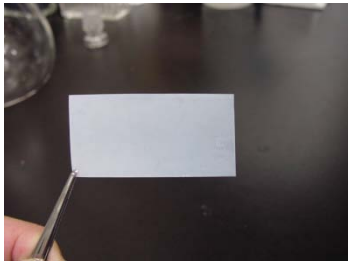
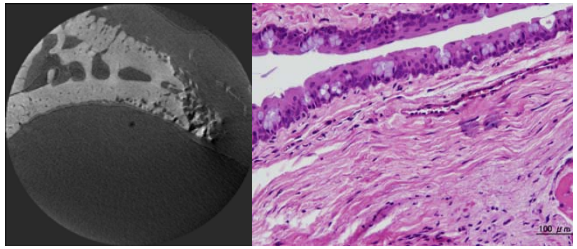
Processing of Advanced Ceramics

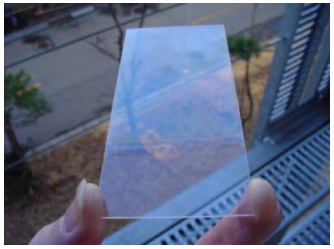
Professor Hidero Unuma



← PET/gelatin/HA composite membrane for GBR

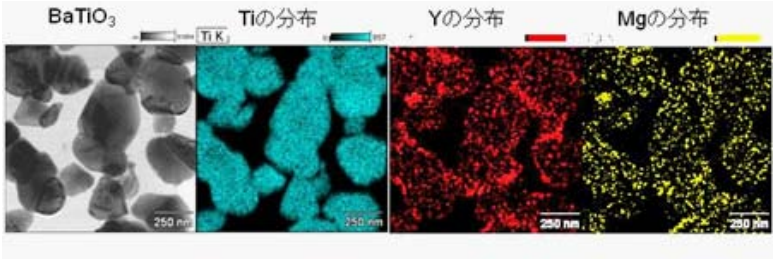
↓Micro-CT and histological images after the implantation





← ceramic coatings deposited from aqueous solutions

↓ coatings of dopant oxides on $BaTiO_3$ particles



Targets:

Development of processing techniques to fabricate ceramic materials
(1) into elaborated morphology and microstructure
(2) in time-, cost- and energy-efficient way
(3) and with high performance.

Advantages:

Our original techniques based on **Aqueous Solution Processing** enables us to realize ideal nano-structured materials in environmentally benign manners.

Topical Accomplishments:

(1) PET/gelatin/HA composite membrane for GBR
(2) Ceramic coatings from aqueous solutions
(3) Hollow ceramic particles
(4) High efficient thermoelectric materials
(5) Doped ceramic particles for integrated ceramic devices

We are willing to work on any kinds of ceramics upon request!

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Research Interest : Chemical processing of ceramics, Inorganic Chemistry

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