

Trace removal using electrically powered separations

Publieke samenvatting / Public summary

Aanleiding

Separation technology needs to be devised to prevent environmental pollution due to processing. Often it is not just a single trace, but many traces acting in concert. Examples include 1) recycling of plastics where complex plastic-based products contain a wide range of polymeric materials as well as fillers, colorants and other property-modifying agents; 2) recycling of electronics, where often over half the periodic system of elements can be found in recycle streams. Furthermore, regarding to existing operations, we are more and more aware of trace impurities due to the higher accuracy of measurement techniques, and for example fluorinated hydrocarbons (PFAS) in very low concentrations pose human health risks.

Doelstelling

This research project is aiming to develop process technology for 2050 for separation challenges. The value chains from feedstocks to end-products in the industry are expected to be radically changed by 2050. The need to massively recycle, and to produce in a circular economy with recycled feedstocks will result in the presence of traces of a wide range of compounds, which is a serious concern for industry.

Korte omschrijving

The project aims at generic TREPS development, in which nano-, micro- and milli particles are considered to help concentrating and regenerating traces. This requires development of a library of

Projectinformatie / Project information

Projectnummer / Project number
TKITOETKI2022_LTP_TREPS

Subsidiebedrag / Grant amount
€ 1.800.000,00

Algemene informatie / General information

Penvoerder / Secretariat
ISPT

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particle dispersions, for which a modular approach is considered. Particles need to have sufficient affinity for the trace they are designed for, it should be able to concentrate them effectively (using an electrically powered concentration technique), and it should be able to regenerate the particles effectively, preferably also with an electrically powered regeneration approach.

Resultaat

This project contributes directly to the transformation towards a sustainable industry by enabling safe and efficient circular production processes. It supports broad societal prosperity by reducing environmental risks of the new circular economy and creating new technological capabilities within the Netherlands.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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