

Energy Efficient Affinity driven Molecular Separation (EAMS)

Publieke samenvatting / Public summary

Korte omschrijving

In the chemical industry large amounts of energy are consumed for molecular separations, for instance separations of pure components from a mixture. Replacing the currently-used energy-intensive classical separation techniques with new and benign methods provides a great potential for energy savings. Here two energy efficient separations approaches are investigated that rely on the affinity between the molecules that are to be separated and either a solvent, or a solid material, called the affinity separation agent. In solvent affinity separation the fundamentals underlying the interaction between the solvent and solute are to be investigated, ultimately enabling the design of optimal solvents, and the design of optimal solvent affinity separations taking into account both the separation and the solvent recovery step. The affinity between molecules and solid materials will be exploited in membrane nanofiltration. Here a new generation of robust high-performance hybrid membranes will be developed that can be economically produced on a large scale.

Projectinformatie / Project information

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Algemene informatie / General information

Penvoerder / Secretariat
TKI

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