

List of TTI Laboratories Accepting Research Intern Students in Academic Year 2024

	Laboratory	Supervisor(s) Main supervisor in bold	Intern Student's Academic Year at the start of Internship *1			Duration of Internship(days)			Internship Months (for academic year 2024)									Research Overview:	Requirements for Intern Students :	
			B4	M	D	30-60	61-90	91 or longer	Jun 2024	Jul	Aug *2	Sep	Oct	Nov	Dec *2	Jan 2025	Feb			Mar
A	Intelligent Information Media	Prof. Norimichi UKITA	N/A	●	●	N/A	N/A	● 180 days or longer strongly required *3	●	●	●	●	●	●	●	●	●	●	<ul style="list-style-type: none"> ➤ Research topics: image processing, image synthesis, image recognition, computer vision, robotics (robot arm manipulation) ➤ provide support in various programming, system development and software engineering projects ➤ support in the software development life cycle: researching, designing, implementing, testing software, documenting, deployment and maintenance 	<ul style="list-style-type: none"> ➤ Programming (Python) –Advanced level ➤ Advanced knowledge of machine learning
B	Quantum Interface	Prof. Itaru KAMIYA, Assist. Prof. Ronel ROCA	●	●	●	●	●	N/A	●	●	●	●	●	●	●	●	●	●	<ul style="list-style-type: none"> ➤ Molecular Beam Epitaxial (MBE) growth of semiconductor quantum structures. ➤ Optical and structural analyses of the above. ➤ Surface passivation of the above. ➤ Simple device prototyping of the above. 	<ul style="list-style-type: none"> ➤ Major: Physics, Applied Physics, Electronic Engineering, Materials, Chemistry. ➤ Knowledge in Quantum Mechanics, Statistical Mechanics, and Thermodynamics. ➤ Fundamental knowledge of semiconductors and computer programming
C	Laser Science	Prof. Takao FUJI, Lecturer Tetsuhiro KUDO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	<ul style="list-style-type: none"> ➤ Infrared imaging with ultrafast lasers ➤ Development of ultrafast lasers ➤ Manipulation of molecules by mid-infrared lasers 	<ul style="list-style-type: none"> ➤ Knowledge in Optics ➤ Fundamental knowledge of computer programming
D	Fluid Engineering	Assoc. Prof. Yasumasa WATANABE	●	●	●	●	●	N/A	N/A	●	●	●	●	N/A	N/A	N/A	N/A	N/A	<ul style="list-style-type: none"> ➤ Study on compressible flows, especially on supersonic phenomena; ➤ Optical measurement of the above; ➤ Numerical simulation of the above; ➤ Students majoring Fluid Dynamics. ➤ Students majoring Mechanical Engineering will also be accepted. 	<ul style="list-style-type: none"> ➤ Knowledge in Compressible Fluid Dynamics, Aerodynamics, and Thermodynamics. ➤ Fundamental knowledge of aerospace and computer programming
E	Surface Science	Prof. Masamichi YOSHIMURA, Assoc. Prof. Masanori HARA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	<ul style="list-style-type: none"> ➤ Growth and characterization of 2D nanomaterials such as graphene and TMDs for device applications ➤ Fabrication of transparent conductive films using carbon nanomaterials ➤ Nanoscale observation of nanomaterials using scanning probe microscope and other microscopies ➤ Tip enhanced Raman spectroscopy on nanomaterials ➤ Synthesis and evaluation of the catalysts for water electrolysis ➤ Fabrication and evaluation of the electrode materials for polymer electrolyte fuel cell ➤ Observation of the morphology change of metal nanoparticles by electrochemical atomic force microscopy 	<ul style="list-style-type: none"> ➤ Fundamental knowledge of physics and chemistry

F	Micro/nano-mechatronics	Prof. Minoru SASAKI	●	●	●	●	●	N/A	●	●	●	N/A	N/A	N/A	N/A	N/A	N/A	N/A	➤ Simple MEMS device fabrication and its driving experiment (Minor change of Si etching recipe compared to previous recipe)	➤ Preference will be given to those whose supervisor at their home university is interested in future academic/research collaboration with our laboratory. ➤ Preference will be given to those whose supervisor at their home university is interested in accepting intern students from our laboratory.
G	Advanced Electron Devices	Prof. Naotaka Iwata Dr. Maria Emma Villamin	N/A	●	●	●	●	N/A	●	●	●	●	N/A	N/A	N/A	N/A	N/A	N/A	➤ Fabrication and characterization of compound semiconductor devices, especially for R&D of GaN high electron mobility transistor (HEMT) and/or superjunction device, that includes fabrication process development, and/or fabrication, measurement & analysis of the above devices	➤ Fundamental knowledge of compound semiconductor (GaN etc.), fabrication process, and semiconductor devices (HEMT etc.) ➤ Independent and motivated person who knows basic knowledge (and skill, if possible) of fabrication process and semiconductor devices

*1 B4: Undergraduate students in their fourth year, M: Master's students, D: Doctoral students

*2 No research activities/supervision provided during 10-day summer holidays in August and 2-week winter holidays in December-January.

*3 TTI scholarship applies for the first 90 days spent for internship activities at TTI. From the 91st day, the laboratory provides the scholarship. Applicants for the internship longer than 90 days are required to meet higher standards in the selection criteria.

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