

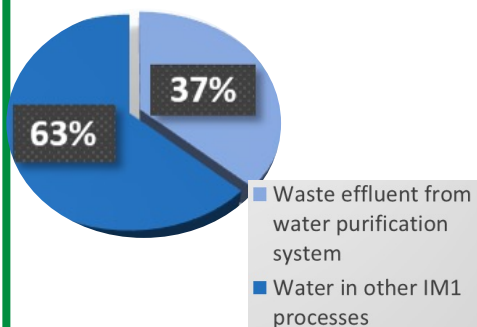
INVESTIGATION OF SUSTAINABLE WATER EFFLUENT RE-USE FROM PURIFIED WATER PRODUCTION

Manka'a Abongnwi M., Tanmay Chaturvedi, Marta González



Introduction

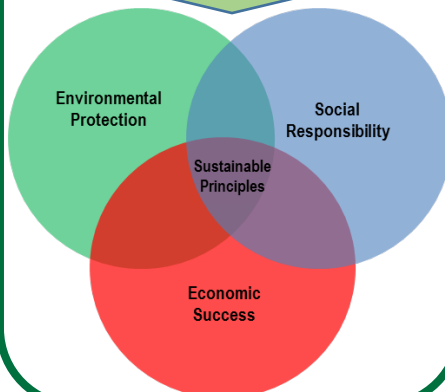
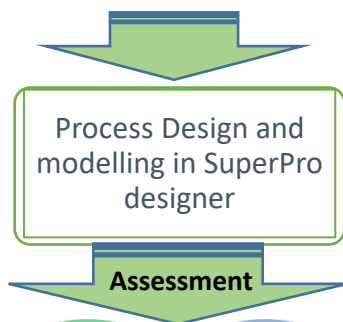
- Insulin manufacture core processes require large amounts of potable and purified water



- Objective is to design process to treat and reuse wastewater within IM1
- Aid in achieving sustainable development goals

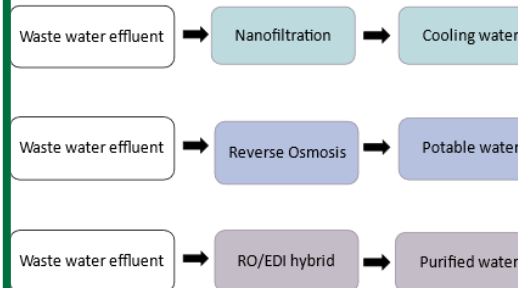
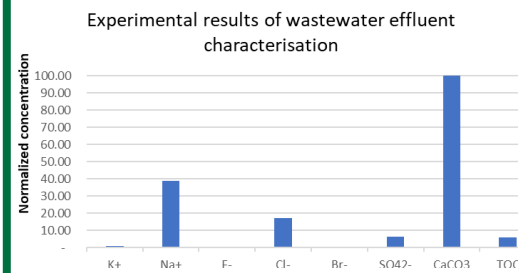
Methods

- Waste water sampling and characterization
- ICP-OES analysis (ionic composition of sample)
- Hach-lange water testing analysis (TOC measurements)



Outcome

- Low ionic and organic composition



- Reuse point specifications met
- Environmentally sustainable processes
- Economically unsustainable processes
 - Negative net present values
 - Negative cashflows

Perspectives

- Helix lab, a bridge between university education and industry
- First hand industrial experience
- Real life problem solving
- Exposure and career kick-start