

EEMS - Energy Efficient Milky Sprays

Combined Experimental and Modelling approach between academia and Industry.

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Project number DR-20-13

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Partners TU Eindhoven - FrieslandCampina - Danone - DSM - ISPT

Budget 870 KEuro

Duration March 2019 - March 2023

Incentive

Drying is a process that is used throughout the food industry but also in many other industries. Spray drying is a very energy intensive process to dry amongst others milk products into a functional powder. Understanding of nozzle operation in spray drying could have a far reaching effect in the optimisation of industrial processes over many different sectors.

A 2% solids increase will result in 8% energy reduction. Benefit should be realised without affecting product quality.

Objective

Better Understanding of current High-Pressure Nozzle Atomization Process.

- Understanding regimes for processing of high solids/ high viscosity fluids.
- Use CFD modelling to translate understanding into operation that results in narrow droplet distribution.
- Validate experimentally.

Approach

An Iterative approach between nozzle design and proper reference systems and flow and droplet characterisation is foreseen.

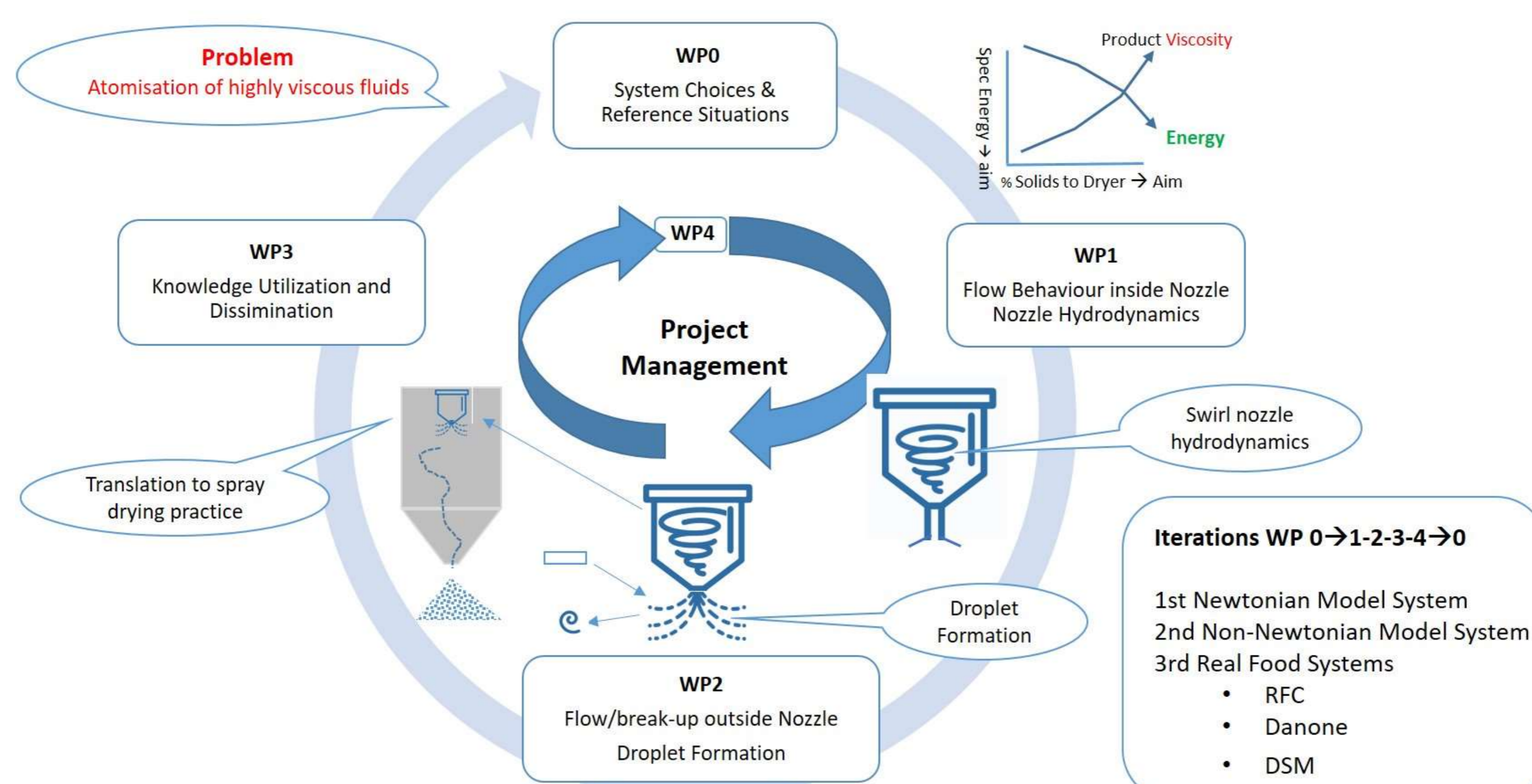
Insights from industry will be taken along from the first iteration cycle

Results

Project starting up.

Next steps

- Plan shaped and focus defined.
- 2 PhD students recruited by TU/e.



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This project is co-funded by TKI-E&I with the supplementary grant 'TKI-Toeslag' for Topconsortia for Knowledge and Innovation (TKI's) of the Ministry of Economic Affairs and Climate Policy.