



## **Assignment internship background student Chemistry, Industrial Chemistry, Chemical Engineering, Environmental engineering, Pharmacy**

### **Living Lab Biobased Brazil**

The Living Lab Biobased Brazil is a transnational Living Lab in the field of Biobased Economy, created in 2014 by a consortium of Dutch Universities of Applied Sciences in collaboration with several Brazilian universities. The Living Lab helps students with internships and graduation projects in Brazil with the focus on Biobased Economy. We also help students finding accommodation, and offer buddy support, Portuguese classes, a bye-bye meeting and an introduction weekend in Brazil

In return the Living Lab expects you contribute to the Living Lab blog. You have to blog about your personal and internship experiences during your stay in Brazil. We also expect you to participate in the mini symposium at the end of each semester.

These events help you to increase your personal network and is focused on your personal development! For more information please visit <https://www.biobasedbrazil.org/student/brazil/>.

### **Company/University information:**

The Federal University of Ouro Preto (Portuguese: Universidade Federal de Ouro Preto, UFOP) was established in August 21, 1969 from the merger of two century-old higher education institutions: the School Pharmacy of Ouro Preto, founded in 1839, and School of Mines of Ouro Preto founded in 1876, both located in Ouro Preto, Minas Gerais. Today is one of the most important universities of Minas Gerais and also Brazil. The university is taken as a reference throughout the country by the School of Pharmacy and Engineering.

### **Research Project:**

Preparation and functionalization of pectin hydrogel for removal of arsenic and inorganic contaminants from drinking water.

### **General background:**

Nowadays, arsenic contamination of groundwater and soils has become a very important environmental problem and a health risk in many parts of the world. The consequences for human health of chronic arsenic exposure are diverse. In Ouro Preto, Brazilian City, high concentrations of arsenic were reported 10x over the limits established by Brazilian Legislation and contaminated water is used for consumption. Due to the abundance of biomass, low cost and high removal efficiency for most of the materials employed, a non-conventional process that has been well studied for the removal of contaminants is biosorption. This study aims to produce pectin hydrogel extracted from the passion fruit peel flour for the adsorption of arsenic in aqueous medium. Tests will be performed to optimize pectin extraction, beads production, and studies using synthetic samples to evaluate the adsorptive capacity and selectivity of the material.

### **Goal of internship:**

To train the intern in analysis using atomic absorption spectrometer, hydride generator and cold Vapor-Atomic Absorption Spectrophotometry.



**Activities:**

The Project involves:

- Optimize pectin extraction methodology using chemometrics;
- Validate the methodology of obtaining the beads and functionalization;
- Adsorption and desorption tests;
- Use the same system for adsorption and desorption (and possible speciation) of other inorganic contaminants.

**Starting date**

February 2019.

The intern will be part of a research team lead by the adviser and supervised by Roberta Eliane Santos Froes-Silva.

**Desirable skills/qualities of the student**

Proactivity and knowledge of analytical chemistry.

**Information of the company:**

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**Interested?**

Please send your CV and motivation letter to Erik Lammers (Coordinator Living Lab Biobased Brazil). For further questions you can contact: +316 101 83 092 or [ekf.lammers@avans.nl](mailto:ekf.lammers@avans.nl).

**PLEASE BE AWARE THAT THE PROCES SUBSCRIBE AT <https://www.biobasedbrazil.org/student/brazil/> APPLIES!**