

## **Abstract Pr Nishi**

The current topics related to “*Materials Science for Advance Technology*” in my research unit will be introduced, as follows.

A: My academic career, activity and education related to my unite, Department of Materials Science, Tokai university, activity of former student)

2: Effect of compressive stress of properties for crystalline

2-1: Surface hardening by water polishing (saturated density of dislocations) for metal

2-2: Superconducting transition temperature

2-3: Fatigue resistance improvement of PZT irradiated by EB

2-4: New spring Cu alloy utilized for automobile

2-5: Effect of Pre-stressing on toughness of CFRP

B: Glass

B-1: Metallic glass formation and randomization (shot peening)

B-2: EB-irradiation induced GMM with high responsiveness

B-3: EB-irradiation induced fracture toughness

(Thin silicate glasses, polymers, carbon fibers, CFRP, GFRP, optical fiber)

C: Mist-resistance

EB-irradiation induced mist-resistance and wettability

(Diamond, sapphire, polymers)

D: Joint methods of CFRP-CFRM and CFRM-CFRM for mover machine

E: EB-irradiation Assisted Adhesion methods between polymers.