

## Strong Microcapsules with Macroporous Polymer Shells

**Authors :** Eve S. A. Loiseau, Marion Frey, Yves Blickenstorfer, Fabian Niedermair, André R. Studart

**Abstract :** Porous microcapsules have a broad range of applications that require a robust shell. We propose a new method to produce macroporous polymer capsules with controlled size, shell thickness, porosity and mechanical properties using co-flow flow-focusing glass capillary devices. The porous structure was investigated through SEM and the permeability through confocal microscopy. Compression tests on single capsules were performed. We obtained microcapsules with tailored permeability from open to close pores structures and able to withstand loads up to 150 g.

**Keywords :** microcapsules, micromechanics, porosity, polymer shells

**Conference Title :** ICMN 2014 : International Conference on Microfluidics and Nanofluidics

**Conference Location :** Prague, Czechia

**Conference Dates :** July 10-11, 2014