



Master fellowship at the Pollution Research Group, University of KwaZulu-Natal (Durban, South Africa), about the development of a pilot-scale solar dryer

Onsite sanitation is employed in places of the planet that are not connected to the sewage system and it could contribute to solve the lack of sanitation in developing countries that affects 2.4 billion of people worldwide, as well as it could offer a more water sensitive alternative for the cities of the future. Faecal sludge, the resulting waste from onsite sanitation facilities, needs to be treated and disposed in a safe way. Thermal drying is an effective method that can ensure to obtain a dry and pasteurised bio-solid, which can be safely reused as agricultural product or biofuel. Nonetheless, it requires of the input of high amount of heat for the evaporation of the moisture, leading to high operating costs. The use of solar thermal energy could be a cost-effective to provide heat to the drying process through a renewable and environmental friendly source of energy.

The Pollution Research Group at the University of KwaZulu-Natal (Durban, South Africa) has received funding from the Water Research Commission in order to develop a pilot-scale solar dryer. The developed prototype is intended to offer to sanitation practitioners a cost-effective, decentralized and mobile technological solution for the treatment of faecal sludge. The functionality and performance of the pilot solar dryer will be evaluated through field testing in one of the waste treatment facilities from the eThekwin Municipality using locally available faecal sludge.

The Pollution Research Group is searching for a Master student under the context of this project. The Master student will participate in the design, conception and evaluation phases of the solar dryer. The position is to start from February 2020. A bursary of R150,000 will be offered in a period of 15 months, with the payment done in different parts following set deliverables. The candidate should fulfil the following requirements:

- Academic background in mechanical engineering;
- Knowledge about how to use drawing and CFD simulations software;
- Knowledge about how to conduct thermal analysis;
- Discipline, rigor and organization.

To apply for the position, please send an electronic copy of your transcripts, diplomas and CV to Dr. Santiago Septien Stringel < septiens@ukzn.ac.za >.