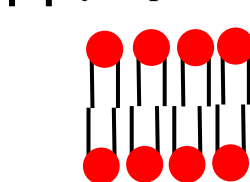


## Biomimetic manufacturing

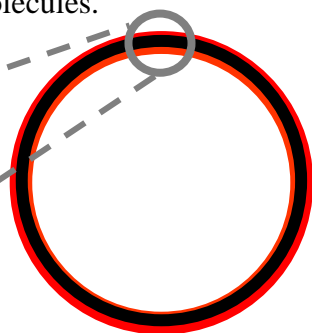
Hydrophilic



Hydrophobic



A phospholipid has amphiphilic property like soap molecules.



≈ 10 μm in diameter

Giant liposome

Phospholipid bilayer capsule

Artificial cell membrane

Biological Membrane



Insect wing

A wing of the Green lacewing



Content :

We study the soft matters, such as colloids, liquid crystals, polymers, surfactant, and biological molecules, in the field of fundamental science and engineering. In particular, we focus on the properties and applications of soft-matter composites made by using biomimetic knowledges.

Research topics:

- Study on the polar-molecule or ion-induce deformation of phospholipid bilayer vesicles.
- Development of soft actuators and soft tactile sensors made of polymer gels.
- Development of anti-reflective film inspired by green lacewing wings.

Appealing point :

We experimentally and theoretically study the soft materials. We can use the various methods for the problems.

Yamagata University Graduate School of Science and Engineering  
Research Interest : Colloid and surface chemistry,  
Physical Chemistry

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