

Microfluidic encapsulation of Pickering oil microdroplets into alginate microgels for lipophilic compound delivery

Mélanie Marquis, Valentin Alix, Isabelle Capron, Stéphane Cuenot, Agata Zykwinska*

M Marquis

INRA, UR1268 Biopolymères Interactions Assemblages, rue de la Géraudière F-44316 Nantes,
France

e-mail : Melanie.Marquis@nantes.inra.fr

V. Alix

INRA, UR1268 Biopolymères Interactions Assemblages, rue de la Géraudière 44316 Nantes,
France

Dr. I. Capron

INRA, UR1268 Biopolymères Interactions Assemblages, rue de la Géraudière 44316 Nantes,
France

Dr. S. Cuenot

Institut des Matériaux Jean Rouxel (IMN), Université de Nantes-CNRS, Rue de la Houssinière
44322 Nantes, France

Dr. A. Zykwinska

Ifremer, Laboratoire Ecosystèmes Microbiens et Molécules Marines pour les Biotechnologies, rue
de l'île d'Yeux 44311 Nantes, France

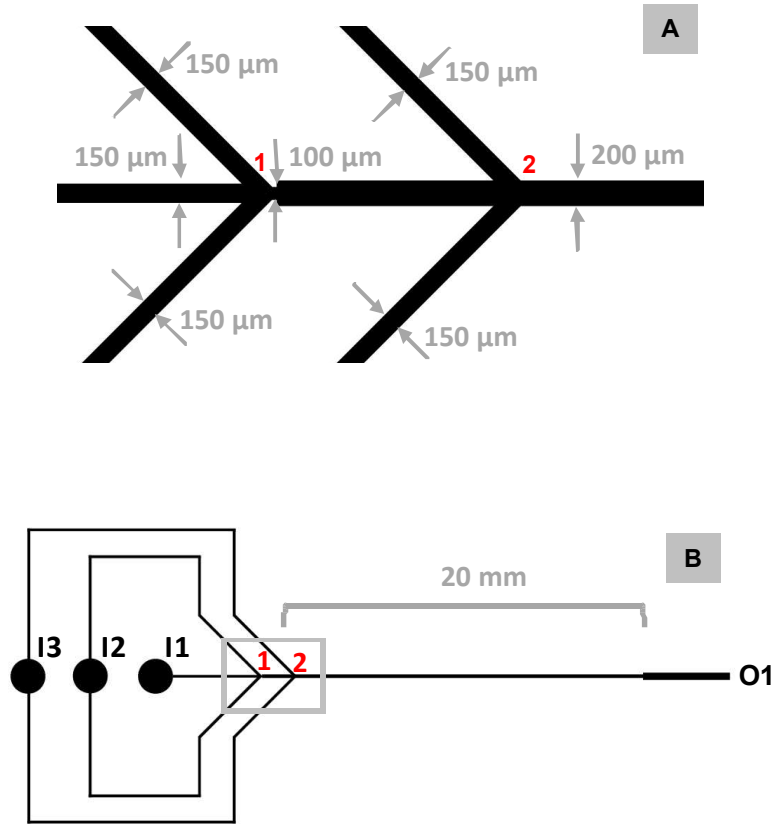


Figure S1. (A) Channel dimensions at the first (1) and the second (2) junction. Channels are rectangular in shape with a uniform depth of 130 μm and respective width of 150 μm for the biopolymer phase, 150 μm for the oil phases, 100 μm for the restriction and 200 μm for the central channel. The central channel had a length of 20 mm and the short exit channel had a width of 400 μm and a length of 5mm. (B) Schematic representation of the microfluidic flow-focusing geometry used. The dispersed phase was delivered to the microfluidic channels by the inlet I1 (alginate + Pickering O/W emulsion), whereas the continuous phases were delivered to inlets I2 (sunflower seed oil + Span 80) and I3 (sunflower seed oil + Span 80 + acetic acid). The microparticles were collected from the outlet 1 (O1).