Job announcement Nr. 1-025

Master-thesis focusing:

“Green Revolution: Valorization of Essential Elements in the Bioeconomy”

Background:

Mankind’s massive use of fossil resources has had significant impacts on the ecological cycles of our planet. This interference has shifted established balances, generating environmental problems such as pollution, greenhouse events or water depletion. In the ***bioeconomy*** framework, the identification of new oil-independent routes and the development of sustainable processes are critical. Currently, this race against time for sustainability is focused on the management of ***life-essential elements*** as C, N, P and S, that are the most common components of fertilizers used in agriculture and can be found in multiple residual streams. In this sense, ***thermochemical technologies*** such as pyrolysis have been demonstrating their effectivity concentrating those elements into biochar, allowing the ***valorisation of side streams*** rich in those elements as a bioeconomy added-value product. This biochar has been scientifically proven as a C sink through the long-term deposition of biochar in the soil. Furthermore, positive effects on soil fertility in terms of water and nutrient balance has been resulted. However, other applications such as supercapacitors, activated carbon and filler for climate-neutral construction material could be identified.

Job description:

The master thesis consists of literature research to clarify the decisive question how pyrolysis parameters effect N and P concentrations in biochar. This provides a knowledge base for experiments later. You should be trained in handling standard software from Microsoft Office. Furthermore, properties like social competence and independence are desired.

When you are going to supply a fundamental contribution for development of a sustainable, chemical use of renewable resources, please apply online by sending your CV and an overview of your marks. We will contact you promptly. If you have questions please do not hesitate to contact us.

Important information:

Field of studies:	Agricultural Science, Chemistry, Material Science, Conversion Technologies
Institute:	University of Hohenheim, Institute for Agrilcultural Engineering, Chair of Conversion Technologies of Renewable Resources
Duration of contract:	≥ 6 months; depending on regulations
Date of joining:	as of now
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