

Abstract Submitted
for the DFD14 Meeting of
The American Physical Society

Exploiting droplet formation in microfluidic devices to create functional particles¹ EMILIA NOWAK, MARK SIMMONS, University of Birmingham — Microfluidic devices offer excellent capabilities for the formation of microstructured particles which have functional attributes e.g. in controlled delivery of pharmaceuticals, enhanced nutrition and flavours in food. In this work, a microfluidic device is employed to form microstructured particles in two steps: (i) by formation of single/double emulsions and (ii) solidification of the droplet by either gelation or solvent evaporation. Both may impart non-Newtonian properties to the component phases. The influence of phase flow rates (capillary number), surfactant type/concentration and the rheology of the component phases upon the particle formation and hydrodynamic behaviour are described.

¹EPSRC Programme Grant, MEMPHIS, EP/K0039761/1

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Date submitted: 01 Aug 2014

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