

List of TTI Laboratories Accepting Research Intern Students

	Laboratory	Supervisor(s) Main supervisor in bold	Intern Student's Academic Year *1			Duration of Internship(days)			Internship Months (for academic year 2023)							Research Overview:	Requirements for Intern Students :		
			B4	M	D	30-60	61-90	91 or longer	Jul 2023	Aug *2	Sep	Oct	Nov	Dec	Jan 2024			Feb	Mar
A	Fluid Engineering	Assoc. Prof. Yasumasa WATANABE	●	●	●	●	●	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
B	Surface Science	Prof. Masamichi YOSHIMURA , Assoc. Prof. Masanori HARA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	<ul style="list-style-type: none"> ➤ Growth and characterization of carbon nanomaterials such as graphene and carbon nanotubes ➤ 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
C	Design Engineering	Assoc. Prof. Masakazu KOBAYASHI	●	●	●	●	●	●	N/A	N/A	●	●	●	●	N/A	N/A	●	<ul style="list-style-type: none"> ➤ Kansei engineering and Ergonomics ➤ Theory of structural optimization and application to mechanical products / parts ➤ Remote control system of UAV ➤ Application of machine learning to the above research topics 	<ul style="list-style-type: none"> ➤ Basic knowledge of the above research topics ➤ Basic programming skills ➤ Both mechanical engineering students and computer science students interested in product development are welcome.
D	Information and Communication Engineering	Assoc. Prof. Hajime MATSUI	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	<ul style="list-style-type: none"> ➤ Construction and simulation of error-correcting codes in classical, quantum, and digital communications 	<ul style="list-style-type: none"> ➤ Knowledge in Mathematics, algebraic theories such as group, ring, field, and module. ➤ Fundamental knowledge of information theory and computer programming.
E	Quantum Interface *3	Prof. Itaru KAMIYA , Assist. Prof. Ronel ROCA	●	●	●	●	●	N/A	●	●	●	●	●	●	N/A	N/A	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. ➤ Students majoring applied physics will also be accepted 	<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
F	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

*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

*3 English is the official language used in the Lab. However, for daily life, basic knowledge in Japanese is recommended.

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