

March 3, 2022

B1: Recent achievements and future perspectives in materials science at SACLA

Chair: I. Matsuda, T. Suzuki
(Univ. Tokyo)

Opening talk

10:00-10:10

“Condensed-Matter Science using XFEL (tentative)”

T. Arima (Univ. Tokyo)

From facility side

10:10-10:20

“Recent progress and development plans for materials science at SACLA”

Y. Kubota (SACLA)

From user side

10:20-10:45

“Ultrafast control of charge density wave system and superconductors by high field terahertz pulses”

R. Shimano (Univ. Tokyo)

10:45-11:10

“ Ultrafast manipulation of effective interactions in quantum materials”

M. Mitrano (Harvard Univ.)

11:10-12:00

Round table discussion

Chair: I. Matsuda and T. Suzuki (Univ. Tokyo)

Comments to the SXFEL beamlines, SACLA BL-1

- Controls of XFEL high-harmonics
- Generations of circular polarized light
- Advanced spectroscopy for liquid systems
- Multi-color usages of the nano-focusing Wolter mirror : pump-probe experiment
- Multi-color usages of the nano-focusing Wolter mirror : multi-color imaging
- Usage of the user-friendly chamber for soft X-ray non-linear spectroscopy

Comments to the THz pump & X-ray probe experiments, SACLA BL-3

- THz generations by tilted pulse front LiNbO₃ vs two-color air plasma
- Organic crystal, BNA-S, is better in terms of frequency and alignment
- Narrow vs broad band can be easily switched by placing and displacing a filter
- Magnetic component of terahertz pulse is also important as a pump
- In the future, vector beams of terahertz, radial or azimuthal, is great to induce as a specific magnetic field