Living Lab Biobased Brazil
Education Research Innovation

Assignment internship Chemistry

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 about the Living Lab Biobased Brazil program please see: www.biobasedbrazil.org.

University information: UFMG
The Universidade Federal de Minas Gerais (UFMG) offers public education to 35,000 students on the two main campus areas and several off-side units, all found in the city of Belo Horizonte. In total the university offers 76 undergraduate, 72 master and 62 PhD programs. Its programs covers all main education areas: social-, human- and basic sciences, among others.

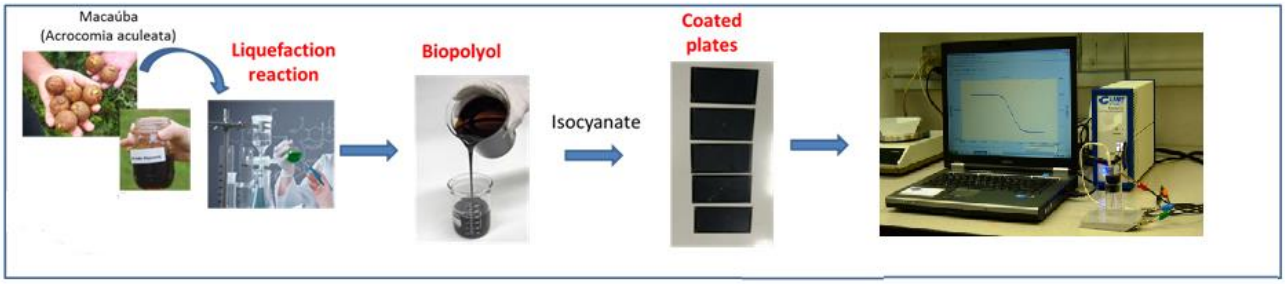
For more information please see the promotional YouTube video:
https://www.youtube.com/watch?v=fd-fdOe4Szw

Research project
Improvement and study of biopolyurethane coatings based on Macauba.

General background
Polyurethanes are versatile polymers that could be synthesized by various polyols and isocyanates. Nowadays, both polyols and isocyanates are largely petroleum derived but there have been extensive researches developing bio-based polyols and PUs from renewable resources.

This project is a continuation of an initial internship when we could synthesize polyurethane coatings based on Macauba. Now we have to improve these coatings studying properties like anticorrosive power.

The coatings will be characterized by Electrochemical Impedance Spectroscopy and immersion tests.



Goal of internship
The main objective is to improve Macauba-based polyurethane coatings by studying the anticorrosive properties of these materials that could be used commercially, adding value to biodiesel production.

Activities
The project supervisor will be professor Renata Costa Silva Araújo and the intern will be part of LEC – Laboratório de Combustíveis team, the research group on Biofuels and Biomaterials which is led by professor Vânya Márcia Duarte Pasa. The research group is part of the Chemistry Department at UFMG.

The project involves:

- The use of biomass residues of biodiesel production studies at LEC, as macaúba residue, crude glycerol, vegetable oils, etc to obtain a biopolyurethane coating;
- The liquefaction reaction parameters study, improving the biopolyol product;
- Analysis and tests to characterize anticorrosive applications for coatings.

Final product
The student will write a report that contains an overview of all activities and findings. In addition that the student will write a scientific paper with results of research.

Starting date
March 2019. The length of the assignment is approximately 5 months (20 weeks).
The intern will be part of a research team lead by the adviser and supervised by professor and possible PhD-students.

Desirable skills/qualities of the student
Good knowledge of the English (and preferably Portuguese) language is required.

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

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