

Breakthrough Mild Dewatering Technologies

Publieke samenvatting / Public summary

Aanleiding

Previous projects have yielded significant progress, enhancing our comprehension of the fundamental principles governing drying and measures to curtail energy consumption. Broadly speaking, the upcoming challenge lies in pushing toward higher solids content prior to spray drying and delving into innovative technologies to facilitate this shift. Additionally, emerging dewatering methods such as membrane systems and novel drying techniques like air-free drying exhibit promise in energy reduction. Although these technologies may necessitate further refinement in design before finding practical application, especially in sectors such as the food industry, the urgency surrounding energy conservation is compelling enough to warrant comprehensive evaluations, considering energy reduction potential, resilience, and product implications. The imperative for a more pragmatic understanding of techno-economic analyses, specifically pertaining to alternative dewatering and drying systems, is acknowledged by the industry.

Doelstelling

The main objective of this project to enhance the implementation of mild (energy extensive) dewatering technologies. This will be done by a scientific evaluation of all proven technologies and hybrid combinations thereof for dewatering and drying of streams of interest with regard to specific energy consumption, robustness, TRL and impact on product functionality and sustainability. The evaluation will be executed by researchers of CRO NIZO and TU Delft and will result in process designs of new or revisited technologies within factories of

Projectinformatie / Project information

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TKITOETKI2021_Mildewat

Subsidiebedrag / Grant amount

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the industrial partners. The new insights and designs should contribute to industry's energy reduction goals of 50-80% in 2030.

Korte omschrijving

A scientific evaluation of emerging and assisting dewatering technologies, experiments for proof-of-concept and technical validation on lab-scale will shed light on new methods to make essential choices in new potential technology developments and further optimalization of mild dewatering and drying activities to pursue the above sustainability goals.

Resultaat

The following results are foreseen: • New designs for drying and dewatering with diminished energy aiming at 50-80% energy reduction in the dewatering step while maintaining required product quality. • List of potential (re)new(ed) technologies that can be applied in the near future. • Joined effort on energy reduction in the food industry by sharing best practices.

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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