



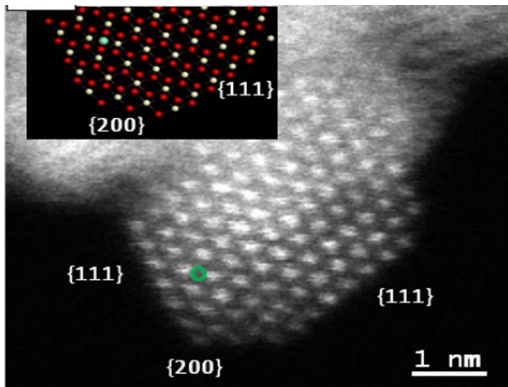
**Shih-Yun Chen**

Professor

Dept. of Materials Sci. & Eng.

Tel: +886-2-2737-6517

[SYChen@mail.ntust.edu.tw](mailto:SYChen@mail.ntust.edu.tw)

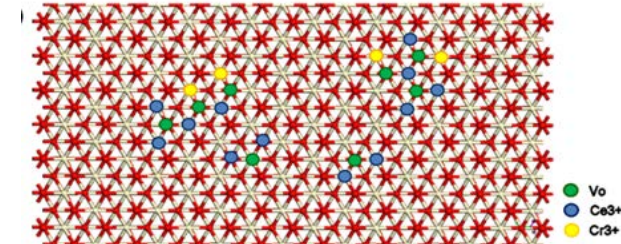
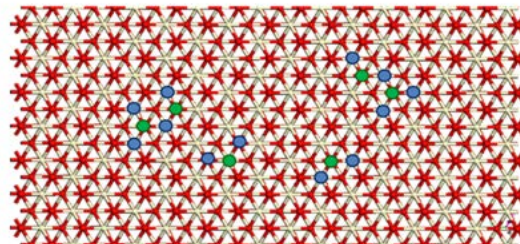
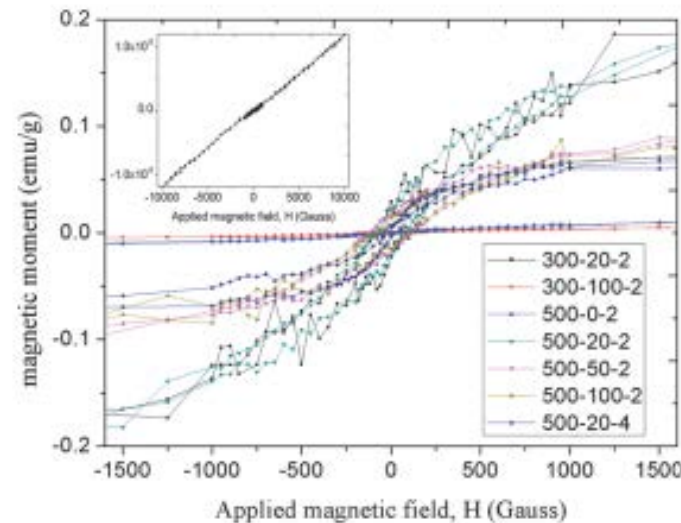
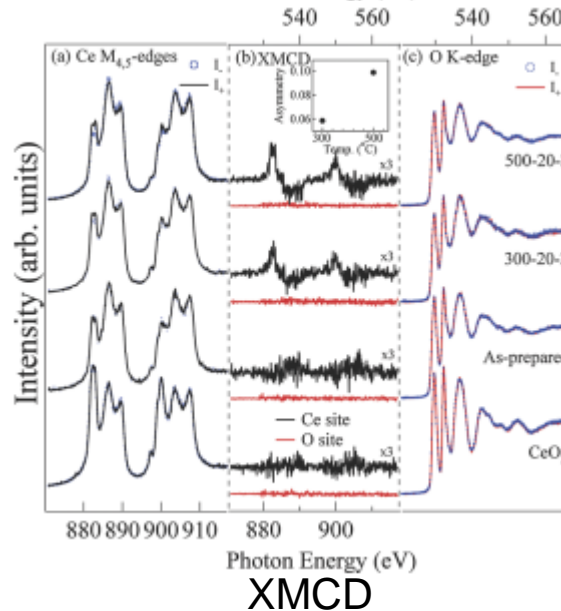


STEM/HAADF

# Transition Metal Oxides



- 1) Magnetic properties of  $(\text{Ce}_{1-x}\text{M}_x)\text{O}_2$ ,  $(\text{Ti}_{1-x}\text{M}_x)\text{O}_2$  (M: transition metal, rare earth elements) system
- 2) Defect analysis





# Bi-metallic nano-materials



- 1) Metallic (Ag, Cu, Au) nanoparticles and nanowires
- 2) Metallic/oxides nanoparticles and nanowires
- 3) Optical properties

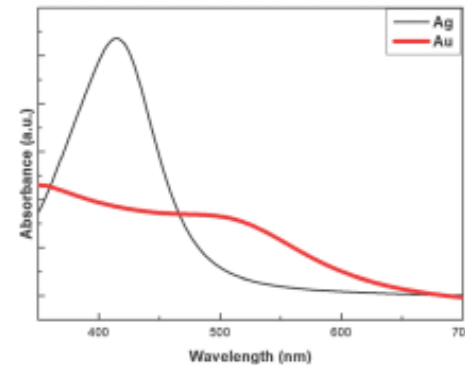
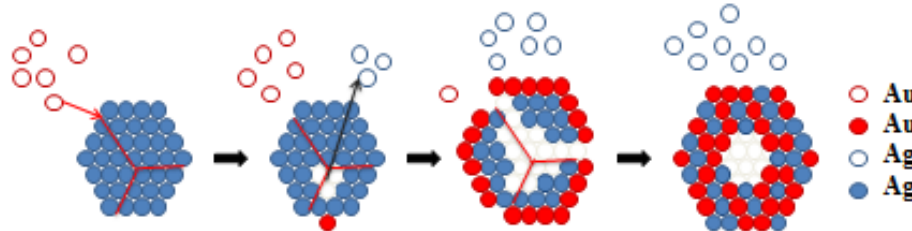
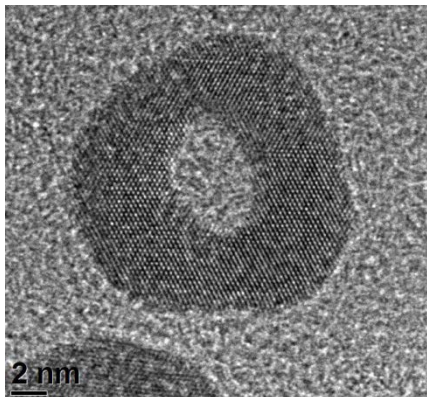
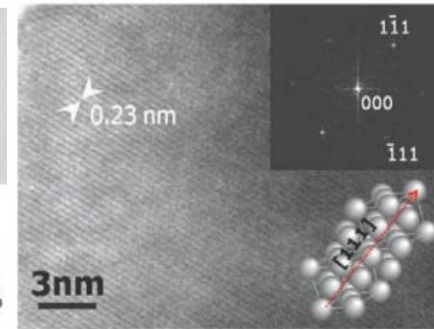
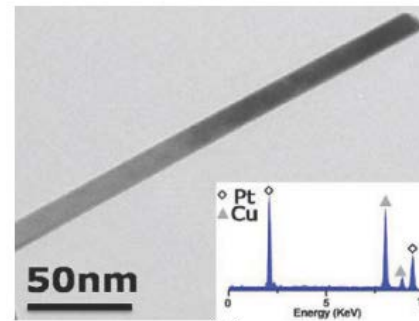
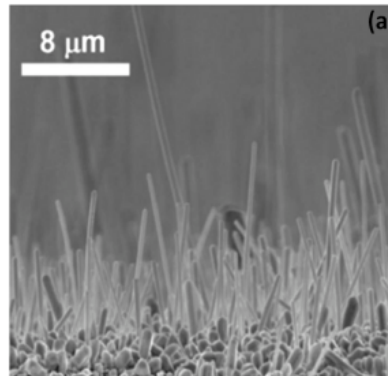
## Shih-Yun Chen

Professor

Dept. of Materials Sci. & Eng.

Tel: +886-2-2737-6517

[SYChen@mail.ntust.edu.tw](mailto:SYChen@mail.ntust.edu.tw)

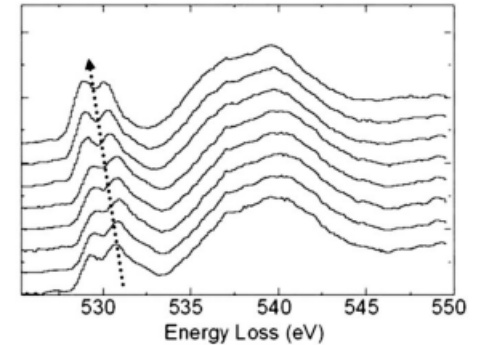


# Microscopy and Spectroscopy analysis

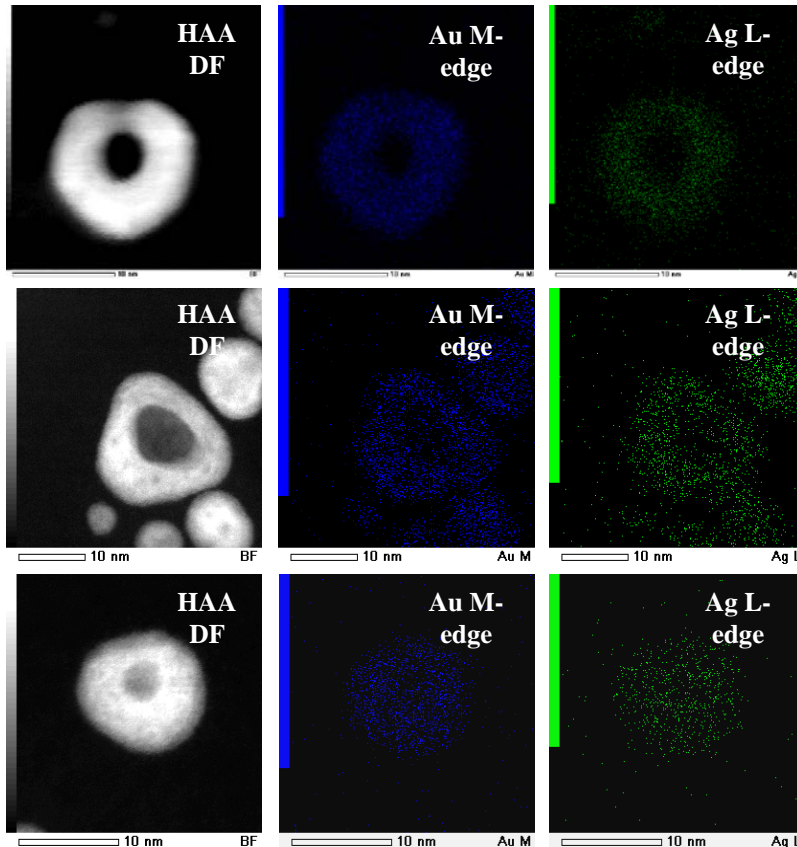


**Shih-Yun Chen**  
Professor

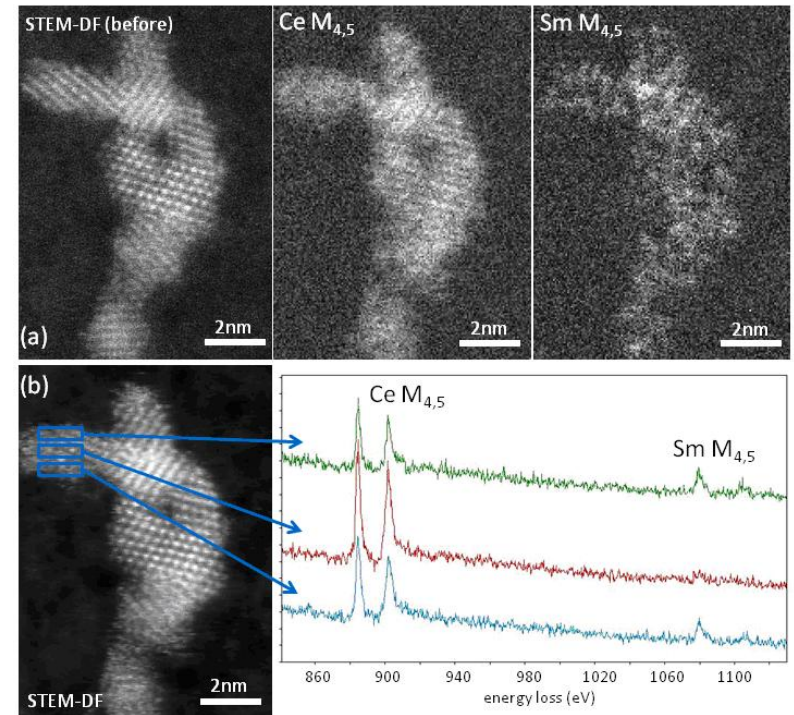
- 1) X-ray absorption spectroscopy (XAS)
- 2) Transmission electron microscopy/electr energy loss spectroscopy (TEM/EELS)



Time-dependence EELS



TEM/EDS mapping of nanoparticles



High resolution STEM/EELS