

Downstream processing

Biopolymers (PHAs)

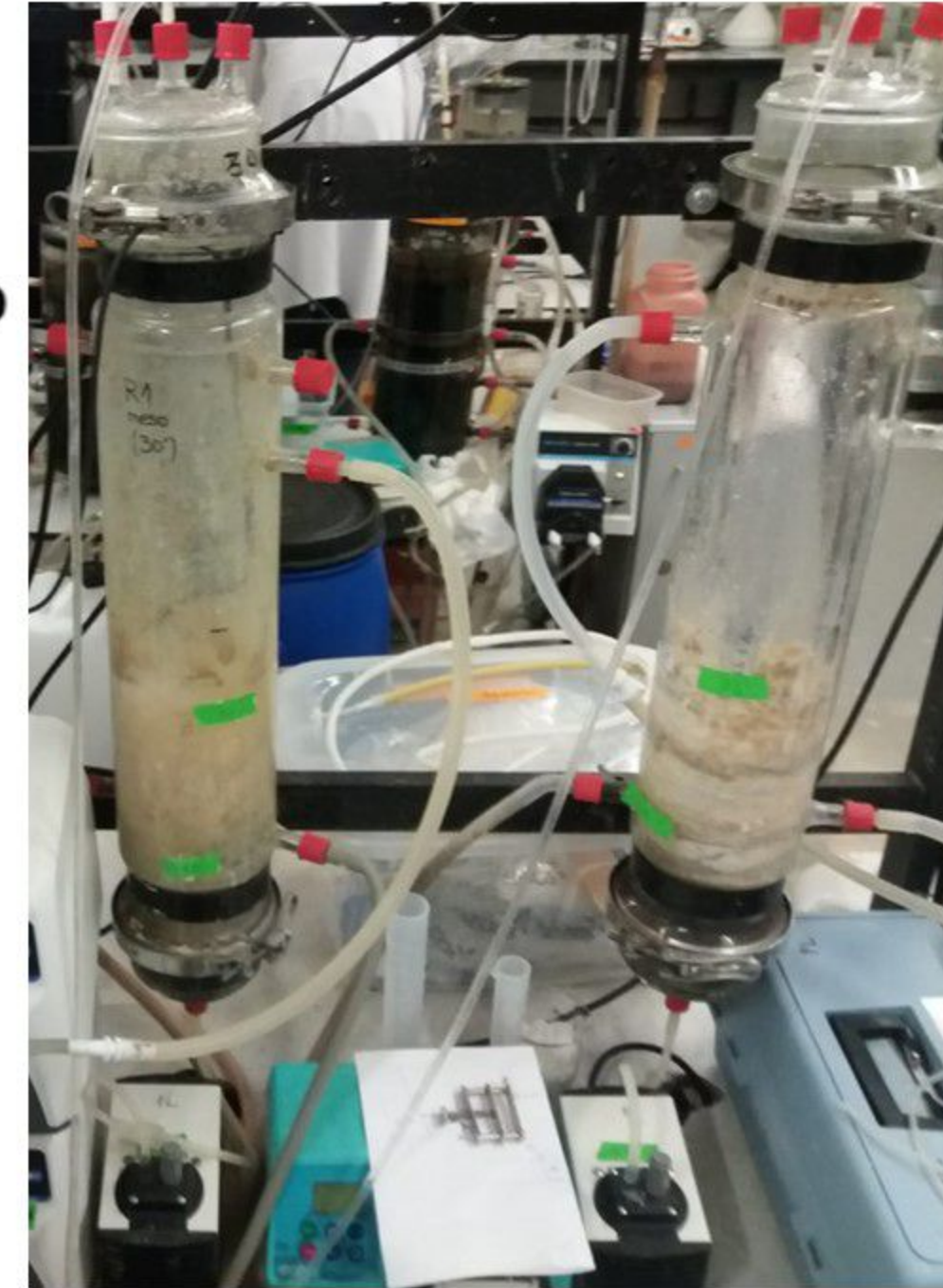
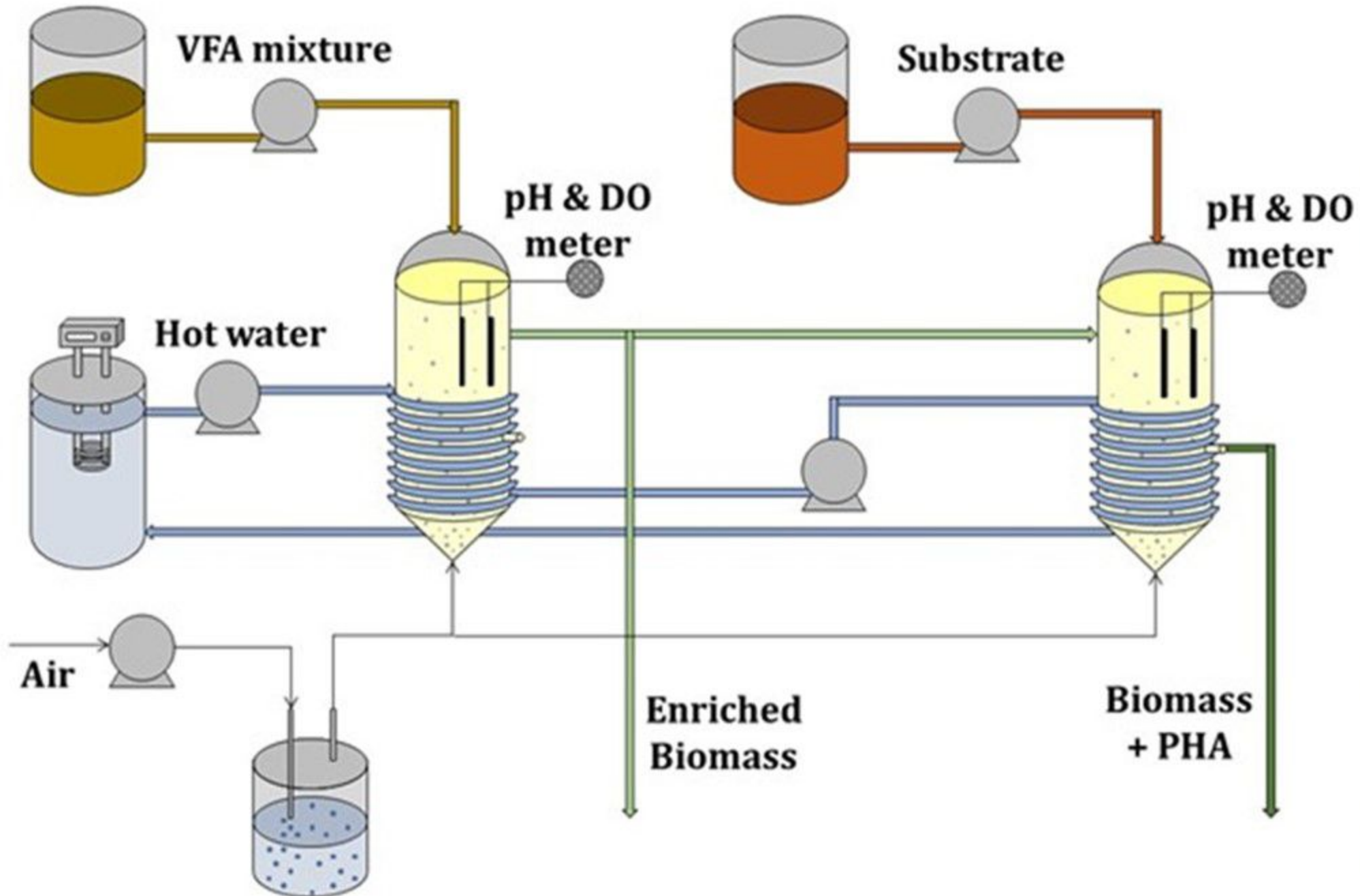
Membranes & VFA recovery

Hydroponics

Biogas clean-up

Tania Palmeiro Sanchez

Bioplastic production within the frame of the circular economy proposed by the European Union



- ❖ The enrichment is done at 30 °C in a SBR (HRT=SRT=1d, 12h cycle) by following the feast-famine strategy (C-limited, N-excess) and using waste activated sludge as inoculum.
- ❖ The maximum production of PHA in fed-batch reactors is achieved by means of the pulse wise feeding strategy (Excess of C when DO rises up). N is limited to avoid growth.



Silicone membrane contactor setup

Harish Ravishankar



The laboratory scale silicone membrane contactor system consisting of two beakers with the first beaker (feed) having solution rich in VFAs/alcohols connected to the second beaker (draw) with de-ionised (DI) water that is temperature controlled and stirred using a magnetic stirrer, inside which the silicone membrane is immersed for extraction tests.



Experimental set-up

Suitability of hollow fibre membrane (HFM) for biological biogas desulfurization process are being tested

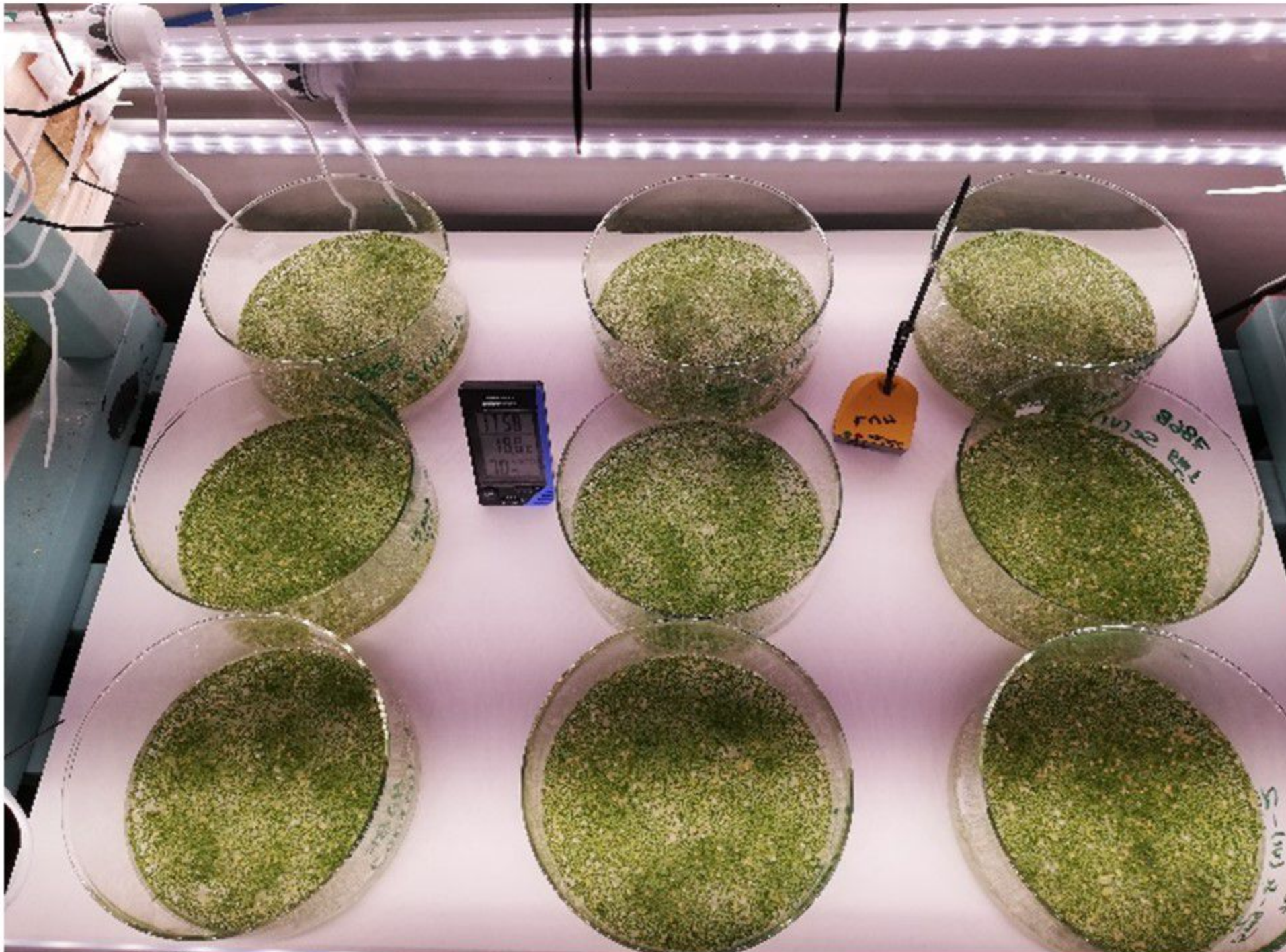
- (a)** HFM characterisation
- (b)** Fabrication and testing of HFM module
- (c)** Ongoing experiments on microbial attached growth in a membrane reactor





Treatment of selenium-rich wastewater in constructed floating wetlands and its application potential in Se biofortification

Ana Murillo Abril and Piet N. L. Lens



*10 g of duckweed (*L. minor*) biomass were transferred to glass crystallizing dishes containing 500 ml of modified Steinberg medium with different concentrations of Se (1, 3, 5, 10 mg Se L⁻¹) as sodium selenite (Na₂SeO₃) or sodium selenate (Na₂SeO₄). On day 7, the plant biomass was harvested, dried, grinded and stored in plastic container until acid digestion and Se analysis by ICP-OES.*