Programa EngIQ – Edição 13 – Informação adicional dos projetos

Projetos de doutoramento com início em outubro de 2021.

EngIQ_BD2021-11: Microalgae Systems for Wastewater Treatment and Resources Recovery. **Empresa:** A4F

In recent years, urban wastewater has gained increased attention as a valuable source of many resources, contrasting to the former vision of a waste. Previously designed wastewater treatment plants are now being looked at as Water Resource Recovery Facilities (WRRF) where energy, water and nutrients (e.g., nitrogen and phosphorus) can be recovered and reintegrated in the resources' flows, coping with the circular economy concepts. However, such approach can hardly be implemented using the conventional and energy intensive wastewater treatment processes. Microalgae-based processes can effectively remove nutrients from the wastewaters and the accumulated microalgae biomass can be exploited for multiple applications, such as bioenergy, biofertilizers and other biorefined products. These nature-based processes require much less energy and contribute for CO2 sequestration, thus, improving the energy and carbon footprint of the WRRF. However, these microalgae systems still lack the technological improvements necessary to extend their reach to the industrial scale. In this research project, microalgae-based treatment processes will be studied in pilot-scale for a better understanding of the design requirements and of the operation conditions of microalgae cultivation systems that allow the efficient and cost-effective recovery of nutrients from the wastewaters.

O diretor do EngIQ

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