

Structural Energy Bioscience Lab. Institute of Advanced Energy, Kyoto University

Research Information



PI Name : Masato KATAHIRA, Professor

E-mail : katahira.masato.6u@kyoto-u.ac.jp

Participant : Takashi NAGATA, Associate Professor

Other staff members: Tsukasa MASHIMA, Assistant Professor

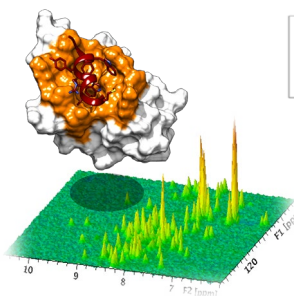
Research Field

Structural Biology, Biophysics, Molecular Biology, Woody Biomass, Bioenergy, Fungus, Enzymology, Wood degradation, NMR spectroscopy, Protein science, Protein engineering, Nucleic Acid, G-quadruplex, Drug, Functional RNA, Disease, Cancer, Prion, HIV, Lignin, Cellulose, Hemicellulose, Lignocellulose, Protein-nucleic acid interaction, Functional RNA, aptamer, IncRNA

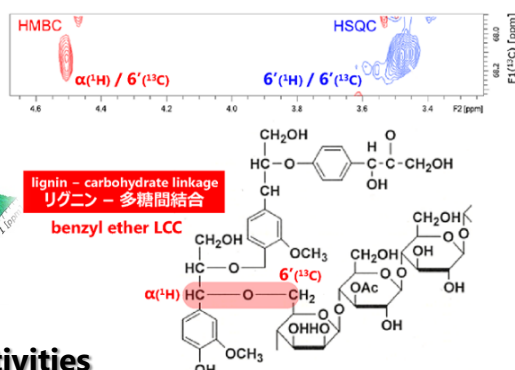
Research Facility



Peptide drug
against cancer



First evidence of the lignin – carbohydrate linkage inside the
plant cell wall was obtained by NMR techniques



Research Activities

- 1) On-going research: We apply Structural biology to investigate the function of the enzymes involved in degradation of woody biomass. Another aim of our study is to develop methods to obtain novel wood-based materials that can be used for next-generation industry to achieve sustainable development goals. We also use Structural biology to study human diseases and develop drugs.
- 2) Past and current international collaborators: Harvard Medical School, NIH, ETH, UCSF, Kansas State University, University of Kansas, University of Albany, Goethe-University

Comments

Our lab is dedicated to the development of methodologies for utilization of woody biomass and uncovering of the molecular mechanisms of human diseases by means of Structural Biology. Students who like at least one of physics, chemistry, or biology may fit and enjoy our lab. We can share our NMR skills trained for biomolecules such as proteins, nucleic acids, lignin, oligosaccharides, and so on.