



NIDAL KHALAF

ESR3: HYDROTHERMAL CARBONISATION OF P-RICH ORGANIC WASTE

Nidal is a Palestinian PhD student at the University of Limerick-Department of Chemical Sciences and Engineering.

Research goals and focus:

- The aim of ESR3 is to assess the possibility of integrating acid catalysis as an option for optimising the yield of Hydrothermal Carbonisation (HTC) and the overall economic efficiency of the process.
- The effects of processing conditions such as temperature, residence time and biomass/water ratio will be studied.
- Assessment on the characteristics and yield of the solid and liquid products for further optimisation of the HTC process will be done.
- Focus on the organic and inorganic contents of both solid and liquid products, with more emphasis on the phosphorous components.
- Techniques for the recovery of P will be taken into account, with special attention paid to enhanced biological phosphorous removal.

Expected results: Develop an optimised software model for the hydrothermal carbonisation of dairy sludge. The model will act as a guideline for the experimental procedure that will validate the results expected in the model.

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