

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Programmed release triggered by osmotic gradients in multicomponent vesicles RUO-YU DONG, HYUN-SOOK JANG, STEVE GRANICK, IBS Center for Soft and Living Matter — Polymersomes, a good candidate for encapsulation and delivery of active ingredients, can be constructed with inter-connected multiple compartments. These so-called multisomes on the one hand enable the spatial separation of various incompatible contents or processes, and on the other hand provide an efficient route for inter-compartment communication via the interface semipermeable membrane. Here we show that by establishing osmotic imbalances between different compartments, interesting synergetic morphology changes of the multisomes can be observed. And by further carefully adjusting the osmotic gradients and the arrangement of compartments, we can realize a cascade rupture of these individual units, which may be a new step towards controlled mixing and timed sequences of chemical reactions.

Ruo-Yu Dong
IBS Center for Soft and Living Matter

Date submitted: 08 Nov 2016

Electronic form version 1.4