Biorg4WasteWaterVal+

Bioorganic novel approaches for food processing waste water treatment and valorisation: Lupanine case study

Food processing industry uses a large volume of fresh water to deliver safe food for humanity, which is obtained from public water providers or ground and spring water sources. The resulting brackish wastewater is often disposed of in public sewers or using different suboptimal solutions. The food processing industry is comprised of several factories of small/medium size, calling for a modular technological solution able to be quickly implemented at the companies´ site. In this project, novel separation processes using low energy and chemicals at low cost will be developed based on novel membrane processes and adsorbers capable of purifying the water for *in-situ* recycling at zero cost for the company. A far reaching concept is suggested in which alkaloids are isolated and converted into building blocks of value for pharmaceutical and chemical industries, compensating for water detoxification costs. New biological and chemical tools will be developed for conversion of alkaloids into such added value compounds. Lupanine is used as a particular example to illustrate this case.