

Universität Stuttgart

Institut für Feuerungs- und Kraftwerkstechnik
Prof. Dr. techn. G. Scheffknecht

Ausschreibung

**Student
Research**

Extended evaluation and validation of modified in-house Hardgrove Grindability Index (HGI) for biomass pellets.

Background

Biomass is gradually replacing coal-based fuel for energy production. However, the rate at which this transition is being realized is to a large extent hindered by underdeveloped global fuel quality control standards. Grindability of biomass pellets is one aspect greatly affected by non-uniformity of standards. Therefore, an existing standard procedure developed for the grindability of coal (Hardgrove Grindability Index HGI) has been modified to accommodate requirements for biomass fuels. The efforts will aid in the establishment of a global standard regarding biomass pellets grindability.

Process

More parametric studies (example: Particle diameter, brittleness, etc) of the grindability of different biomass pellets need to be conducted. Standard calibration curves are needed to project grindability characteristics onto different biomass. An improved database on different parametric studies will contribute to an ISO standard currently under consideration. Experimentation on reproducibility of certain test procedures are an utmost requirement.

Goals and required skills

1. Literature review on grindability test
2. Experimentation on different Biomass
3. Database organization
4. Results presentation



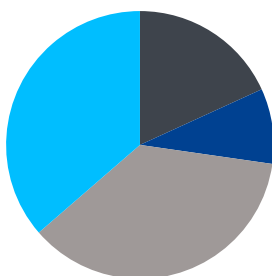
Biomass Pellets



HGI mill



Sieve



■ Literature ■ Theory
■ Experimentation ■ Practical work

Requirement

- Independent and self-reliance (a most)
- Methodical work (Excellent documentation)
- High interest for experimentation
- Excellent data analysis skills
- Excel skills (Matlab,Python- added advantages)
- Readiness to deal with solid fuels

Starting: As soon as possible!

Additionally, during your student research, **HIWI** position is a possibility.

Supervisors and Contacts:

M.Sc Abdou Suso

Abdou.Suso@ifk.uni-stuttgart.de

Tel. 0711/685 63761, Raum 1.59

M.Sc Alexander Mack
Dept. Combustion and power plant

Alexander.mack@ifk.uni-stuttgart.de

Tel. 0711/685 63391, Raum 1.79

Examiner: Prof. Dr. techn. G. Scheffknecht

IFK, Pfaffenwaldring 23, 70569 Stuttgart
www.ifk.uni-stuttgart.de/lehre/angebot/studentische-arbeiten/

