Internship Projects at Tractebel

SERVICE DE METROLOGIE NUCLEAIRE
NUCLEAR ENGINEERING

MASTER THESES

Academic year **2020-2021**

The nuclear department of Tractebel Engie has proposed several master theses and internships, the latter being possibly transformed into master thesis topics, a.o. because of the uncertainty on the organization of internships during the Covid crisis. Interested students can contact Mrs. Florence Dandoy florence.dandoy@tractebel.engie.com or Mr. Christophe Schneidesch christophe.schneidesch@tractebel.engie.com for further information.

Tractebel is looking for an intern for our business line Nuclear in the department of Nuclear Processes, and more precisely in the Nuclear Core & Fuel Studies subgroup.

Internship at Tractebel

Site: Brussels

The ENGIE Tractebel offices in Brussels are located next to the North station, making it easily accessible by public transportation.

Who is Tractebel?

Tractebel, part of Engie group, has more than 150 years of experience and is one of the world's largest engineering consultancy companies. Tractebel offers his clients multidisciplinary solutions in the fields of energy, nuclear, water and urban. Our teams are present in all the possible phases of a project, from the feasibility studies to the implementation.

You will work as intern for the business line Nuclear in the Nuclear Core & Fuel Studies group which is responsible for the fuel management of the Belgian Nuclear Fleet. The group perform calculations that span the entire spectrum of nuclear fuel applications, i.e. from the core reload design and the in-core thermal-hydraulics to studies for the spent fuel pools and spent fuel containers. Or as a figure says more than a 1000 words:

TRACTEBEL
ENGIE

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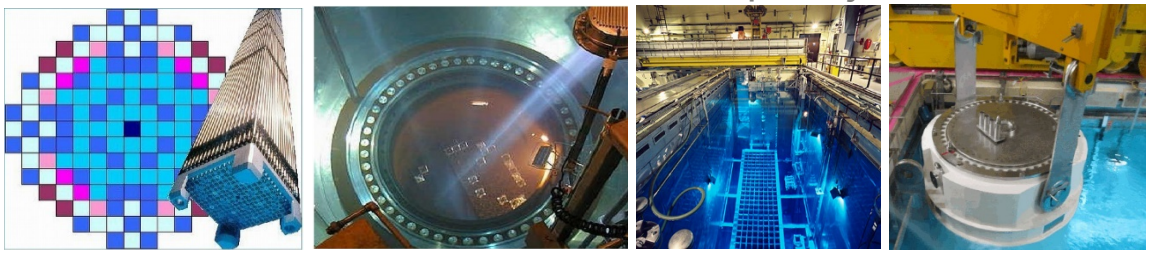

The studies in these domains require a large set of codes and tools, together with a validation database. To remain competitive, Tractebel continuously follows the evolutions of different other codes used in the domain, whilst upgrading the existing validation database.

How will your day look like?

We are looking for a motivated intern to develop high fidelity nuclear assembly data for deterministic 3D GUI core calculations using a Monte Carlo method. Such high fidelity nuclear assembly data is very useful as input data for the core reload calculations, especially when considering innovative type of fuels in complex geometries.

This involves that:

- You will develop knowledge on the generation of reaction rate data using the Monte Carlo transport methods.
- You will develop competences in the use of the SERPENT Monte Carlo software, a frequently used software package
- You will develop competences in the use of the PANTHER software, this is the standard UK Core Reload Analysis package

Who are we looking for?

- You are a studying physics or engineering with a sound basis of nuclear physics and nuclear reactor theory and you wish to get hand-on experience with an internship in an engineering company for at least 6 weeks. ***This subject can also be transformed in a Master Thesis.***
- Knowledge of Linux, Bash, Python, … is strongly recommended.
- You are fluent in English and know either Dutch or French
- You are curious and have an initiative mindset
- You appreciate teamwork
- You are well organized and possess a strong team spirit
- You are eligible for a nuclear security permit delivered by FANC as you'll be working with nuclear data.

What do we offer?

- An interesting and varied internship in an international environment with a good work-life balance, within a relatively young and dynamic team.

- Being able to work in an environment that allows you to strengthen your professional and technical skills
- The opportunity to work in a team of experienced and motivated professionals and to receive sufficient professional guidance

How to apply?

Do you think that Tractebel is the perfect fit for your internship?

Send us an e-mail to recruitment-engineering@tractebel.engie.com with your CV, motivation and indicate for which project you want to apply for.

We hope to see you soon !