

Themes of Individual Research Training (2010–2011)

Followings are the themes performed in 2010–2011. The theme will be decided at the start of Individual Research Training.

School	Department	Research Theme	Academic advisor	
Engineering	Mechanical and Aerospace Engineering Courses: Mechanical Systems and Design Nanomechanics Aerospace Engineering Quantum Science and Energy Engineering Bioengineering and Robot Systems Environment and Energy Engineering	Basic Movement of the Robot	Prof. KOSUGE, Kazuhiro	
		Microfabricated differential thermal analysis calorimeter	Prof. ONO, Takahito	
		Experiment Setup Design of Micro Electret Power Generator Modeling	Prof. KUWANO, Hiroki	
		Near-Limit Flame Phenomena under Low Stretch Rate Condition	Prof. MARUTA, Kaoru	
		Evaluation of residual stresses in sintering of an anode-supported type SOFC	Prof. YUGAMI, Hiroo	
		Fluid Motion and Material Deformation in Dam Break Problem	Prof. FUKUNISHI, Yu	
		Fabrication of Metallic Micro-Wires Utilizing Stress-Migration Phenomenon	Prof. SAKA, Masumi	
		Mars Airplane	Prof. ASAI, Keisuke	
		EIMY - Energy in my yard	Prof. NIITSUMA, Hiroaki	
		Autonomous Long Term Data Collecting Mobile Robot	Prof. TADOKORO, Satoshi	
		Development of Mobile-Type Friction Tester for Shoe Sole/Floor Contact	Prof. HOKKIRIGAWA, Kazuo	
		Effects of reoxidation on microstructure changes in SOFC components	Prof. HASHIDA, Toshiyuki	
		Information and Intelligent Systems Courses: Energy Intelligence Communication Network Information NanoElectronics Nano Science Computer Science Intelligent Computing Medical BioElectronics	Decentralized Control System of The Snake-like Robot	Prof. ISHIGURO, Akio
			Overlapping Information on Real World	Prof. TANAKA, Kazuyuki
	3D scene's rendering of a moving figure and lighting		Prof. OMACHI, Ichiro	
	Fingerprint Matching Using POC		Prof. AOKI, Takafumi	
	Application of wireless communication in the LAPS system		Prof. YOSHINOBU, Tatsuo	
	Visual Motion Perception		Prof. OHORI, Atsushi	
	Ambisonic Binaural Playback System		Prof. SUZUKI, Yoichi	
	Automated Conversion of Planar MOSFET Circuits to Fit Vertical MOSFET Layouts		Prof. ENDO, Tetsuro	
	Agent Oriented Programming		Prof. KINOSHITA, Tetsuo	
	Learning to track colors under a dynamically changing light source		Prof. KAMEYAMA, Michitaka	
	Lock-free Deques		Prof. TOYAMA, Yoshihito	
	Mathematical Modeling of Nim: From Game to Theorem		Prof. ZHOU Xiao	
	Application of Voice Synthesis towards Simulated Reality		Prof. SHINOHARA, Ayumi	
	Side-Channel Attack in Cryptographic and Noise Reduction		Prof. SONE, Hideaki	
	On the Insertion of Hybridization Primitives in XML Processing Programs		Prof. KOBAYASHI, Naoki	
	Mental State Detection and Tagging in Nursing Records		Prof. HASHIMOTO, Kazuo	
	Observing the results of different stimulus on the brainwaves	Prof. SHIOIRI, Satoshi		
	Some Connect-4 variants	Prof. TOKUYAMA, Takeshi		
Automatic Hyponym Classification	Prof. INUI, Kentaro			

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Engineering	Applied Chemistry, Chemical Engineering and Biomolecular Engineering Courses: Applied Chemistry Chemical Engineering Biomolecular Engineering	Thermal decomposition of flame-retarded highimpact polystyrene(HIPS)	Prof.	YOSHIOKA, Toshiaki
		Design of Hydrophilic Arginine Mutant scFv: Antibody Engineering for Enhanced Bacterial Expression	Prof.	KUMAGAI, Izumi
		Further Research into the Occurrence of Bond Bundles on the bridging atom in bis(4-fluorophenyl) X	Prof.	MIYAMOTO, Akira
		Electrochemical Interfaces of Single Crystal Electrodes in Aqueous Solutions	Prof.	ITAYA, Kingo
	Materials Science and Engineering Courses: Metallurgy Materials Science Materials Processing Eco Materials Science	Microstructure and corrosion property of 316L stainless steel friction-stir-welded using PCBN and PCBN/W-Re tools	Prof.	KOKAWA, Hiroyuki
		Room temperature terahertz emission via intracenter transition in semiconductors	Prof.	OYAMA, Hiroshi
		Research of High-Strength and High-Conductivity Copper Alloys	Prof.	KAINUMA, Ryosuke
		Electrical Resistance Change and Strain Sensing in Carbon Nanotube-based Polymer Composites under Tension	Prof.	SINDO, Yasuhide
		The Effect of Aluminum on 75V-Ti-Cr Hydrogen Storage Alloys	Prof.	NITTA, Junsaku
		Study on electronic structures of non-stoichiometric titanium nitrides	Prof.	KASUKABE, Yoshitaka
	Civil Engineering and Architecture Courses: Infrastructural Engineering Water and Environmental Studies Transportation and Urban Planning Architectural Design Architectural Engineering	Micro Fabrication for Spin Hall Devices	Prof.	NITTA, Junsaku
		EXPERIMENTAL STUDY ON SEISMIC CAPACITY OF RC COLUMN USING HIGH STRENGTH CONCRETE	Prof.	MAEDA, Masaki
		Renovation and Seismic Retrofits	Prof.	ONODA, Yasuaki
	Science	Mathematics	LIVING IN TOKYO	Prof.
Foundation of Probability Theory			Prof.	TAKEDA, Masayoshi
Physics		Structure and dynamics of North-East Japan	Prof.	TAKAGI, Izumi
		Theoretical Research in String Theory	Prof.	YAMAGUCHI, Masahiro
		(Bilayer) Graphene	Prof.	SAITO, Riichiro
		Particle detection	Prof.	KOBAYASHI, Toshio
Chemistry		Superconductivity of K_xC_{60} salts	Prof.	TANIGAKI, Katsumi
		Development of a waveguide sensor with a nanopillar structure formed by using an amphiphilic block copolymer as a template	Prof.	TERAMAE, Norio
Biology		The function of Slingshot (SSH1L) in apical-basolateral polarization during epithelial cystogenesis	Prof.	MIZUNO, Kensaku
		Gene Expression and Function of AP-2 β during Xenopus Limb Development and Regeneration	Prof.	TAMURA, Kouji
	Growth-analysis of Arabidopsis hallerie ssp. Gemmifera	Prof.	HIKOSAKA, Kouki	
	Neuronal Tracing of Olfactory Pathways with the Fluorescent Dye Dil	Prof.	IIJIMA, Toshio	