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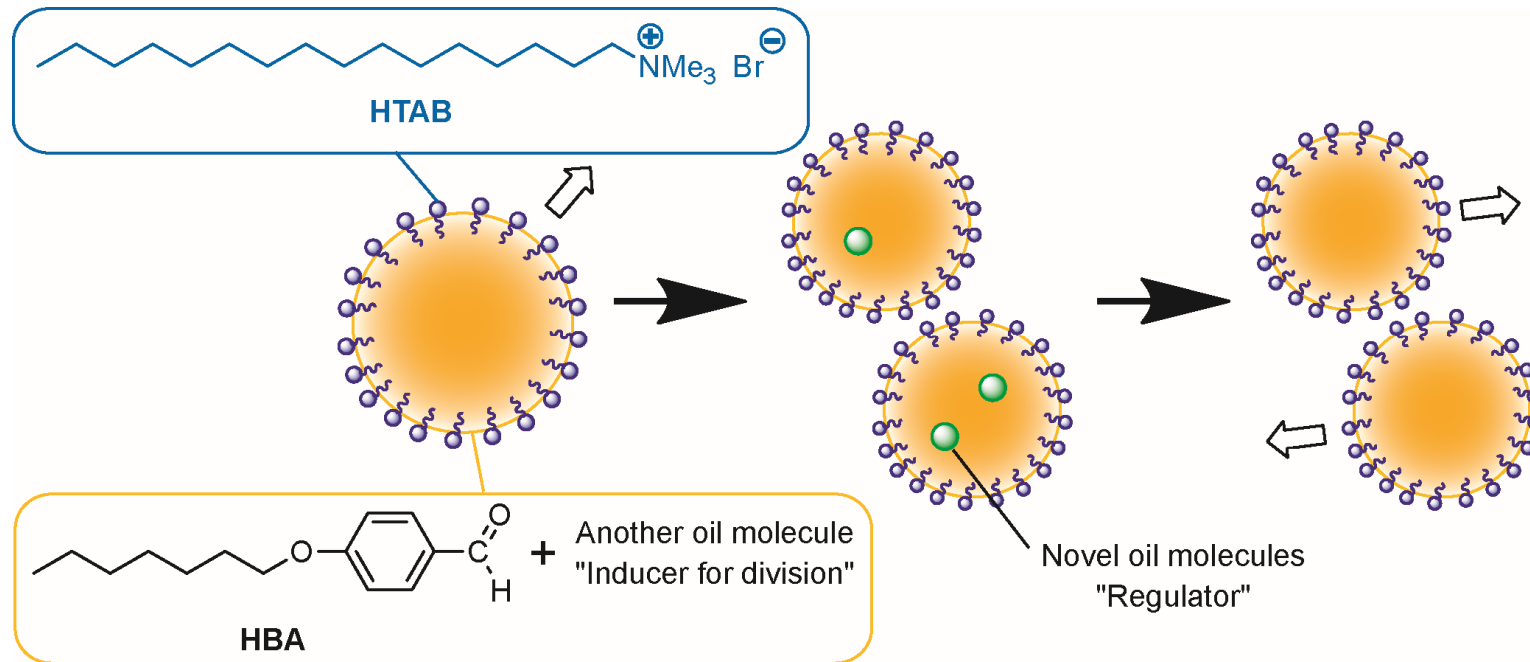
Self-Division of Self-Propelled Oil Droplets in Solutions of Cationic Surfactants

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Creation of exotic dynamics of micrometer-sized oil droplets

Creation of self-division of self-propelled oil droplets in a solution



A benzaldehyde derivative (**HBA**) and another oil molecule reacted in a droplet.



The division of oil droplets during self-propelled motion is expected to occur through a change of the interaction between the surfactant and oil droplet components in the system.

Conclusions

We demonstrated novel self-division dynamics of micrometer-sized oil droplets.

- ✓ Novel dynamics of **self-propelled motion and division** was observed in a **reversible reaction system** consisting of aldehyde, alkanol, and acetal (and hemiacetal).
- ✓ Novel **self-propagation dynamics** was occurred by **the hydrolysis of the surfactant component** to produce the self-propelled oil molecule.

