The 3rd Japan-Turkey Collaborative Symposium on Magnetism (JTSM)

- Date -

April 15-17, 2025

- Place -

Tohoku University, Sendai, Miyagi, Japan

- Organizer -

Mehmet C. Onbasli (Koc University),
Taichi Goto (Tohoku University)

Program

April 15

15:00-15:15
A01
“Opening Talk”
Taichi Goto (Associate Professor, Tohoku University)

15:15-15:35
A02
“Characterization of Magneto-optical Response of MnGe Prepared by Pulsed Laser Deposition”
Taichi Goto (Associate Professor, Tohoku University)
Two-dimensional MnGe materials prepared by pulsed laser deposition at Koç University were measured using a magneto-optical measurement system at Tohoku University. Faraday rotation spectra and transmission spectra will be presented, and future work will be discussed.

15:35-15:55
A03
“Exchange Stiffness Constants of Cerium-substitute Yttrium Iron Garnet Determined by Micromagnetics Simulation”
Takumi Koguchi (PhD Student, Tohoku University)
Magnetic domain width and domain wall width are related to exchange stiffness constants. Pure Bloch or Néel type domains can be described by conventional equations assuming a stripe state, but those in thin magnetic iron garnet cannot due to their mixed state. In this study, three-dimensional magnetic domain states were calculated using micromagnetic simulations, and the influence of exchange stiffness constants was analyzed.

15:55-16:15
A04
“Dynamic Magnetic Domain Hologram Lens Controlling Focal State”
Hibiki Miyashita (PhD Student, Tohoku University)
Magnetic domains can be written with sizes less than one-fourth of the wavelength. Such characteristics are useful for reconfigurable hologram lenses. In this study, we demonstrated the dynamic control of focal points of reflected laser light using a magnetic hologram lens constructed with magnetic garnet and a permanent magnet.

16:15-17:00
A05
“Project Progress on Magneto-optical Material Development and Micromagnetics Simulation”
Mehmet C. Onbasli (Associate Professor, Koc University)
We will provide an overview of the two-dimensional (2D) spatial light modulator (SLM) project and its progress. Then we will present the epitaxial growth of materials for the project. We will analyze and discuss the magneto-optical spatial light modulator (MOSLM) requirements for efficient and high-speed operation. Finally, we will present future opportunities and challenges in materials and device improvements achievable in the project and in the future in general.

17:00-17:15
A06
“Closing Talk”
Kazushi Ishiyama (Professor, Tohoku University)
We will discuss the details of the experiment. Additionally, we will address the specifics of the schedule for the next symposium and meeting.

18:00-20:00
Dinner

April 16

13:00-15:00
B01
Lab Tour & Experiment

April 17

13:00-17:00
C01
Experiment & Discussion on Future Work