Interactive exhibit:
Skin-age estimation

Yoshikawa Lab.

[New Frontiers of Solid Mechanics via Simulation Integrated Material Testing]

Center for Research on Innovative Simulation Software

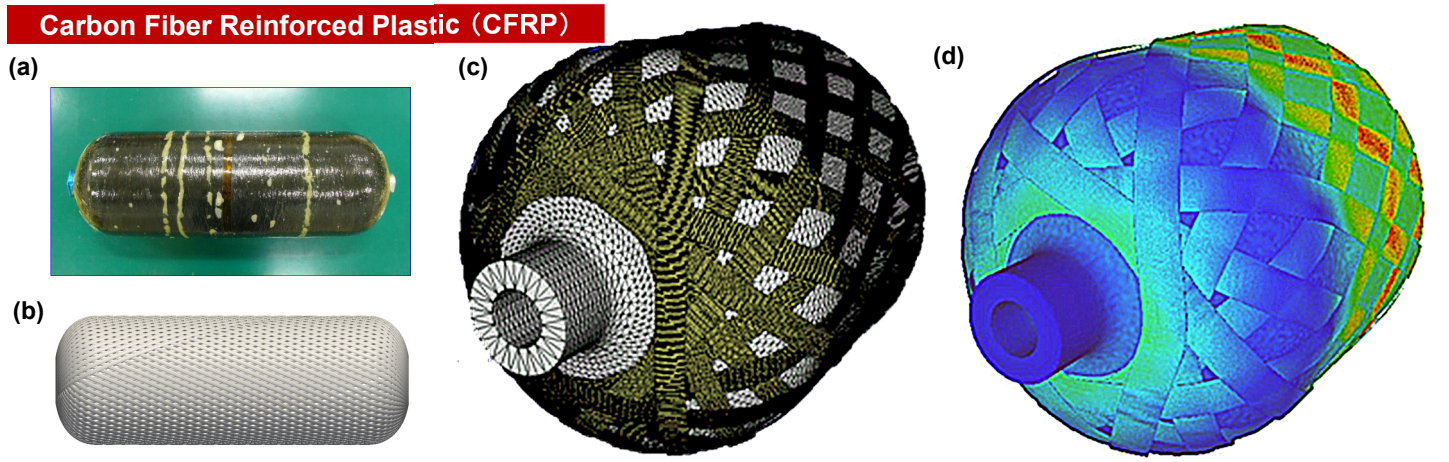
http://www.young.iis.u-tokyo.ac.jp

Multi-scale solid mechanics

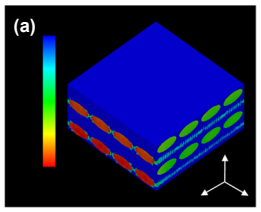
Graduate school of engineering, Department of Mechanical Engineering

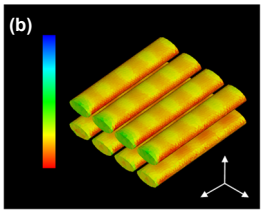
New Frontiers of Solid Mechanics via Simulation-Integrated Material Testing

Carbon Fiber Reinforced Plastic（CFRP）

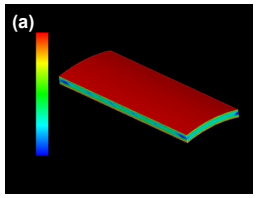


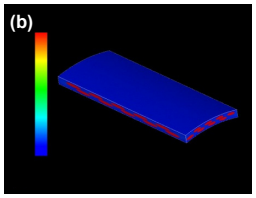
Meso-scale modeling of high pressure hydrogen tank for fuel-cell vehicle (a) Type III FRP vessel (b) Winding model (c) FEM model (d) Mises stress distribution





Meso-scale damage propagation analysis of laminate: estimated stiffness deterioration in (a) resin, (b) fiber bundle

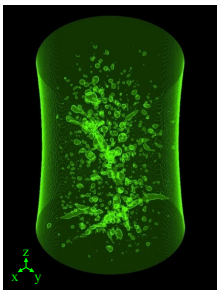




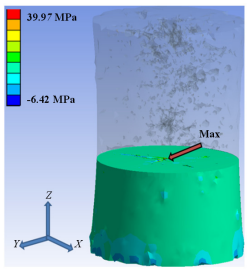
Meso-scale simulation of FW vessel on curing process
(a) Temperature
(b) Degree of cure

Aluminum die cast

Automobile parts by aluminum die casting

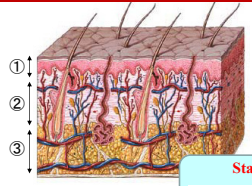


3D porosity distribution obtained by X-ray CT

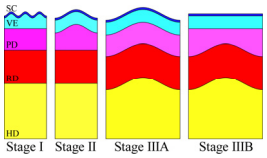


Prediction of fatigue crack initiation site by principal stress

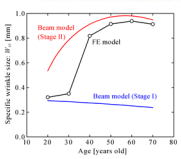
Mechanics of human skin



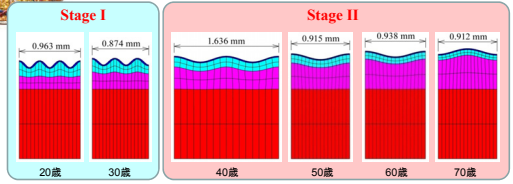
Multi-layer structure of human skin



Multi-layer models and buckling modes

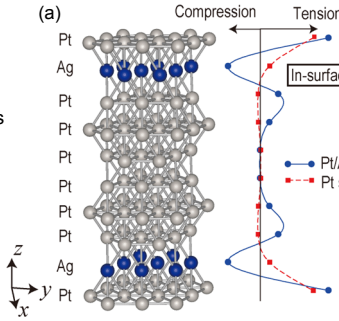


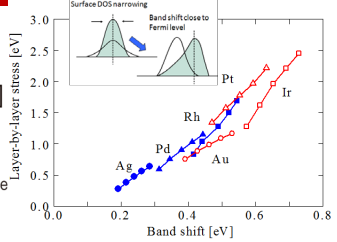
Winkle size vs aging



FEM-predicted variation of buckling mode with aging

Stress in atomistic scale





(a) In-plane stress distribution on PtAgPt and Pt fcc (111) surfaces

(b) Correlation between in-plane stress and d-band shift on the surface layer of late transition metals

Contact details : Y. Shiihara nori@telu.iis.u-tokyo.ac.jp