

Themes of Individual Research Training (JYPE) 2017-2018

Faculty/School	Department	Research Theme	Academic Advisor
Faculty of Science	Physics	Structural analysis and growing of (NH ₄) ₂ SnCl ₆ single crystal	Prof. KIMURA, Hiroyuki
		The crystal structure of (NH ₄) ₂ Sn Cl ₆	
		Electron transport of three-dimensional topological insulators as thermoelectric materials	Prof. TANIGAKI, Katsumi
	Astronomy and Geophysics	Atmospheric Hydrogen Escape on Mars: Role of High-Altitude Water and Transport Processes in a Photochemical Model	Prof. KASABA, Yasumasa
	Chemistry	Efficient solver of self-consistent polarizable Molecular Dynamics Simulation	Prof. MORITA, Akihiro
		Copper-Catalysed [1,3]-Alkoxy Rearrangement in Polyaromatic Compounds	Prof. TERADA, Masahiro
		Synthesis and biological analysis of a plant hormone derivative which could uncouple growth and defense in planta	Prof. UEDA, Minoru
		Multi Functional Molecular Conductor	Prof. YAMASHITA, Masahiro
	Earth and Planetary Materials Science	Holocene sea-surface temperature variations deduced from the geological and geochemical records of coral reefs from Kikai-jima (Ryukyu Islands, Japan)	Prof. IRYU, Yasufumi
	Biology	The Effect of <i>Scopimera globosa</i> and <i>Ilyoplax pusilla</i> on Diatom Abundance	Prof. URABE, Jotaro
		Functional analysis of the relation between PLEKHG4B and Solo in actin cytoskeletal remodeling	Prof. OHASHI, Kazumasa
	Integrative Life Sciences	Neurobiology	Prof. SUGIMOTO, Asako
		Behavioral responses of <i>Cladonema pacificum</i> jellyfish when exposed to different salinity concentrations	Prof. TANIMOTO, Hiromu
		Analysis of anatomy and aversive behavior of the jellyfish <i>Cladonema pacificum</i>	
Neuroscience - Microelectrode		Prof. TSUTSUI, Ken-ichiro	
	Neuroscience		
	Modelling Depression in Rodents: Social Defeat and ACTH		
Ecological Developmental Adaptability Life Sciences	Effects of cold-acclimation in various <i>Arabidopsis thaliana</i> ecotypes exposed to low temperature and high-light stress	Prof. HIKOSAKA, Kouki	
Molecular and Chemical Life Sciences	Functional analysis of the relation between PLEKHG4B and Solo in actin cytoskeletal remodeling	Prof. OHASHI Kazumasa	
School of Engineering	Mechanical and Aerospace Engineering	Experimental Study of Semi-active Piezoelectric Structural Damping by Synchronized Switching on 2-degree-of-freedom System	Assoc. Prof. MAKIHARA, Kanjuro
		Semi-active Piezoelectric Structural Damping by Synchronized Switching	
		Clarifying the mechanics of friction between Aluminum and Iron surface during reciprocating motion with oil lubricant	Prof. ADACHI, Koshi
		Human-Computer Interaction	
		Cycling Wheelchair and VR Telepresence Coaching Assistance	Prof. HIRATA, Yasuhisa
		Applying a VR environment to cycling wheelchair	
		Measurement of Fin Performance and Fin Efficiency in Heat Sinks	Prof. KOMIYA, Atsuki
		Manipulator Kinematics	
		Pose Estimation for Randomly Piled Up Industrial Pars	Prof. KOSUGE, Kazuhiro
		Manipulator Control	
		Mars Helicopter Design Concept	Prof. NAGAI, Hiroki
		Mars Helicopter : Study on batteries	
		Conversion Efficiency Improvement of Cold Spray Fabricated Dye-Sensitized Solar Cell by Optimizing Dye Proportion	Prof. OGAWA, Kazuhiro
		The effect of wheel size on the terramechanical behaviour of small-sized rover	Prof. YOSHIDA, Kazuya
	Electrical, Information and Physics Engineering	Digital Logic Design with Verilog HDL	Prof. ENDOH, Tetsuo
		Positive/Negative Facial Expression Recognition in Video with FER Corpus and ENTERface Database	Prof. ITO, Akinori
		Natural Human-Machine Interaction by Spatial Augmented Reality using Mobile Robotics Projector-Vision System	Prof. KITAMURA, Yoshifumi
		Applications of Machine Learning in Medicine	Prof. SHIOIRI, Satoshi
		Using TensorFlow to classify handwritten digits	
		Hand Detection for Stealing Detection	Prof. SUGANUMA, Takuo
		Human-Object Interaction Detection	
		Elevator Optimization using Machine Learning	Prof. TANAKA, Kazuyuki
	Fuzzy Logic Feedback Controller for Wrist Control using Functional Electrical Stimulation	Prof. WATANABE, Takashi	
	Applied Chemistry, Chemical Engineering and Biomolecular Engineering	Fabrication of Transparent Fluorescent PDMS Films Incorporating Hybrid SiO ₂ /APTES Nanoparticles Through Physical Approach	Prof. NAGAO, Daisuke
		Fabrication of Transparent PDMS Nanocomposite Films Incorporating Silica Nanoparticles Surface-Modified with a Silane Coupling Agent	
		Respiration Assay of Vascularized Cell Spheroid Using an LSI-based Electrochemical Device	Prof. SHIKU, Hitoshi
	Material Science and Engineering	Effect of chemical treatment on optical properties of layered semiconductor MoS ₂	Prof. NITTA, Junsaku
		Optical investigation in layered semiconductors	
		Titanium Aluminide alloys	Prof. YOSHIMI, Kyosuke
	Civil Engineering and Architecture	Inner Environment of a Vinyl Greenhouse	Assoc. Prof. KOBAYASHI, Hikaru
		Improving the wind environment in commercial districts by studying on H/W parameter based on CFD simulation	Prof. AKASHI Mochida
		Wind environment around the building	
		A preliminary risk assessment of major ports in Taiwan based on tsunamis from Manila trench	Prof. IMAMURA, Fumihiko
		Craft Library	Prof. IWATA, Tsukasa
		Research on the Post Peak Behavior of Soil Slopes Based on Finite Element Method	Prof. KAZAMA, Motoki
		Finite Element Analysis for the Influences of Post Peak Behavior of Soils on the Formation Process of Sliding Surface in a Slope	
	System Information Science	Theoretical Computer Science	Prof. ITO, Takehiro
		Towards a universal query language for Internet of Things based on the Semantic model	Prof. OHORI, Atsushi
		INTERNET OF THINGS: VULNERABILITIES AND POTENTIAL IMPROVEMENTS TO ITS SECURITY INFRASTRUCTURE	Prof. SHINOHARA, Ayumi
		Theoretical Computer Science / Game Theory	Prof. XIAO, Zhou
		Relationship Between Spatial Position and Likelihood of Being Chosen	Prof. SHIOIRI, Satoshi
	Applied Information Sciences	Reservoir Computing with Spiking Neurons	Prof. HORIO, Yoshihiko
Simulation of Spiking Neuron Model in Reservoir Computing			
Cloudlet discovery using DNS		Prof. KATO, Nei	
Faculty of Agriculture	Applied Bio-Sciences	Brain and Swimming Symmetry Development During Sole Metamorphosis	Prof. SUZUKI, Tohru
	Applied Biological Chemistry	Selection of recombinant plants with a desirable genotype for the study on self-incompatibility in Brassica by analysis of DNA polymorphisms	Assoc. Prof. KITASHIBA, Hiroyasu
		Food ingredients can protect against age-related neurological diseases.	Assoc. Prof. SHIRAKAWA, Hitoshi