

Internship: Cleaning Procedure via auto-ignition, coking and fouling prevention

Internship assignment description

When working with waste as feedstock for our pyrolysis process, the output of the process are gas, ash and oil. This is made through the use of the pyrolysis, a thermochemical treatment which depolymerizes end-of-life plastics into their constituent monomers, thus turning plastics back into a liquid mixture of hydrocarbons, a non-condensable part being the pyrolytic gas as well as a solid residue resulting from the high temperature slow residence time pyrolytic operation. The pyrolysis system generating these outputs, in the current situation of the company (a demonstration plant generating a relatively low amount of terms of ash, oil and gas), as well as for the future commercial scale plant (processing 35 kilotons of plastics waste per year), needs a cleaning procedure to be implemented in order to get rid of residual material from the pyrolytic reactor as well as for reducing or eliminating fouling and coking in the pyrolysis system.

Graduation tasks:

- Researching about auto-ignition of the different components likely present in the reactor after running tests, such as residual heavy fraction, and other hydrocarbon components.
- Setting up and design phase of an auto-ignition module for the cleaning of the pyrolysis reactor after plastics have been processed, based on the following:
 - Controlled air supply module for consequent controlled combustion internal to the system
 - Safety control procedure for preventing any hazard from the system
 - Auto-ignition analysis of the different components (such as heavy oil fraction, residual ash, and other components) in order to better predict sufficiently high temperature

About Waste4ME BV

The company Waste4ME positions itself at the intersection of different industries. Waste4ME is pioneering the plastic recycling industry by giving previously incinerated plastic waste a second life. Our company turns a global environmental problem into low-carbon products and valuable petrochemical products. Our solution also allows implementing sustainable waste disposal techniques and bridge intermittent energy supply in remote locations. WER unit (waste reducer energy generator) is a mobile waste management tool based on pyrolysis technology. It is designed for tackling waste, where recycling is not feasible and where waste disposal is an issue. Thanks to its mobile nature, WER allows to avoid transport costs, electricity cost, gas boiler cost and gas for a boiler.

Working at Waste4ME

As you gain knowledge and experience in different sectors you can grow within the company. Our team mentality is straightforward and product oriented. You have the freedom to plan your work and set your own milestones in line with the company goals. Additionally, if you want to suggest a different topic and you think you can add value: make a proposal including milestones and catch our attention. We are a growing company and are looking for people with ideas and the mentality to execute selected ideas.

Position requirements

For the position are we looking for the following background:

- HBO-level thinking in the field of engineering, chemical engineering or process/mechanical engineering
- Knowledge of tools for performing basic mechanical jobs and maintenance
- English of sufficient level for communicating within the company in a clear manner

Good to have

For the practical execution of the work and filling in with the team do we have additional wishes that can give you a higher probability of being selected:

- Knowledge or experience of the waste sector
- Experience in setting up logical systems
- VCA certificate
- Forklift certificate
- Driver license

Reimbursement

Reimbursement is € 400 per month (excluding expenses) depending on candidate's qualifications.

Working Hours

40 hours per week (Negotiable)

Contact

If you are interested, send your application with cv and motivation or even better with your first idea how to approach to Valentin Contin at v.contin@waste4me.com or by phone on +31614321871 or Christiaan Huibregtse on c.a.huibregtse@waste4me.com or by phone on +31639136979.