

## 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 the Netherlands with the focus on Biobased Economy. We also help students finding accommodation, and offer buddy support and some events.

For more information please see [www.biobasedbrazil.org](http://www.biobasedbrazil.org) and [www.biobasedbrazil.org/student/the-netherlands/](http://www.biobasedbrazil.org/student/the-netherlands/) or ask the International Office of your university.

Zuyd University of Applied Sciences is officially not a partner of the Living Lab consortium. However, we expect Zuyd to become a partner, and therefore we are already offering this project. The admittance of Zuyd probably does not have any consequences for the fulfillment of this assignment.

### University of Applied Sciences information:

The universities of applied sciences (in Dutch: 'hogescholen') offer programs that focus on the practical application of arts and sciences.

Getting practical work experience through internships is an important part of the professional study programs offered at these institutions. The largest universities of applied sciences enroll 20,000 to 40,000 students. Altogether some 446,000 students are enrolled on professional programs. Universities of Applied Sciences have also research groups. These groups do applied research and they are so called professorships. This internship assignment is within one of the associate professorships.

### Zuyd University of Applied Sciences information:

Zuyd University of Applied Sciences is a gateway to knowledge. We offer inspiring and student-oriented learning environments. In our nationally and internationally focused study programmes we aim at quality and innovation. Our university plays an important role in the development of knowledge, art and culture in its surroundings - the Meuse-Rhine Euregion. We also do applied research and develop and disseminate expertise. We participate in social networks and actively contribute to cultural events. Zuyd University is a flexible organisation with a profound interest in people. We are creative in the production of innovative solutions and at the same time effective in pursuing measurable goals.

Around 13,500 students are enrolled at Zuyd University of Applied Sciences. Around 4,300 new students enrol every year. Around 50% of the students are aged between 21 and 25 years old. There are almost equal numbers of male and female students at Zuyd University.

Zuyd has 33 research centres. Associate professors, lecturers, and students carry out practically-oriented and socially-relevant research. They contributed to innovations and developments in the business sector and connect practice and education. Zuyd has defined three core points for its applied research. These core points contribute to regional development and were devised in close cooperation with the regional or Euregional government bodies, the business world, and educational institutions.



### **Main research topic and general background:**

Many innovations are dependent on materials. The wide variety of ways in which materials can be applied requires them to have a broad palette of characteristics. Plastics with suitable characteristics for specific applications can be produced with the correct design, synthesis, and processing of molecules. With the depletion of raw fossil fuels and the effects of emissions on the climate, there is increased pressure to produce materials in a more responsible and conscious way.

*The objective of the Research Centre is to facilitate sustainable innovation in polymer materials and linking innovation and education.*

These polymeric materials can be used for energy, construction, care, and health care applications. Through this research, the Research Centre supports the life science and materials focus point of Zuyd University of Applied Sciences and is a facilitator for the two other focus points: innovative care and technology and transition to a sustainable built environment.

Research assignments are conducted based on the three lines of research of the Research Centre:

- Sustainable Synthesis and Production
- Material Engineering
- Biobased Materials

Based on these research lines, the Research Centre focuses on the three technologies identified by the Top Sector Chemistry as key technologies for Nederland Kennisland in the field of sustainability.

- Micro Reactor Technology
- Nano Technology
- 3D Printing Materials

### **Goal of internship:**

In the framework of the research line there is a continuous need for motivated students to participate in several larger and smaller research and development projects. To mention a few:

- Sustainable synthesis and production (flow chemistry, both chemical engineering and synthesis)
- Nanostructured materials (for energy management)
- Solar Fuels (CO<sub>2</sub> valorisation)
- Polymer Processing (focus on 3D printing materials)
- Biomolecular diagnostics

All projects are conducted at by a project group consisting of students, researchers/lecturers and experiences professionals in the Chemelot Innovation and Learning Labs ([www.chillabs.nl](http://www.chillabs.nl)) situated at the Brightlands Chemelot Campus an international hotspot in Chemistry and Materials Research.

### **Activities:**

Depending on your interest and background (synthetic chemist, polymer chemist, chemical engineer, material science, analytical chemist, polymer chemist or mechanical engineer) you will participate in a R&D project as a starting professional in your field of expertise. Flanking courses, workshops and training in your field or another field of interest can be arranged. These trainings can range from communication or business to advanced chemistry and physics.



### **Final product**

The final products can be discussed with the supervisor but will at least contain a decent research report.

### **Starting date**

September 2019. The length of the assignment is approximately 5 months (20 weeks).

Daily supervision will depend on the actual project. The research centre is lead by Prof. Gino van Strijdonck. The student who will execute the assignment get a fee of €550,- per month.

### **Desirable skills/qualities of the student**

- The student should have a background in chemistry and be able to carry out independent laboratory research
- Good knowledge of the English language is required. We have set minimum language requirements for foreign students. The minimum English language prerequisite is: an academic IELTS test (or equivalent\*) with an overall band score of at least 6.0. As a foreign student you must provide evidence of your language competences in the form of an official certificate: IELTS, TOEFL, TOEIC or Cambridge ESOL. It is your responsibility to ensure that you meet these requirements.

### **Information of the company:**

Contact person concerning this assignment	: Guilherme de Souza Reis
Phone	: +316 51924343
E-mail	: <a href="mailto:ga.desouzareis1@avans.nl">ga.desouzareis1@avans.nl</a>
Visiting address	: Centre of Expertise Biobased Economy
Street / number, areal code and place	: Lovendijkstraat 63, Breda
Postal address	: 4800 RA
Website	: <a href="http://www.biobasedbrazil.org">www.biobasedbrazil.org</a>

### **Interested?**

To apply for a project or multiple projects, you need to complete the survey. The Living Lab Biobased Brazil strives to give you within 5 days. Applications outside this survey will be not processed. Keep in mind the application deadlines. We need to receive your application before 01/04. If you do not meet the given deadlines we cannot offer you any guarantees.

<https://fd7.formdesk.com/omnismart/projectsnl>

**PLEASE CONTACT FOR ADDITIONAL INFORMATION THE INTERNATIONAL OFFICE OF UFMG, UFV, UFSJ, UFOP OR PUC MINAS**