兆赫光電研究中心

THz Optics & Photonics Centre (TOP Centre)

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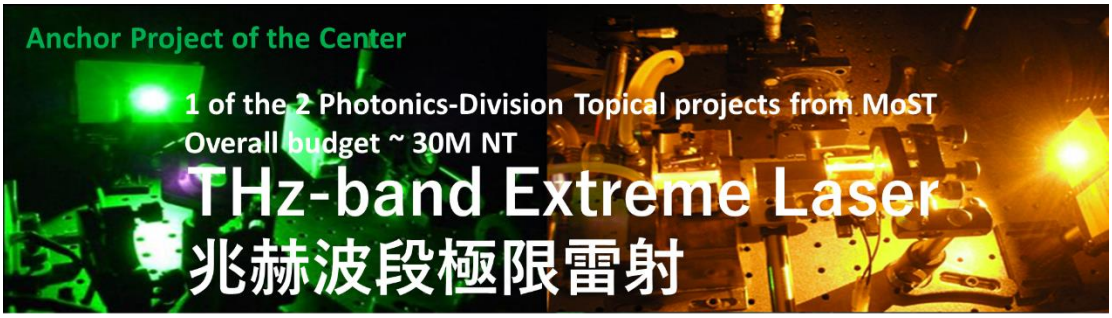
The mission of the THz Optics & Photonics Centre (TOP Centre) is to integrate scholars and students across the NTHU campus to conduct advanced research on the physics, engineering, and application of THz optics, electronics, and photonics. In the Centre, we have approximately 15 faculty members. Since Dec. 2019, the University has approved it as an official centre under the School of Electrical Engineering and Computer Science (EECS). The TOP Centre is a physical centre, occupying a space in the EECS building provided by the EE Department. The 3 co-authors of this abstract are appointed by the School of EECS as the director and associate directors of the Centre.

The TOP Centre has 4 research groups, including laser & nonlinear optics, optoelectronics, ultrafast electronics, and vacuum electronics. Each group has 3-4 faculty members and their students. It is not possible to list in this abstract all the accomplishments for tens of people in this Centre. To name a few, we are running 1 of the 2 topical projects from the MoST Photonics Division, titled “THz Extreme Laser Project”, with a budget scale of about 30M NT. We are also carrying out a Taiwan-Sweden collaboration project, titled “Chip-size THz accelerator for material and health research”, with a total budget exceeding 1M Euros. Our associate director, Prof. Yang, is awarded with a 3-year grant from the prestigious 2020 Human Frontier Science Program with a total budget of 1.35M USD. High-impact publications, real-world applications, and international networking are all required by our funding agencies. The budget of these 3 grants is about 8-10 times that we have received from the university.

As a centre, what we are most proud of is our ability to connect people. Internationally, we network with several high-profile teams via the two aforementioned international projects. We are part of the ACHIP network at Stanford University, which consists of some 15 institutions worldwide. We signed 3 collaboration memos with institutions in the US, Russia, and Japan. Domestically, we connect people by running regular meetings, offering courses, providing technical services, and forming a big chat group in LINE. On the due date of this abstract, we are hosting the 29th bi-weekly collaboration meeting for our Centre. We have been offering 3 rounds of an intense lab course during Summer. With our expensive equipment in the HOPE Laboratory of the Photonics Research Centre, we have served numerous research groups and industry people on optical coating, wafer dicing, optical measurement, and cleanroom process. We have a TOP Centre Outreach LINE Group, consisting of more than 60 people chatting on a daily basis.

In the past 3 years, we have established an outstanding and sustainable Centre. The Centre will continue to play a key role in the worldwide THz community.



Large International Collaboration Projects

2020 Human Frontier Science Program Research Grant Award（$1.35M USD/3YRs）

National Tsing Hua University, University of Pittsburgh, University of Cambridge, UK; University of Victoria, Canada.

Part of the Stanford ACHIP International Network

Partner Institutions https://achip.stanford.edu/

DESY, EPFL, FAU Friedrich-Alexander Universität Erlangen-Nürnberg, Purdue University, PSI Paul Scherrer Institut, SLAC National Accelerator Laboratory, Stanford University, TECH-X, Technische Universität Darmstadt, UCLA, Hamamatsu, 國立清華大學 National Tsing Hua University, Los Alamos National Laboratory, Gordon and Betty Moore Foundation

Established Center Service Facilities