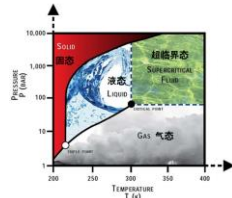


生物转化新机遇/ A novel bio-based transition opportunity

— 超临界流体的应用/ the application of supercritical fluids

Miao Yu, Kai Kniepkamp, Rob van Haren
Hanze University of Applied Sciences, Zernikeplein 11, 9747 AS, Groningen, the Netherlands

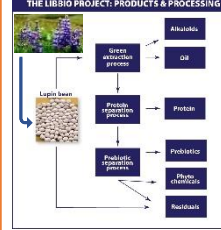
超临界二氧化碳/Supercritical carbon dioxide (scCO₂)



优点/Advantages:

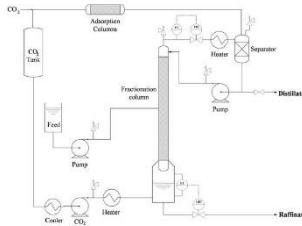
- 温和操作条件/Mild operating conditions;
- 无毒/Non-toxic;
- 可持续/Sustainable;
- 化学性质稳定/Stable and non-reactive;
- 易后续分离/Easy separation;

现阶段课题/Current project

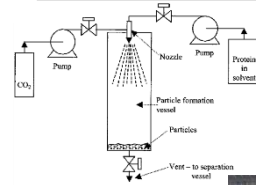


实验室研究方向/Research topics in our lab

萃取+分馏/Extraction+Fractionation



干燥+制粒/Drying+particle production



天然低共溶溶液/Natural deep eutectic solvents (NADES)

天然低共溶溶剂: 初级自然代谢物的混合物; 存在大量分子间氢键; 可由固态变为液体低共溶态。
NADES: Mixtures by natural primary metabolites; Form intermolecular hydrogen bonds; State change from solid to liquid eutectic solvents.

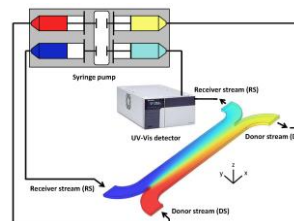
超临界二氧化碳和天然低共溶溶剂结合可以用于特殊物质分离萃取过程。
The combination of NADES and scCO₂ can be envisaged as an integrated process, with the advantages of both extraction media for a specific material.



微流体/Microfluidics

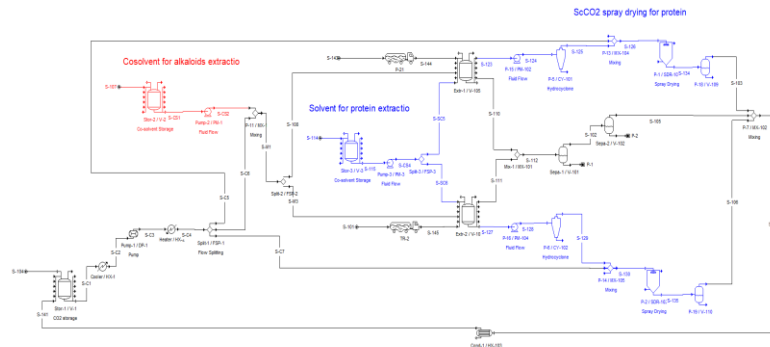
微流体学指控制微升流体在微米级别平台上传质与反应的学科。
Microfluidics is the science of manipulating and controlling fluids, usually in the range of microliters in networks of channels with dimensions from tens to hundreds of micrometers.

控制流体运动较容易, 低样品消耗。
Easy control of fluid behaviours and low consumption of samples.



工业应用与潜力/Industrial applications and potentials

可持续工业过程/Towards sustainable industrial processes



工业产品/Industrial products

- 食品工业/Food industry
- 化妆品产业/Comestics
- 医药工业/Pharmaceutical industry

