Thesis Project Offer

Joint Research and Education Programme “Palestinian-German Science Bridge PGSB”
Forschungszentrum Jülich GmbH & Palestine Academy for Science and Technology

Thesis type*

☐ BSc  ☑ MSc  ☐ PhD  Intended starting date (approx.): Sept. 2018

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Project description*

Fate of nutrients transferred by microalgae - master thesis work
Nutrient cycling as a resource management becomes more and more important for a self-sustained bioeconomy. To this regard, a means of taking up nutrients from waste streams and transferring them to plants is necessary. To date, manure or sewage sludge is brought to fields, but issues like nutrient runoff or heavy metal introduction prevail, facilitating eutrophication of surface water or accumulation of harmful substances in soil. An option to mitigate this is the use of microalgae as a nutrient vector. Algae take up nutrients relevant to plants, and, once transferred to soil, release them slowly during degradation. Their composition (C, N, P) may also offer improvement of poor soils. The envisioned work entails
- Comparing the nutrient transfer (P, N, C) to soil from algae and mineral fertilizer (also possibly biochar)
- Nutrient uptake by algae (pure, consortia, different species) depending on conditions (this may be important to relate to our algae group)
- Testing for nutrient availability and loss, characterization of substrate improvement
- Showing barley growth in thus fertilized poor soil

Date*  Signature*
1.3.2018  [Signature]

* required field