Division of Chemistry
Department of Integrated Human Sciences

Outline

Chemistry is an essential tool for understanding the pharmaceutical sciences. Our department provides lectures in general chemistry and introductory chemistry laboratory. Current research interests are (1) searching for new catalysts for asymmetric synthesis, (2) devising new catalyst media for enzyme reaction, and (3) developing theoretical photoelectron spectroscopy. Our research areas span physical, organic, and biological chemistry.

Faculty members

Professor: Ichiro Suzuki, Ph.D.
Lecturer: Masataka Horiuchi, D.Eng.
Lecturer: Yoshi-ichi Suzuki, Ph.D.

Main research in progress

1) Organic chemisty (Suzuki, I.)
2) Protein science (Horiuchi, M.)
3) Chemical physics (Suzuki, Y.)

Current publications

* Establishment of the BacMam system using silkworm baculovirus. Imai, A.; Tadokoro, T.; Kita, S.; Horiuchi, M.; Fukuhara, H.; Maenaka, K.: *Biochem. Biophys. Res. Commun.*, 478(2):580–5, 2016.
* Pump–probe photoelectron spectroscopy by a high-power 90 nm vacuum-ultraviolet laser. Sato, M; Suzuki, Y.-i.; Suzuki, T; Adachi, S.: *Applied Physics Express 9*: 022401, 2016.
* Linear and circular dichroism in photoelectron angular distributions caused by electron correlation. Suzuki, Y.-i.; Suzuki T.: *Phys. Rev*. A 91: 053413, 2015.
* The N-terminal domain of TIR domain-containing adaptor molecule-1, TICAM-1. Kumeta, H.; Sakakibara, H.; Enokizono, Y.; Ogura, K.; Horiuchi, M.; Matsumoto, M.; Seya, T.; Inagaki, F.: *J. Biomol. NMR.*, 58:227–230, 2014.
* Structures and interface mapping of the TIR domain-containing adaptor molecules involved in interferon signaling. Enokizono, Y.; Kumeta, H.; Funami, K.; Horiuchi, M.; Sarmiento, J.; Yamashita, K.; Standley, D. M.; Matsumoto, M.; Seya, T.; Inagaki, F.: *Proc. Natl. Acad. Sci. USA.*, 110:19908–19913, 2013.
* SuperNova, a monomeric photosensitizing fluorescent protein for chromophore-assisted light inactivation. Takemoto, K.; Matsuda, T.; Sakai, N.; Fu, D.; Noda, M.; Uchiyama, S.; Kotera, I.; Arai, Y.; Horiuchi, M.; Fukui, K.; Ayabe, T.; Inagaki, F.; Suzuki, H.; Nagai, T.: *Sci. Rep.*, 3: 2629, 2013.
* Effective attenuation length of an electron in liquid water between 10 and 600 eV. Suzuki, Y.-i.; Nishizawa, K.; Kurahashi, N.; Suzuki, T.: *Phys. Rev*. E 90, 010302, 2014.
* A low-cost affinity purification system using β-1,3-glucan recognition protein and curdlan beads. Horiuchi, M.; Takahasi, K.; Kobashigawa, Y.; Ochiai, M.; Inagaki, F.: *Protein Eng. Des. Sel.*, 25: 405–413, 2012.