Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Hydrate Formation in Water-Laden Microcapsules for Temperature-Sensitive Release of Encapsulants

Juwoon Park,[‡,a] *Sang Seok Lee*,[‡,b] *Young hoon Sohn*,[a] *Shin-Hyun Kim*,[*b] and *Yutaek Seo*[*a]

[a]Department of Naval Architecture and Ocean Engineering, Collage of Engineering, Seoul National University, 1, Gwanak-ro, Gwanak-gu, Seoul, 151 - 744, Korea

[b]Department of Chemical and Biomolecular Engineering (BK21+ program), Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea

CORRESPONDING AUTHORS: Yutaek Seo and Shin-Hyun Kim

AUTHOR EMAIL ADDRESSES: Yutaek.seo@snu.ac.kr and kim.sh@kaist.ac.kr

Table of Contents

S1. Fracturing of microcapsules during hydrate formation

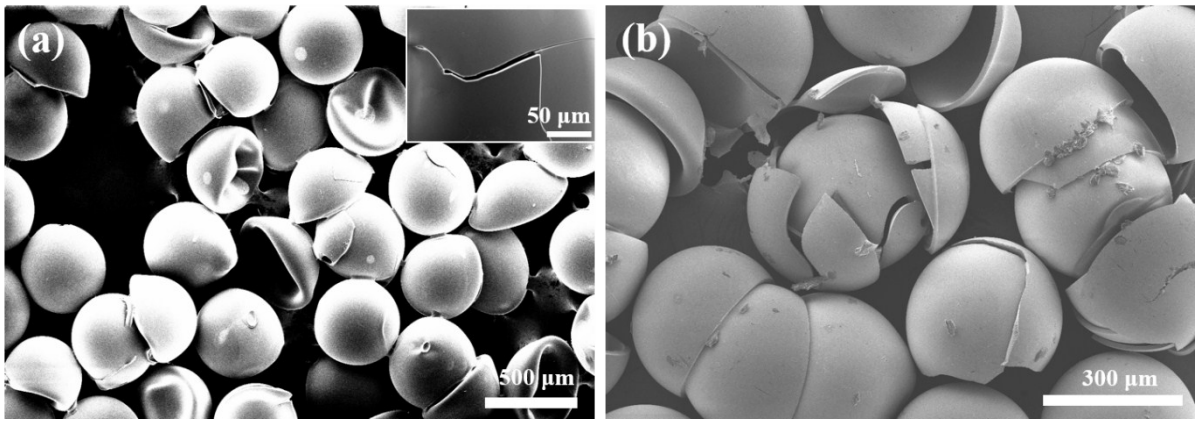

Fig. S1 SEM images of microcapsules taken in 1 day (a) and 2 weeks (b) during hydrate formation.

S2. Influence of dissociation rate

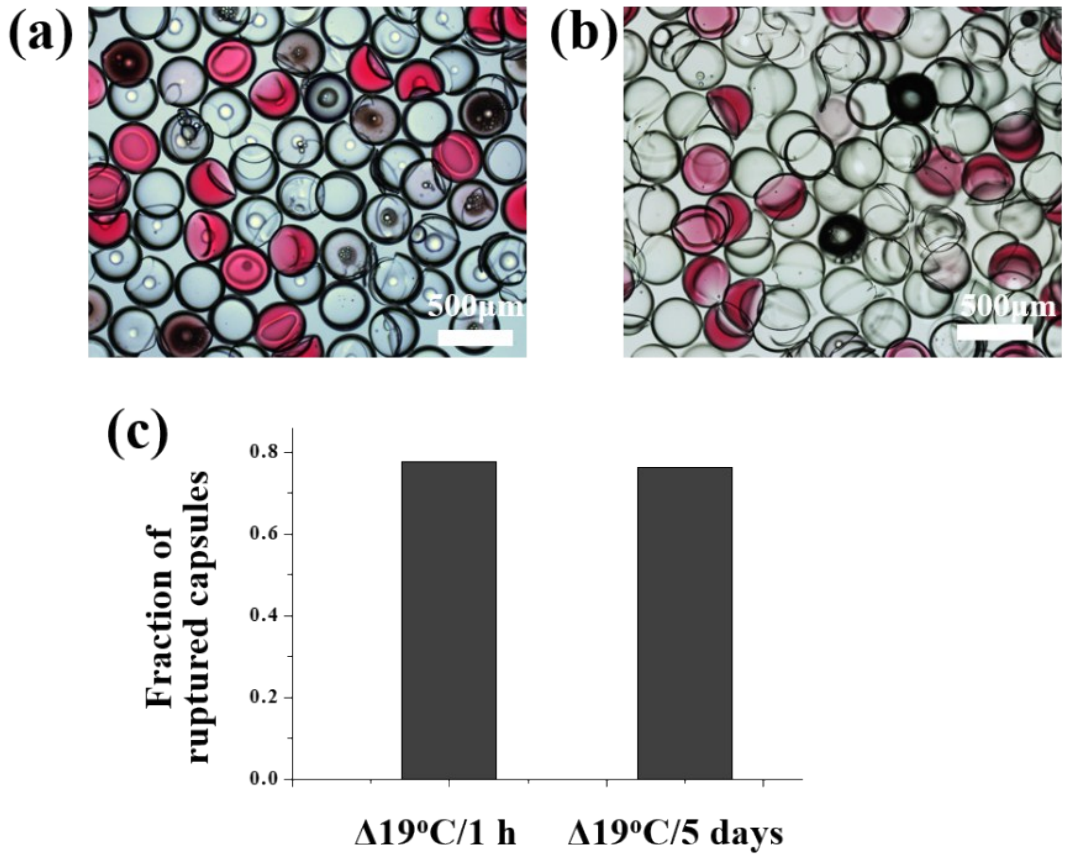

Fig. S2 Optical microscope images of microcapsules taken after dissociation, where two different rates of heating are used: (a) Δ19°C/1h and (b) Δ19°C/5days. (c) Fraction of broken microcapsules in (a, b).

S3. Description of supporting movie

Movie S1 show generation of W/O/W double-emulsion drops by inner drop-triggered breakup in a glass capillary microfluidic device. This movie is taken by high speed camera (Motionscope, M3, Redlake) and played 4 times slower than real time.