

Date: Sep. 9th, 2020

Applicant: 陳家祥

Eligibility:

- Affiliation: adjunct professor, Institute of photonics technologies/Electrical Engineering, NTHU; assistant engineer, Beam dynamics group/light source division, NSRRC
- Research: THz optics, beam and radiation simulation

Proposal Category: A

Project note: I plan to design a keV-level beam injector for THz radiation generation. The electron beam injector design relies on using simulation codes for the particle tracking and EM wave generation. I will be doing computer simulations by using the simulation cluster in the TOP Center.

Service Requests to TOP Center: A computer account (50k NT from my research project will be paid to TOP by this Nov. for this computer account)

Budget Request to TOP Center: 50k NT

Results: to be updated

Proposal Category: B

Service delivered and to be delivered to the TOP Center: I have offered the Optics Lab course for the TOP Center in two consecutive years. I will continue to maintain, improve, and run the lab course in EE420 for students during summers.

Budget Request to TOP Center: 50k NT

Results:



Proposal Category: C

Team Members: 黃衍介、王威智、陳家祥

Joint Project: Smith-Purcell/Cherenkov laser

Project Description: This is a joint effort to generate coherent IR and THz radiations from keV electron pumped micro and nano photonics structures. The radiation mechanism is so-called Smith-Purcell radiation above a grating structure or Cherenkov radiation inside a dielectric. I will be responsible for establishing the CST simulation tools to study the physics and provide guideline for structure fabrication.

Budget Request to TOP Center: 100k NT

Result: to be updated