

# Umeno Lab.

## [Atomistic and electronic modeling analysis of strength and physical properties of solids]

Center for Research on Innovative Simulation Software

<http://www.cmsm.iis.u-tokyo.ac.jp>

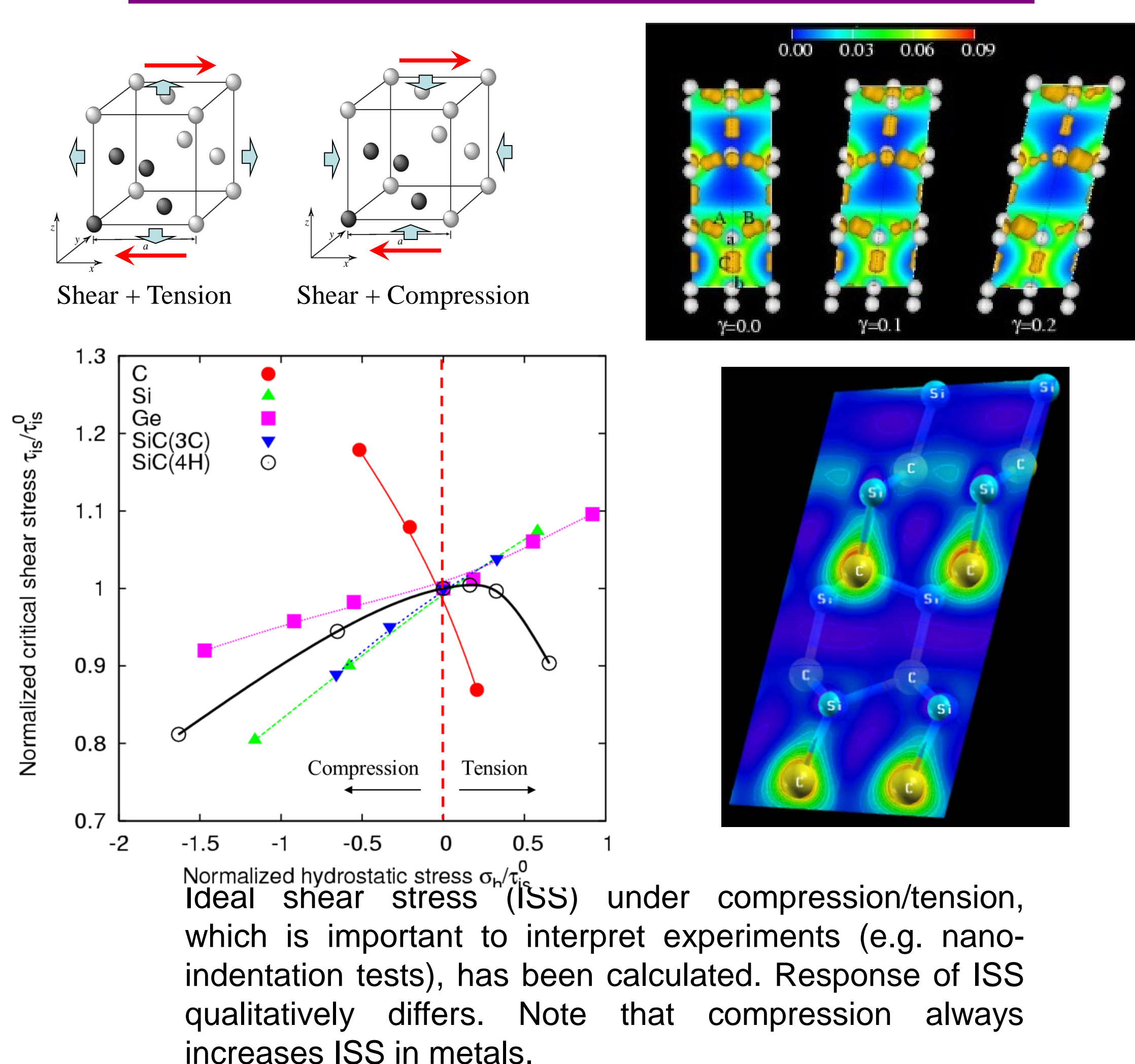
Nanostructured Materials Strength and Science

Dept. of Mechanical Engineering

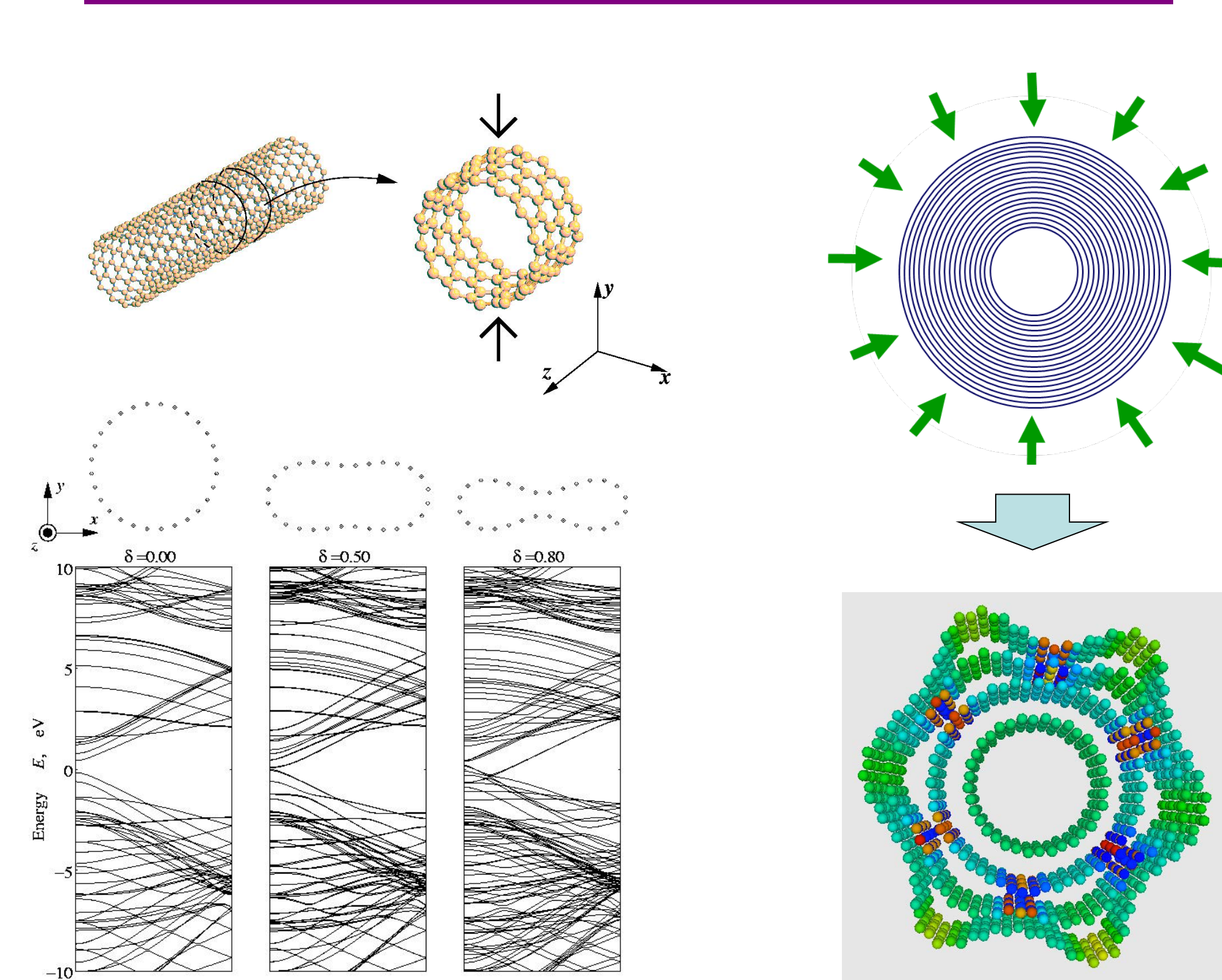
## Toward Theoretical Prediction of Strength and Physical Properties of Nanomaterials

With the aim to reveal fundamentals of the mechanical and physical properties of nanomaterials, we are performing ab initio density functional theory calculations and molecular dynamics simulations.

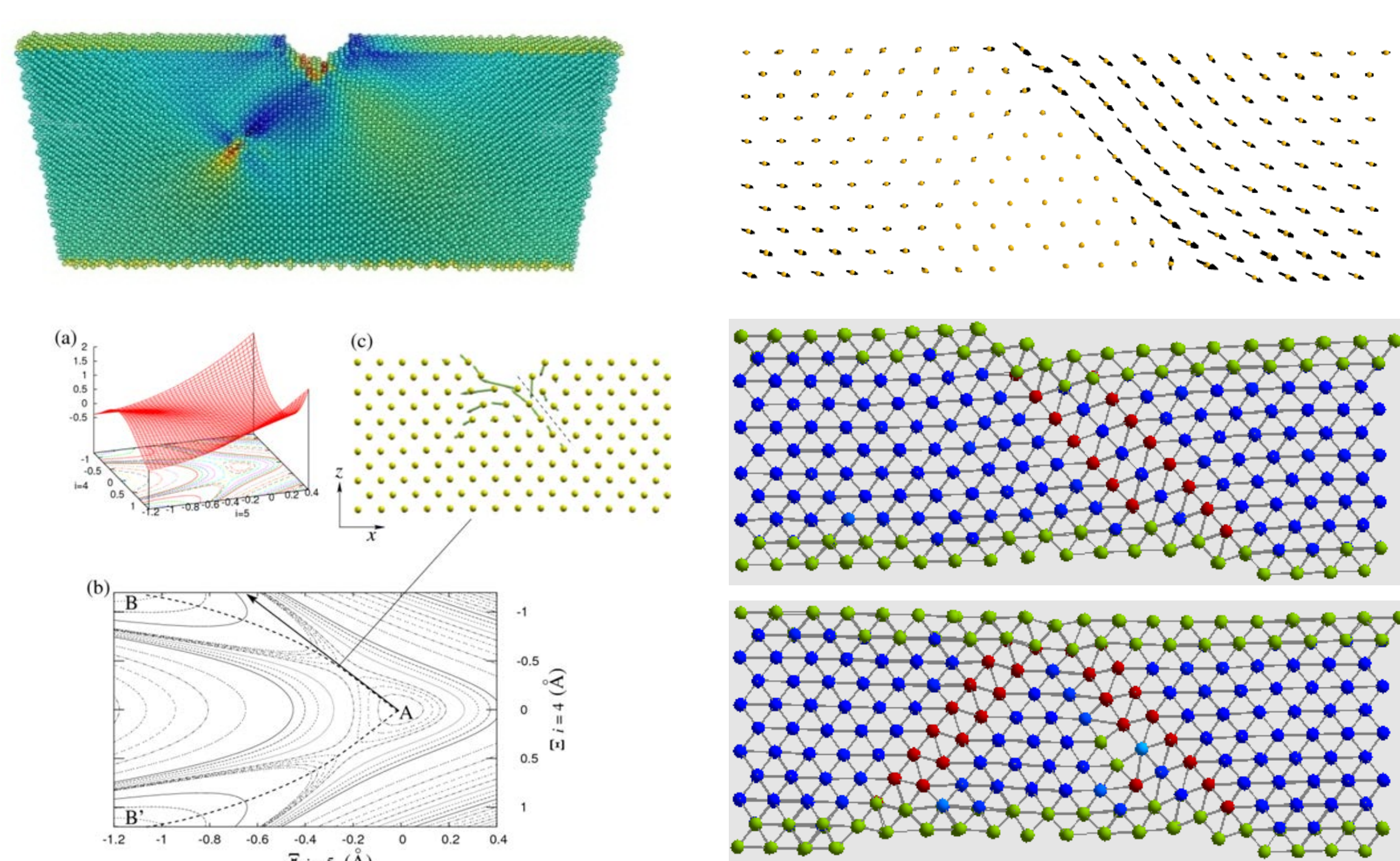
### Effect of normal stress on ideal shear strength



### Compression of carbon nanotubes



### Atomic structure instability analysis



### Deformation of nano-porous metals in electrolyte

