

LAB NAME	Title	Name of Faculty Member	School/Institute	Department	Research areas	Special academic conditions required for research •Prerequisite knowledge and/or specific skill and its proficiency -Required study field(s)	URL
1 SEKIMOTO	Associate Professor	Yoshihide SEKIMOTO	Center for Spatial Information Science & Institute of Industrial Science	Dept of Civil Engineering	Estimation of People Flow in Combination of Sensing and Behavior Modeling; Infrastructure Information & Geospatial Information Management	Some interests in spatial information science for urban management	<a href="http://seklab.iis.u-tokyo.ac.jp/human-centered-urban-informatics/">http://seklab.iis.u-tokyo.ac.jp/human-centered-urban-informatics/</a>
CONCRETE	Professor Assistant Professor	Tetsuya ISHIDA Yuya TAKAHASHI	School of Engineering	Dept of Civil Engineering	Concrete structure and material	Mechanics of materials, structural mechanics, concrete structure	<a href="http://concrete.t.u-tokyo.ac.jp/en/2017/index.html">http://concrete.t.u-tokyo.ac.jp/en/2017/index.html</a>
3 TAKEUCHI	Professor	Wataru TAKEUCHI	Institute of Industrial Science	Dept of Civil Engineering	Remote sensing	No specific knowledge required	<a href="http://vrlab.iis.u-tokyo.ac.jp/en/index_e.html">http://vrlab.iis.u-tokyo.ac.jp/en/index_e.html</a>
4 NAGAI	Associate Professor	Kohhei NAGAI	Institute of Industrial Science	Dept of Civil Engineering	Concrete structure and material	Applicants who have basic knowledge of reinforced concrete and structural engineering. At least, he/she should have taken a lecture on concrete engineering.	<a href="http://www.nagai.iis.u-tokyo.ac.jp/index_en.html">http://www.nagai.iis.u-tokyo.ac.jp/index_en.html</a>
5 BRIDGE	Associate Professor Assistant Professor	Tomonori NAGAYAMA DI SU	School of Engineering	Dept of Civil Engineering	Bridge Engineering, Structural Dynamics	Structural mechanics and dynamics, basic programming knowledge	<a href="http://www.bridges.t.u-tokyo.ac.jp/index_e.html">http://www.bridges.t.u-tokyo.ac.jp/index_e.html</a>
6 GEOTECH	Professor	Junichi KOSEKI	School of Engineering	Dept of Civil Engineering	Experimental study on mechanical behavior of geomaterials	1) Prerequisite knowledge and/or special skills and level of proficiency Basic knowledge on soil mechanics and geotechnical engineering; 2) Required academic background Specialization in the field of civil engineering	<a href="http://geotile.t.u-tokyo.ac.jp/research/">http://geotile.t.u-tokyo.ac.jp/research/</a>
7 YOKOZEKI	Associate Professor	Tomohiro YOKOZEKI	School of Engineering	Dept. of Aeronautics and Astronautics	Numerical/experimental analysis of functional aerospace structures Dynamic response of grid-type light weight structures is numerically or experimentally investigated in this project. Analytical results will be compared with experimental data.	1) Prerequisite knowledge and/or special skills and level of proficiency Knowledge of FEM, Programming: Python, Matlab 2) Required academic background: Graduate students are preferred.	<a href="http://www.aastr.t.u-tokyo.ac.jp/index_e.html">http://www.aastr.t.u-tokyo.ac.jp/index_e.html</a>
8 TKOSEKI	Professor	Takafumi KOSEKI	School of Engineering	Dept. of Electrical Engineering and Information Systems	electric engineering for transportation, e.g., electric railway system, electric energy conversion, electric machinery, control engineering	Basic knowledge on electromagnetics, electric circuit and electric measurement	<a href="http://koseki.t.u-tokyo.ac.jp/index_en.html">http://koseki.t.u-tokyo.ac.jp/index_en.html</a>
9 YANAGIMOTO	Professor	Jun YANAGIMOTO	School of Engineering	Dept. of Mechanical Engineering	Advance knowledge of established forming technologies for engineering materials such as prediction and control of isotropy in sheet metal rolling. Develop novel forming technologies for engineering materials such as warm forming of Carbon Fibre Reinforced Polymer. Advance knowledge of established engineering materials such as strain-rate- and temperature-dependence of phase transformation kinetics in High Strength Steel by material genome characterisation, correlating processing conditions to microstructural evolution and to mechanical properties. Develop novel engineering materials such as hot extruded aluminum-graphene alloy. Develop novel engineering structures such as aluminum alloy-Carbon Fibre Reinforced Polymer sandwich structure with dome-shaped core.	1) Prerequisite knowledge and/or special skills and level of proficiency Any of the following: New material design, structural design, thermo-mechanical processing, material characterisation, mechanical testing, Finite Element Method, regression analysis 2) Required academic background Mechanical Engineering, Materials Engineering or Aerospace Engineering 3) Academic or research project experiences beneficial during selection process Design and execution of laboratory experiments using thermo-mechanical testing machines, servo-mechanical press, tensile testing machine with Digital Image Correlation for strain measurement, multi-purpose mechanical testing machine, autoclave, Scanning Electron Microscope equipped with Energy-Dispersive X-Ray Spectroscopy and Electron Backscattered Diffraction, Finite Element Method via Abaqus CAE and / or mathematical models 4) Other conditions (if any) Capable of generating original research ideas, organising research schedule, undertaking research in a safe and ethical manner, presenting research results in lab seminars	<a href="http://www.cem.t.u-tokyo.ac.jp/?lang=en">http://www.cem.t.u-tokyo.ac.jp/?lang=en</a>
10 YSUZUKI	Professor	Yuji SUZUKI	School of Engineering	Dept. of Mechanical Engineering	Numerical simulation of heat exchanger High-performance compact heat exchangers are necessary for efficient thermal systems. In this study, counter-flow plate heat exchangers with oblique wavy walls will be investigated using numerical simulations to realize significant heat transfer enhancement without large pressure loss. Simulation including liquid-gas phase change will be made using ANSYS with user defined functions.	1) Prerequisite knowledge and/or specific skill and its proficiency : Programming in C language 2) Required study field(s): Mechanical engineering (especially, fluid mechanics and heat transfer)	<a href="http://www.mes.t.u-tokyo.ac.jp/">http://www.mes.t.u-tokyo.ac.jp/</a>
11 TAKAGI	Professor	Shu TAKAGI	School of Engineering	Dept. of Mechanical Engineering	Fundamental Fluid Mechanics, Vector Analysis, Differential Equation	None	<a href="http://www.fel.t.u-tokyo.ac.jp/index_en.html">http://www.fel.t.u-tokyo.ac.jp/index_en.html</a>
12 KNAKANO	Associate Professor	Kimihiko NAKANO	School of Engineering	Department of Mechanical Engineering	While attention on automated driving of automobiles increases, aiming for augmentation of a driver, human oriented mobility engineering researches such as shared control, human-machine interface, and high level sensing have been conducted. The specific topics are Haptic guidance steering, Human-Machine-Interface of ADAS, In-Vehicle traffic light and Energy harvesting.	• Required study field(s): Mechanical Engineering.	<a href="http://www.knakanolab.iis.u-tokyo.ac.jp/english/index_en.htm">http://www.knakanolab.iis.u-tokyo.ac.jp/english/index_en.htm</a>
13 YSUDA	Professor	Yoshihiro SUDA	Institute of Industrial Science	Dept. of Mechanical Engineering	Dynamics and Monitoring of Vehicle-Infrastructure-Human System Dynamics and Control of Vehicle Systems Study on Advanced Mobility with Motion Simulators		<a href="http://www.rozemi.iis.u-tokyo.ac.jp/index-e.html">http://www.rozemi.iis.u-tokyo.ac.jp/index-e.html</a>
14 DAIGUJI	Professor	Hirofumi DAIGUJI	School of Engineering	Dept. of Mechanical Engineering	thermal engineering		<a href="http://www.thml.t.u-tokyo.ac.jp/en/index.html">http://www.thml.t.u-tokyo.ac.jp/en/index.html</a>
15 KUNIEDA	Professor	Masanori KUNIEDA	School of Engineering	Dept. of Precision Engineering	Micro-machining using electro chemical and physical processes	Special academic conditions required for research • Prerequisite knowledge and/or specific skill and its proficiency Basic knowledge of engineering and physics • Required study field(s) Fundamentals of electricity, and mechanical engineering	<a href="http://www.edm.t.u-tokyo.ac.jp/">http://www.edm.t.u-tokyo.ac.jp/</a>
16 HSUZUKI/OHTAKE	Professor Associate Professor	Hiromasa SUZUKI Yutaka OHTAKE	School of Engineering	Dept. of Precision Engineering	Data processing of 3D scanning data and its engineering applications	• Prerequisite knowledge and/or specific skill and its proficiency good computer programming skill basic knowledge about image processing basic knowledge about computer graphics • Required study field(s) computer algorithms and data structures mathematics (linear algebra, differential geometry)	<a href="http://www.den.t.u-tokyo.ac.jp/english-site/">http://www.den.t.u-tokyo.ac.jp/english-site/</a>
17 HIROSE	Professor	Akira HIROSE	School of Engineering	Dept. of Bioengineering	Artificial neural networks, wireless electronics, and their applications in bioengineering	• Prerequisite knowledge and/or specific skill and its proficiency Knowledge in one of the "required study fields" shown below, undergraduate level • Required study field(s) One or some of electrical, electronic, information and mathematical engineering	<a href="http://www.eis.t.u-tokyo.ac.jp/">http://www.eis.t.u-tokyo.ac.jp/</a>
18 SAKUMA	Professor	Ichiro SAKUMMA	School of Engineering	Dept. of Bioengineering Dept. of Precision Engineering	Biomedical engineering, Computer aided surgery, Biomedical instrumentation		<a href="http://www.bmpc.t.u-tokyo.ac.jp/en/research.html">http://www.bmpc.t.u-tokyo.ac.jp/en/research.html</a>
19 TAKAHASHI	Professor	JUN TAKAHASHI	School of Engineering	Department of Systems Innovation	Research Topic: Technological innovation concerning carbon fiber and composite materials Research Description: Development of CFRTP technologies for mass production automobile such as high cycle molding, joining, repair and recycling. Utilization of productive and low-cost carbon fiber Optimal material and structural design for not only performance but also high cycle and low cost manufacturing Numerical simulation for new functions such as pedestrian safety (soft structure by CFRTP), thunder resistance, etc.	1) Prerequisite knowledge and/or special skills and level of proficiency Prerequisite knowledge: Material mechanics, polymer engineering (not mandatory), knowledge about composite materials (not mandatory), etc. Special skills (not mandatory): CAE softwares (Abaqus, LS-Dyna, AutoCAD, etc.) 2) Required academic background Undergraduate student in senior grade or graduate student 3) Academic or research project experiences beneficial during selection process Experiencing the fabricating of novel carbon fiber reinforced thermoplastic composites. Conducting experiments to verify mechanical properties. Conducting composite material modeling to simulate the mechanical behaviors and compare with corresponding experimental results.	<a href="http://i-to.co7.jp/index-e.html">http://i-to.co7.jp/index-e.html</a>
20 SHIMOGAKI/MOMOSE	Professor Lecturer	Yukihiro SHIMOGAKI Takeshi MOMOSE	School of Engineering	Department of Materials Engineering.	"Thin film deposition and characterization for device applications." Nitride semiconductor (GaN/AlN), metallic films (Cu, Ni, Ru, Co), ceramic thin films (AlN, TiN, BN) will be synthesized by Chemical Vapor Deposition (CVD), Atomic Layer Deposition (ALD), or Supercritical Fluid Deposition (SCFD). The chemical bonding states of these materials will be analyzed by XPS (X-ray photo-electron spectroscopy). The surface structure will be observed by AFM (Atomic Force Microscopy), and their crystal structure will be discussed based on XRD (X-ray diffraction) measurements.	1) Prerequisite knowledge and/or special skills and level of proficiency Special knowledge/skills are not required. 2) Required academic background Basics of solid state physics and chemistry are required. 3) Academic or research project experiences beneficial during selection process If the applicant has experiences on operating vacuum equipment and knows about the characterization of solid materials, it will be appreciated.	<a href="http://www.dps.mmt.t.u-tokyo.ac.jp/index_e.html">http://www.dps.mmt.t.u-tokyo.ac.jp/index_e.html</a>
21 IYAMA	Associate Professor	Jun YAMA	School of Engineering	Department of Architecture	Damage detection and performance verification of steel structural member and steel building structure.  - Analysis of shaking table test result of steel frame specimen. - Planning of shaking table test of steel frame specimen considering effect of non-structural elements. - Development of measuring system of acceleration and strain of steel building structure for structural monitoring. - Dynamic response analysis to know the relation between residual deformation and accumulated damage.	1) Prerequisite knowledge and/or special skills and level of proficiency Structural analysis of steel frames. Fourier analysis and vibration dynamics. Programming skills of Java and SQL. Basic knowledge about Mechanics of materials, Vibration dynamics and Signal processing. 2) Required academic background Structural analysis of building structure. Steel material and steel building structure. 3) Academic or research project experiences beneficial during selection process Experiences relating to dynamic behavior of frame structure will be considered. - Programming of structural frame analysis or dynamic response analysis. - Dynamic response analysis of structural frames using commercial or free software. - Shaking table	<a href="http://steel.arch.t.u-tokyo.ac.jp">http://steel.arch.t.u-tokyo.ac.jp</a>
22 YNAKANO	Professor	Yoshiaki NAKANO	School of Engineering	Department of Electrical Engineering	1. Compound semiconductor nano-phonic devices 2. Large scale photonic integrated circuits (pLSI) 3. Ultra-high efficiency photovoltaic cells 4. Renewable energy system based on sunlight energy	• Prerequisite knowledge and/or specific skill and its proficiency Basic knowledge on semiconductor physics	<a href="http://www.es.t.u-tokyo.ac.jp/~nakano/lab/e_index.html">http://www.es.t.u-tokyo.ac.jp/~nakano/lab/e_index.html</a>
23 TAURA	Professor	Kenjiro TAURA	School of Engineering	Department of Information and Communication Engineering	Parallel computing, distributed computing, high performance computing, system software (programming languages, operating systems, performance analysis tools, data processing languages, machine learning frameworks)	1) Prerequisite knowledge and/or special skills and level of proficiency Applications who have skills and experiences in some of the following fields are highly appreciated: programming experiences, particularly in low level languages (C, C++, assembly); parallel and/or distributed programming; knowledge about fundamentals of computer systems (processor architectures, operating systems, programming languages, etc.); reasoning and analysis of program performance; application of high performance computing (scientific simulation, numerical algorithms, machine learning, large scale data processing, etc.) 2) Required academic background computer science 3) Academic or research project experiences beneficial during selection process Any project experience the applicant was deeply engaged in is beneficial. See the knowledge and skills section above for fields particularly welcome.	<a href="http://www.eidos.ic.t.u-tokyo.ac.jp/">http://www.eidos.ic.t.u-tokyo.ac.jp/</a>