

Generation of monodisperse complex multiple emulsions by phase separation in a microfluidic channel

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In this study, we present one-step method for generating complex emulsions that exploits the phase separation of the emulsion droplet generated in the microchannel. This approach easily produces double, triple, quadruple, and Janus emulsions with monodisperse size. These emulsions can be used as useful templates for the synthesis of new functional materials, such as microcapsules, hemispheres, Janus particles and microcarriers that are capable of simultaneously encapsulating hydrophilic and hydrophobic compounds with selective compartmentalization in a one-step process.