Design of environment-friendly materials Laboratory
School of Engineering Department of Mechanical and Aerospace,
Engineering Environment and Energy Engineering Course
Grad. School of Environmental Studies, Department of Environmental Studies for Advanced Society

Kamitakahara Laboratory

＜Fusion of Environment, Life and Material Sciences＞

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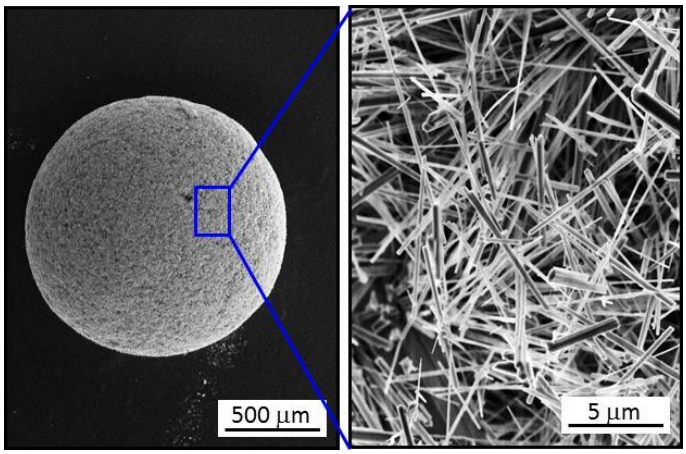
This laboratory promotes the study on the relationship between materials and phenomena of the life and nature in order to solve energy/environment problems. We are developing the materials harmonized with the environment, such as biomaterials, support materials for microorganisms, environment-purification materials, functional ceramics coatings.

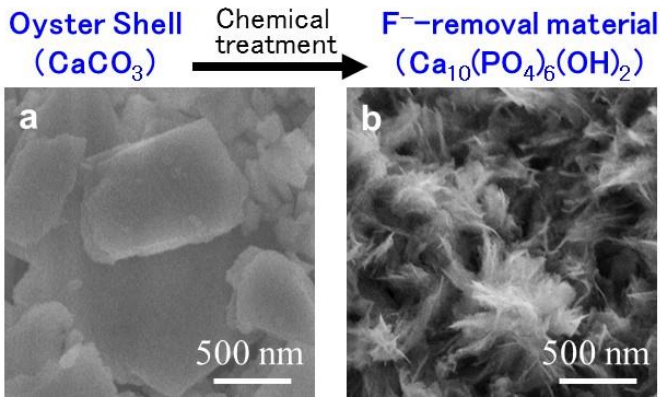
Biomaterials



Porous material of calcium phosphate for bone regeneration.

Preparation of artificial bones for bone regeneration

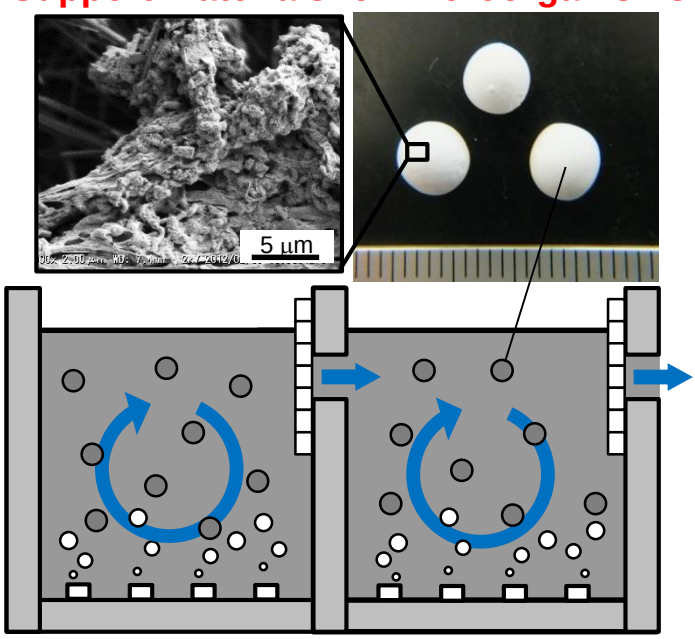
Environment-purification materials



Preparation of F⁻-removal material from oyster shell. Oyster shell (a) before treatment and (b) after treatment.

Preparation of F⁻-removal materials from wastes

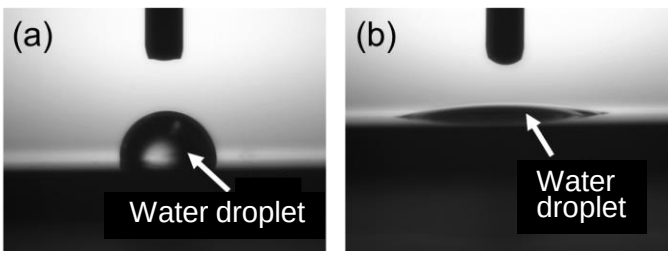
Support materials for microorganisms



Ceramics support materials for microorganisms for water treat

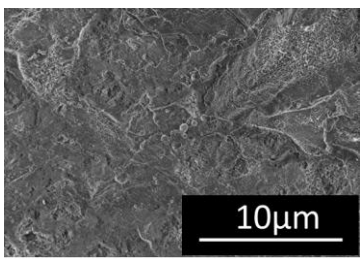
Preparation of support materials that enhance activity of microorganisms

Functional ceramics coatings



Water droplets on the substrate surface coated with photocatalytic ceramics. (a) before UV irradiation, (b) after UV irradiation.

Providing photoresponsive superhydrophilicity



Surface of ceramic coating for use in supercritical water environment.

Providing durability

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