment of a co-culture system of microalgae and methanotrophic bacteria to maximize the consumption of CO₂ and CH₄ to the production of bioflocs and / or biomolecules; 6- identification of proteins involved in the formation of bioproducts.

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

The post-doc fellow will take part in the research of direct consumption of methane and CO₂. We seek a candidate with laboratory experience in the preparation, processing and characterization of bioprocesses. Expertise in isolation, identification and pure cell cultivation of microorganisms. The candidate is expected to have experience in microbiology and in different techniques such as development of bioprocesses, microorganism cultivation in column, mass spectrometry, microorganism identification, metagenomics, proteomics and chromatography. The candidate can have a maximum one year after concluding the Ph.D and it needs at least six months of experience outside Brazil.

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.

Fill in the application form (Position 17PDR006) at www.rcgi.poli.usp.br and submit before the deadline on July, 2, 2017