

## K. ISHII LAB.

## [Functionalization of Molecules]

Department of Materials and Environmental Science

www.k-ishiilab.iis.u-tokyo.ac.jp

## Functional Metal Complexes Chemistry

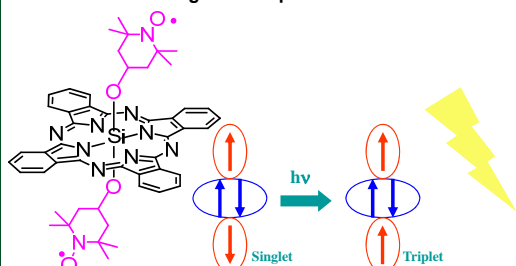
Department of Applied Chemistry, Graduate School of Engineering

## Functionalization of Molecules

The discovery and elucidation of new electronic structures are important not only for pioneering frontier science but also for developing new functions. Since metal complexes have various electronic structures, coordination chemistry is promising for designing electronic properties. We aim to create novel functions of organic-inorganic hybrid compounds in terms of coordination chemistry, photochemistry, and spin chemistry

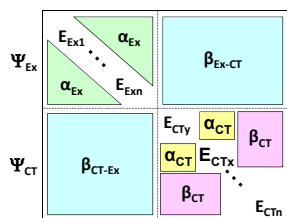
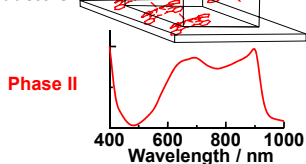
## Chemistry of Photofunctional Molecules

Photocontrol of Magnetic Properties



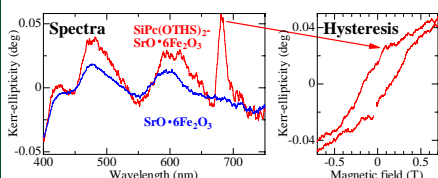
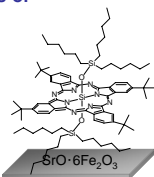
Photocontrol of Radical Spins

Theoretical Calculations of Organic Photoconductors

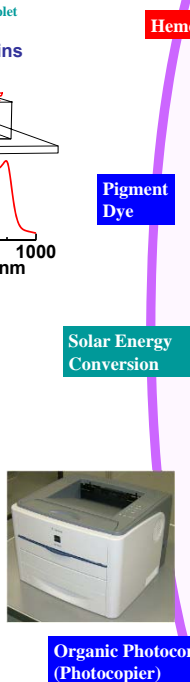


Theoretical Calculations of Molecular Crystals

Molecular Magneto-Optical Materials

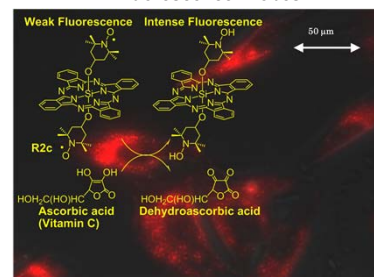


Molecular Magnetic Hysteresis at Room temperature



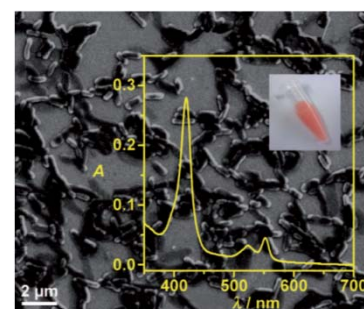
## Chemistry of Biofunctional Molecules

Fluorescence Probes



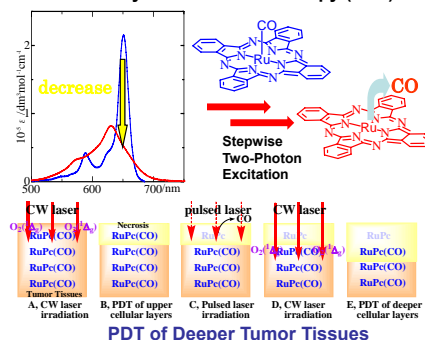
Fluorescence Bioimaging of Vitamin C in Cancer Cells

Spectroscopic Molecular Detections in Bacteria



Spectroscopic Observations of Cytochrome c in Bacteria

Photodynamic Cancer Therapy (PDT)



PDT of Deeper Tumor Tissues