

# Membrane Emulsification versus Homogenisation – Benefits in Energy Usage and Process Efficiency

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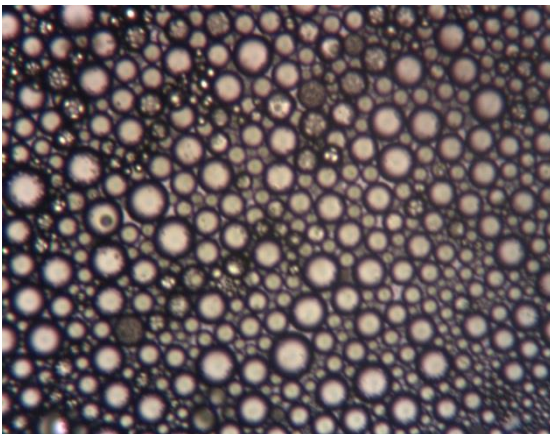
To obtain emulsions, traditionally homogenisation techniques have been used. However, improvements to emulsion droplet size distribution is required to enhance stability, and so alternative methods to form superior emulsions have been investigated. Whilst membrane emulsification has historically been limited to small scale lab operations, recent developments have led to new scalable systems that have been specifically designed for aseptic applications, such as food and pharma.

The benefits of superior emulsion droplet size distribution, leads to a more stable emulsion. This can then, by a variety of chemistries, be converted into microcapsules or other forms of delivery systems with superior performance in terms of mechanical stability, uniformity of dose and rate of diffusion.

In this presentation the potential benefits of using membrane emulsification to achieve size control and stability benefits will be discussed. The related cost savings to be made in terms of energy usage and reduced raw material waste will be illustrated to demonstrate how this technology can improve sustainability and reduce environmental impact whilst accessing enhanced performance.

## Homogenisation vs. Membrane emulsification

Homogenisation



Membrane emulsification

