

## Thesis / internship project

# Calcium phosphate biocrystallization during anaerobic digestion

### Background:

Phosphorus (P) is essential for life on earth due to its various vital functions in growth and energy mechanisms of fauna and flora. Phosphate rock, the natural resource of P, is finite and dwindling in quality and quantity. A shortage in P would threaten the food security.

In the Netherlands, 71 million kg of P are produced as animal manure annually. Here at Wetsus, we research a multidisciplinary approach to trigger calcium phosphate bio granulation during the treatment of animal manure in an up-flow anaerobic sludge blanket (UASB) reactor.

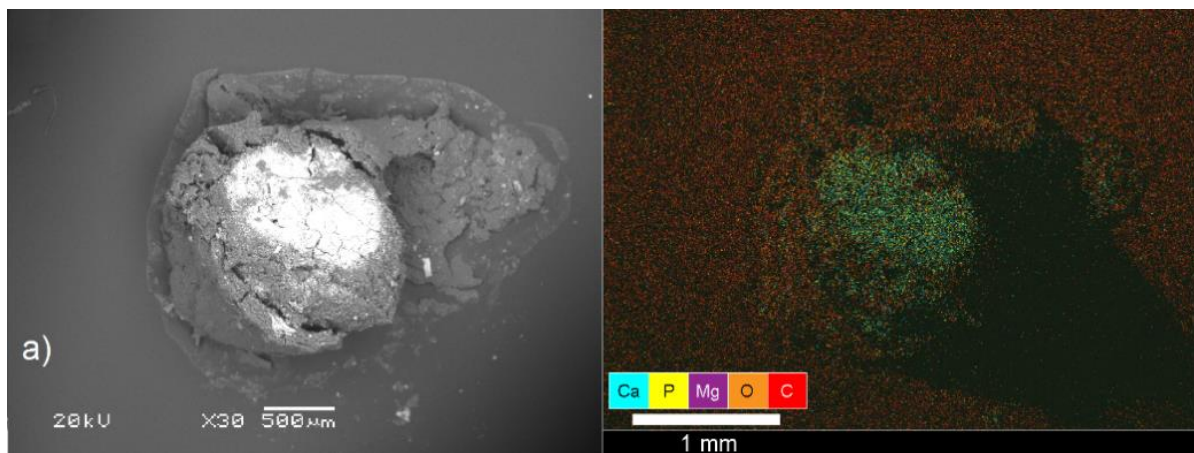


Figure 1, Scanning electron microscope (SEM, left) and electron dispersive x-ray (EDX, right) images of a calcium phosphate granule with an inorganic core consisting of calcium phosphate (EDX green).

### Your tasks:

- Help designing novel process
- Modify bioreactors treating manure
- Operating and monitoring bioreactors
- Performing and preparing a broad variety of lab analyses
- Evaluating and optimizing reactor performance

### Your benefits:

- Experiencing a multidisciplinary and international working environment
- Developing excellent practical lab skills
- Being part of active research to develop a sustainable biotechnology

### Your application:

We are looking forward to work with you from November 2021 for at least 6 months at Wetsus in Leeuwarden, if you are an enthusiastic BSc or MSc student in topic related studies. Fluent English, good lab skills and analytical thinking are appreciated. You cannot be afraid of working with animal manure.

Contact [Chris.Schott@wetsus.nl](mailto:Chris.Schott@wetsus.nl) for questions or send a brief motivation letter and your CV to apply with the subject "Internship biocrystallization".