클레이 입자를 통해 안정화시킨 피커링 에멀젼에서의 분산상의 비등방성 조절
Anisotropy control of droplets in the Pickering emulsion stabilized by clay particles

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Pickering emulsion is a suspension of droplets of one immiscible fluid in another, of which droplets are stabilized with particles. In recent years, an interest in the role played by the carrier's geometry in its function has grown. Non-spherical carriers could provide unique benefits in the drug delivery system: drug loading, stability, and targeting. However, the majority of reports observing anisotropy of droplets only explain this in terms of "particle jamming", and quantitative analysis was not performed.
We investigated the anisotropy of droplets in Pickering emulsions prepared with two clay particles, a hydrophilic one(NMT) and a hydrophobic one(OMT). The anisotropy of droplets could be controlled and was quantified by defining a new parameter R. NMT particles were effectively absorbed in O/W interface only if OMT particles were dispersed in the oil phase, which decreases droplet size whereas OMT particles form interfacial structures developing the anisotropy of droplets directly. The anisotropic shape of droplets was maintained over 2 months, and this anisotropy seems to affect the long-term stability of emulsions.