

# **Water in Oil Emulsions Stabilised by Hydrophilic Particles to Produce Porous Materials via Emulsion Templating**

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Polymer foams have been synthesised via the polymerisation of emulsions. Commonly, emulsions are stabilised by a large amount of surfactants. However, particle stabilised emulsions have recently attracted more and more interest. Unlike surfactants, particles adsorb irreversibly at the interface of the two phases of an emulsion causing the formation of a dense particle layer around droplets. Generally, hydrophobic particles such as modified titania or silica, which have contact angles  $>90$  degrees stabilise water in oil emulsions, while hydrophilic particles tend to stabilise oil in water emulsions. It is generally known, that the emulsion foam stability is a function of the contact angle and particle size.

Here we report on the synthesis of new polymerisable emulsion templates via particle stabilisation. This allows the incorporation of hydrophilic particles into a hydrophobic polymer network during polymerisation. The resulting polymer foams have been characterised with respect to morphology (pore and pore throat size), density and mechanical properties.