List of Lab. at Okayama University 20140110

Graduate Schools	No.	Lab.	Staff	Web site	email
Graduate school of Natural Science & Technology	1	Heat Power Engineering Lab.	Professor Eiji TOMITA Professor Nobuyuki KAWAHARA Professor Kazuya TSUBOI	https://powerlab.mech.okayama-u.ac.jp/index-e.htm	'tomita@mech.okayama-u.ac.jp'
	2	Heat Transfer Engineering Lab.	Professor Akihiko HORIBE Associate Professor Naoto HARUKI Assistant Professor Yoshihiko SANO	http://heat6.mech.okayama-u.ac.jp/dennetu/eng/home.htm	horibe@mech.okayama-u.ac.jp
	3	Fluid Dynamic Lab.	Professor Shinichiro YANASE A. Prof. Toshinori KOUCHI	http://fluid.mech.okayama-u.ac.jp	yanase@mech.okayama-u.ac.jp
	4	Biomedical Engineering Lab.	Professor Jinglong WU Assoc. Professor Satoshi TAKAHASHI Assist. Professor Jiajia YANG	http://www.biolab.mech.okayama-u.ac.jp/indexE.html	wu@mech.okayama-u.ac.jp
	5	Nontraditional Machining Lab.	Professor A.OKADA A. Professor Y. OKAMOTO	http://ntmlab.mech.okayama-u.ac.jp/index-e.html	okada@mech.okayama-u.ac.jp
	6	Machine Design and Tribology Lab.	Professor M. FUJII A. Professor H. KINOSHITA	http://mdws1.mech.okayama-u.ac.jp	fujii◎mech.okayama-u.ac.jp
	7	Interface Systems Lab.	Professor Akio GOFUKU Lecturer Tetsushi KAMEGAWA Research Associate Taro SUGIHARA	http://www.mif.sys.okayama-u.ac.jp	gofuku-a@cc.okayama-u.ac.jp
	8	System Integration Lab.	Professor Koichi SUZUMORI Associate Professor Takefumi KANDA Associate Professor Shuichi WAKIMOTO	ttp://www.act.sys.okayama-u.ac.jp/	suzumori@sys.okayama-u.ac.jp
	9	Applied Superconductivity Lab.	Associate Professor SeokBeom KIM	http://www.ase.ec.okayama-u.ac.jp/index.html	p2x1407j@okayama-u.ac.jp
	10	Measurement Systems Engineering Lab.	Professor Keiji TSUKADA Associate Professor Toshihiko KIWA Assistant Professor Kenji SAKAI	http://www.sense.ec.okayama-u.ac.jp/#	tsukada@cc.okayama-u.ac.jp;
	11	Advanced Nano Energy Materials and Devices Science Lab.	Professor Yasuhiko HAYASHI Assistant Professor Takeshi NISHIKAWA	http://www.dm.ec.okayama-u.ac.jp/index.html	yhayashi.okayamauniv@gmail.com;
	12	Laboratory of Multiscale Device Design	Professor, Kenji TSURUTA Assistant Professor Atsushi ISHIKAWA	http://www.mdd.ec.okayama-u.ac.jp	tsuruta@okayama-u.ac.jp
	13	Information Transmission Lab.	Associate Professor, YAMANE, Nobumoto	http://www.trans.ec.okayama-u.ac.jp/~yamane	yamane-n@okayama-u.ac.jp;
	14	Secure Wireless System Lab.	Associate Professor, Yasuyuki NOGAMI	http://www.trans.ec.okayama-u.ac.jp/~nogami	yasuyuki.nogami@okayama-u.ac.jp;
	15	Distributed System Design Lab.	Professor Nobuo Funabiki Associate Professor Toru Nakanishi Assistant Professor Kan Watanabe	http://www.sec.cne.okayama-u.ac.jp/index_eng.html	funabiki@cne.okayama-u.ac.jp;
	16	Optical and Electromagnetic Waves Lab.	Associate Professor Yoshitaka TOYOTA Assistant Professor Kengo IOKIBE	http://www.dev.cne.okayama-u.ac.jp	toyota-y@cc.okayama-u.ac.jp;
	17	Human Centric Information Processing Lab.	Professor Masanobu ABE Assistant Professor Sunao HARA	http://www.a.cs.okayama-u.ac.jp	abe@cs.okayama-u.ac.jp;
	18	Operating System and System Security Lab	Associate Professor Toshihiro YAMAUCHI	http://www.swlab.cs.okayama-u.ac.jp/lab/yamauchi/index.html	yamauchi@cs.okayama-u.ac.jp;
	19	Pattern Information Processing Lab.	Professor Takeshi SHAKUNAGA Assistant Professor Tsuyoshi MIGITA	http://www.chino.cs.okayama-u.ac.jp/index-en.html	yamauchi@cs.okayama-u.ac.jp

Graduate Schools	No.	Lab.	Staff	Web site	email
Graduate school of Natural Science & Technology	20	Information and Mathematical Engineering Lab.	Professor Norikazu TAKAHASHI	http://www.momo.cs.okayama-u.ac.jp/~takahashi/lab.en.html	takahashi @cs.okayama-u.ac.jp
	21	Interface Process Engineering Lab.	Professor Tsutomu ONO	http://achem.okayama-u.ac.jp/interface/en-home/	tono@okayama-u.ac.jp
	22	Chemical Biology Lab.	Professor Takashi OHTSUKI Assistnat Professor Kazunori WATANABE	http://www.biotech.okayama-u.ac.jp/labs/ohtsuki/field8-e.html	ohtsuk@cc.okayama-u.ac.jp
	23	Organelle Systems Biotechnology Lab	Assoc. Professor Ayano SATOH	http://www.biotech.okayama-u.ac.jp/labs/satoh/index.html	ayano113@cc.okayama-u.ac.jp
	24	Research Center of New Functional materials for Energy Production, Storage and Transport &Research Laboratory for Furface Science	Professor Yoshihiro KUBOZONO	http://www.science.okayama-u.ac.jp/okayama_e/indexeng.htmlhttp://interfa.rlss.okayama-u.ac.jp/index.html	kubozono@cc.okayama-u.ac.jp
	25	Photosynthesis Research Center	Professor Jian-Ren SHEN	under construction	shen@cc.okayama-u.ac.jp
	26	Laboratory for functional materials	Professor Naoshi IKEDA	under construction	ikedan@psun.phys.okayama-u.ac.jp
	27	Functional organic chemistry	Professor Yasushi NISHIHARA	http://chem.okayama-u.ac.jp/~funcchem/english/index.html	ynishiha@cc.okayama-u.ac.jp
Graduate School of Environmental and Life Science	28	Ceramic Materials	Professor Tokuro NANBA Associate Professor,Yasuhiko BENINO	http://www.ecm.okayama-u.ac.jp/ceramics/	tokuro_n@cc.okayama-u.ac.jp
	29	Development of Environmental Inorganic Material	Professor, Michihiro MIYAKE Associtae Professor, Yoshikazu KAMESHIMA Assistant Professor, Shunsuke NISHIMOTO	http://www.ecm.okayama-u.ac.jp/inorgmat/	mmiyake@cc.okayama-u.ac.jp
	30	Environmental Polymer Chemistry	Professor Kunio KIMURA Associate Professor, Shinichi YAMAZAKI	http://www.ecm.okayama-u.ac.jp/polymer/	polykim@cc.okayama-u.ac.jp
	31	Environmental chemical reaction engineering	Yoshiei KATO, Professor Associate Professor Md.Azhar Uddin	http://www.ecm.okayama-u.ac.jp/reaction/	y-kato@cc.okayama-u.ac.jp
	32	Advanced Organic Materials	Assoc. Prof. TAKAGUCHI Yutaka Sr. Asst. Prof. TAJIMA Tomoyuki	http://www.yuki.ecm.okayama-u.ac.jp/index.html	yutaka@cc.okayama-u.ac.jp
	33	Irrigation and Drainage	Takeshi MIURA, Professor Toshitsugu MOROIZUMI, Professor	http://www.eme.okayama-u.ac.jp/Sections/Irrigation/	miurat@cc.okayama-u.ac.jp
	34	Chemistry of Bio-signalling	Yoshiyuki MURATA, Professor Shintaro MUNEMASA, Assistant	http://www.okayama-u.ac.jp/user/agr/profile/nougaku01_6.html	muta@cc.okayama-u.ac.jp
	35	Food Biochemistry	Yoshimasa NAKAMURA, Associate Professor	http://www.gels.okayama-u.ac.jp/profile/kouza/areas05_biochem.html	yossan@cc.okayama-u.ac.jp
	36	Microbial Function	Kazuo KAMIMURA, Professor Tadayoshi KANAO, Associate Professor	http://www.gels.okayama-u.ac.jp/profile/kouza/areas07_biochem.html	kamimura@cc.okayama-u.ac.jp
	37	Developmental Biotechnology	Hiroaki FUNAHASHI, Professor	http://www.cc.okayama-u.ac.jp/~hirofun/index2.htm	hirofun@cc.okayama-u.ac.jp
	38	Applied Animal Genetics	Tetsuo KUNIEDA, Professor	http://www.cc.okayama-u.ac.jp/~tkunieda/index.html	tkunieda@cc.okayama-u.ac.jp

1 Heat Power Engineering Lab.

Lab or research department name

Graduate School of Natural Science and Technology

Domain

Mechanical Engineering

Sub-domain or keywords

Energy and Environment

Description

In order to obtain higher thermal efficiency of IC engine, it is important to understand combustion phenomena inside an engine cylinder. We are trying to analyze the combustion phenomena using laser diagnostics and numerical simulation.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact tomita@mech.okayama-u.ac.jp

URL https://powerlab.mech.okayama-u.ac.jp/index-e.htm

2 Heat Transfer Engineering Lab.

Lab or research department name

Graduate School of Natural Science and Technology

Domain

Mechanical Engineering

Sub-domain or keywords

Heat transfer Engineering

Description

In order to develop the efficiently utilizing thermal energy in consideration of environment, we mainly investigate the explanation of some latent heat storage and release characteristics, development of air conditioning systems using an organic sorbent material, and development of energy transportation technologies with flow drag reduction effect.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact

horibe@mech.okayama-u.ac.jp

URL

http://heat6.mech.okayama-u.ac.jp/dennetu/eng/home.htm

3_Fluid Dynamic Lab.

Lab or research department name

Graduate School of Natural Science and Technology

Domain

Mechanical Engineering

Sub-domain or keywords

Energy and Environment, Fluid Mechanics

Description

Researches are curved duct flows, vortical structures around a rotating

disk, enhancement of mixing in supersonic flows, development of the

measurement methods by laser technology

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact

yanase@mech.okayama-u.ac.jp

URL

http://fluid.mech.okayama-u.ac.jp/

4 Biomedical Engineering Laboratory

Lab or research department name

Graduate School of Natural Science

Domain

Machine and System Engineering

Sub-domain or keywords

Biomedical Engineering

Description

In order to develop the intelligent mechanical system and medical welfare equipment, we mainly use electroencephalography(EEG) and functional magnetic resonance imaging(fMRI) to study cognition, behavior and brain's mechanism. And those researches are applied to education and application study. Our research interests range from human brain functions, such as vision, audition, touch, behavior, attention to language. Our research methods include cognitive psychology, electroencephalography, functional magnetic resonance imaging and image/signal analysis.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact

wu@mech.okayama-u.ac.jp

URL

http://www.biolab.mech.okayama-u.ac.jp/indexE.html

5 Nontraditional Machining Lab

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Lab or research department name	Graduate School of Natural Science &Technology
Domain	Mechanical Engineering
Sub-domain or keywords	Nontraditional Machining, Production Engineering

Description

This laboratory is doing research on EDM, EBM, LBM, and so on. With the rapid progress of technology, various new materials which have many excellent properties have been developed, and the characteristics of industrial materials have been improved. Most of these materials are difficult to machine by the conventional methods and they require some new machining methods. In our laboratory, various new machining methods by using electric, electronic, optical, magnetic, chemical and biological energies as a tool have been studied for the future.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact	okada@mech.okayama-u.ac.jp
URL	http://ntmlab.mech.okayama-u.ac.jp/index-e.html

8 System Integration Lab.

Lab or research department name	Graduate School of Natural Science and Technology
Domain	Mechanical System Engineering
Sub-domain or keywords	Pneumatic actuators, Piezoelectric actuators, and other new actuators Soft robotics
Description	New actuators and their applications to several robots and mechanical systems are our main research area. Examples of these are soft robots for medical and welfare uses, piezoelectric motors for special environments such as ultralow temperature and string magnetic fields, and high force muscles for rescue power robots.
Prerequisites	Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.
Contact	suzumori@sys.okayama-u.ac.jp kanda@sys.okayama-u.ac.jp
URL	http://www.act.sys.okayama-u.ac.jp/

10 Mesurement Systems Engineering Laboratory

Lab or research department name	Graduate School of Natural Science
Domain	Electrical and Electronic Engineering
Sub-domain or keywords	Sensor devices (Chemical, Magnetic, Superconducting), Measurement system
Description	We are involved in the research of chemical sensor (ion, gas), magneticsensor (AMR, TMR), terahertz and superconducting sensor (HTS-SQUID), and their applications.
Prerequisites	Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.
Contact	**tsukada@cc.okayama-u.ac.jp, kiwa@okayama-u.ac.jp**
URL	http://www.sense.ec.okayama-u.ac.jp/index.html

12 Laboratory of Multiscale Device Design

Lab or research department name

Graduate School of Natural Science & Technology

Domain

Electrical and Electronic Engineering

Sub-domain or keywords

Multiscale Device Design

Description

Our aim is to design novel electronic, optical, plasmonic, and acoustic devices for new energy-harvesting applications. We develop computational techniques for electron- or atom-level simulation, electromagnetic and sound wave simulation, and perform proof-of-principle experiments of the proposed materials/devices.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact

tsuruta@okayama-u.ac.jp

URL

http://www.mdd.ec.okayama-u.ac.jp

13 Information Transmission Laboratory

Host institution	JP - Okayama University (岡山大学)
Lab or research department name	Graduate School of Natural Science and Technology
Domain	Electronic and Information Systems Engineering
Sub-domain or keywords	Statistical Signal Processing
Description	Current major fundamental research is efficient statistical modeling of multi-media signals for machine Learning. Applications development of this model are image restoration, e.g. streak artifact removal and HD Image Interpolation for 4K, data compression, e.g. information lossless medical image compression and lossless audio compression, automatic diagnostics imaging, e.g. detection of tumor cells in EUS-FNA.
Prerequisites	Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.
Contact	yamane-n@okayama-u.ac.jp
URL	http://www.eng.okayama-u.ac.jp/eng_elec/html/en/tp/company/index.html

14 Secure Wireless System Lab.

Lab or research department name

Graduate School of Natural Science

Domain Electrical and Communication Engineering

Sub-domain or keywords

Communication and Security

Description

Public key cryptography realizes to electronically authenticate the users or electronic devises. In these decade years, RSA cryptography has been widely used so as to realize the digital/electronic authentication. However, much more compact and efficient public key cryptographies are desired for which recently elliptic curve cryptography and its extended pairing cryptography have been proposed and partially used in practice. Compare to RSA cryptography, they need much more complicated arithmetic operations because their securities are based on much more difficult mathematic problems. Thus, their implementations also need technical skills so as to make them practical. So as to be efficiently performed even on mobile devices such as smart phones, in addition, so as to be efficiently applied for anonymous digital authentication that keeps private information away from evil Internet users, this group has developed efficient mathematical calculation libraries for software implementations with C/C++ and Java languages, also hardware chips such as FPGA.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact Yasuyuki.nogami@okayama-u.ac.jp

URL www.trans.ec.okayama-u.ac.jp/~nogami

16 Optical and Electromagnetic Waves Lab.

Lab or research department name	Graduate School of Natural Science and Technology
Domain	Electrical and Communication Engineering
Sub-domain or keywords	Electromagnetic Compatibility
Description	The aim of our research is to improve electrical, electronic, and telecommunication systems in speed or reliability. Our research is related to specific design technology to intentionally control and reduce unintentional electromagnetic waves, or electromagnetic noise, generated by electrical, electronic, and telecommunication equipment. Our other research topics include the development of communication technology using laser beams and remote sensing.
Prerequisites	Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.
Contact	toyota@okayama-u.ac.jp
URL	http://www.dev.cne.okayama-u.ac.jp/

17 Human Centric Information Processing Lab.

Lab or research department name	Graduate School of Natural Science
Domain	Computer Science
Sub-domain or keywords	Speech Processing, Human Interface, Life Log

Description

Human Centric Information Processing Laboratory is working on speech signal processing, human interface and life log processing. The research motive is to establish better understanding of human beings and to create new technologies that make our life better. On-going research topics are as follows.

- High quality speech synthesis
- Voice conversion
- Spoken dialog system
- Human modeling based on life logs
- Development applications using life logs.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact	abe@cs.okayama-u.ac.jp
URL	http://www.a.cs.okayama-u.ac.jp

18 Operating System and System Security Lab

Lab or research department name

Graduate School of Natural Science and Technology

Domain

Computer Science

Sub-domain or keywords

Operating System
System Software
Computer Security

Description

Our lab has been developing ***Tender*** operating system (OS) based on resource independent structure. The ***Tender*** OS has persistent mechanism of OS and AP processing, fast process creation mechanism and so on.In addition, we study new security mechanisms based on OS functions and virtual machine technology. These mechanisms can be applied to prevention of information leakage, smartphone security, malware detection and so on.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact

yamauchi@cs.okayama-u.ac.jp

URL

http://www.swlab.cs.okayama-u.ac.jp/lab/yamauchi/index.html

20 Information and Mathematical Engineering Lab.

Lab or research department name

Graduate School of Natural Science and Technology

Domain

Computer Science

Sub-domain or keywords

Information and Mathematical Engineering

Description

In the real world, there are a number of large and complex networks such as the Internet, World Wide Web, telephone line networks, power grids, electric circuits, neural networks and so on. In addition, an enormous quantity of data and signals are propagating continuously through those networks. In this laboratory, we are studying, from the mathematical viewpoint, the behavior of various complex networks and analysis methods for big data. For example, we are currently working on, through both theory and computer simulations, the analysis and development of 1) efficient communication methods in mobile agent networks, 2) optimization techniques for large problems arising in machine learning and signal processing, 3) methods for efficiently finding useful information from large data, and 4) signal processing techniques by means of neural network circuits.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact

takahashi@cs.okayama-u.ac.jp

URL

http://www.momo.cs.okayama-u.ac.jp/~takahashi/lab.en.html

21 Interface Process Engineering Lab.

Lab or research department name	Graduate School of Natural Science and Technology
Domain	Chemical Engineering
Sub-domain or keywords	Microfluidics, Polymer Colloid, Surface Engineering
Description	Our concept is based on “Process Innovation for Product Innovation”. For sustainable development, the design and creation of nano- or micro-scale materials are studied using Microfluidics, Molecular synthesis, Polymerization, Controlled Nucleation and Interfacial Chemistry.
Prerequisites	Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.
Contact	tono@okayama-u.ac.jp
URL	http://achem.okayama-u.ac.jp/interface/en-home/

23 Organelle Systems Biotechnology Lab

Lab or research department name	Graduate School of Natural Science
Domain	Department of Biotechnology
Sub-domain or keywords	Organelle Systems Biotechnology
Description	An organelle is a specialized compartment within a cell that has a specific function, and is usually enclosed separately within its own lipid bilayer. When cellular activities occur, various materials are transported among organelles. Our aim is to uncover the regulatory mechanism of this material transport and to study organelle biogenesis. We also seek to establish cellular systems that can be useful for the development of medicines and cosmetics. The research in our lab involves an in-depth exposure to the wide range of methodological approaches used in contemporary biology, from fundamental molecular/cellular biological techniques to advanced cellular imaging.
Prerequisites	Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.
Contact	ayano113@cc.okayama-u.ac.jp
URL	http://www.biotech.okayama-u.ac.jp/labs/satoh/index.html

24 Photosynthesis Research Center

Lab or research department name

Graduate School of Natural Science and Technology

Domain

Department of Biological Science

Sub-domain or keywords

Photosynthesis Research Center

Description

Structural and functional analysis of photosynthetic systems,

especially on the photosystem II membrane-protein complex, the mechanism of water-splitting by means of X-ray crystallography. Also studies on the growth of high-resolution crystals of membrane proteins and their complexes.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact

shen@cc.okayama-u.ac.jp

URL

http://www.biol.okayama-u.ac.jp/shen2/トップ.htm

25 Research Laboratory for Furface Science

Lab or research department name	Graduate School of Natural Science and Technology
Domain	Department of chemistry (Research laboratory for Surface Science)
Sub-domain or keywords	Interface Science Energy and Environment
Description	My research interest is to develop new physics and chemistry based on new functional materials, in particular materials consisting of light elements. Our group is working on fabrication and characterization of molecular superconductors which can be produced by chemical doping metals into solids of conjugated hydrocarbons, other carbon related materials (graphite and graphene) and two-dimensional (2D) inorganic materials (FeSe, FeSeTe, MoSeTe). Furthermore, electrostatic doping to organic (hydrocarbons) and inorganic solids (2D inorganic materials, topological insulator and graphene) is also my important research subjects, which aims for not only emergence of novel physical properties such as superconductivity, but also realization of high-performance / multi-functional electronic devices (we are developing high-performance organic transistors and graphene transistors for a practical application). Our nano-scale science directs to realize nano-scale electronic devices. For this purpose, we are now using C_{60} and fullerene molecules as target materials and STM as a technique. Thus, our group is working on chemistry and physics based on new materials.
Prerequisites	Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.
Contact	Kubozono@cc.okayama-u.ac.jp
URL	http://interfa.rlss.okayama-u.ac.jp/index.html

27 Functional organic chemistry

Lab or research department name

Graduate School of Natural Science

Domain

Functional organic chemistry

Sub-domain or keywords

Organic Chemistry, Organometallic Chemistry

Description

Development of Synthetic Organic Reactions Catalyzed by Organometallic Complexes and the Application to Functional Materials.By using transition metal catalysts, we can develop the organometallic reagents and the organometallic complexes which show the reactivities and selectivities different than ones in classical methods. We can also control the reactivities of the reagents and the catalysts precisely by tuning the ligands (organic compounds) on the metals.

We are pursuing the development of the new carbon-carbon bond formation reactions which become a basis for synthetic organic reactions by talking advantage of the characteristics of the organometallics complexes which consist of the metals and the organic compounds.

We are also interested in the development of the environmentally friendly reactions for "Green Chemistry" which is one of the most important tasks for chemists in the 21th century.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact ynishiha@okayama-u.ac.jp

URL http://chem.okayama-u.ac.jp/~funcchem/english/index.html

28 Ceramic Materials

Host institution

JP - Okayama University (岡山大学)

Lab or research department name

Graduate School of Environmental and Life Science

Domain

Environmental Science

Sub-domain or keywords

Material and Energy Science

Description

Properties of materials are dependent on the chemical structures, such as, atomic configuration and electronic states. From this point of view, our research group has been studying inorganic materials, such as glasses and glass-ceramics with optical functions for a long time, where the relations between structure and properties of the materials have been extensively investigated to understand the mechanisms how the properties are revealed.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact

tokuro_n@cc.okayama-u.ac.jp

URL

http://gw-90.ecm.okayama-u.ac.jp/muki/index_e.html

30 Environmental Polymer Chemistry

Lab or research department name	Graduate School of Environmental and Life Sciences
Domain	Polymer Science
Sub-domain or keywords	Polymer chemistry and physics (Synthesis, Morphology, High-performance polymer, Crystallization mechanism, Phase separation)
Description	Our recent interests are focused on morphology control of various polymers having less moldability and crystallization mechanism of flexible polymers under quiescent and flow state. We are developing the environmentally benign polymers such as high performance aromatic polymers, bio-based polymers and biodegradable polymers by means of mainly polymerization during phase separation and precious polycondensation. Unique morphologies of aromatic polymers such as whisker, microsphere, nano-flower and helical needle have been created. We also studying the topological effect on polymer crystallization using model polymers prepared in our laboratory by means of differential scanning calorimetry, polarizing microscopy, electron microscopy and X-ray diffraction.
Prerequisites	Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.
Contact	polykim@cc.okayama-u.ac.jp, zaki@cc.okayama-u.ac.jp
URL	http://www.ecm.okayama-u.ac.jp/polymer/ http://www.gels.okayama-u.ac.jp/en/intro/dept/matenergy.html

31 Environmental chemical reaction engineering

Host institution

JP - Okayama University (岡山大学)

Lab or research department name Graduate School of Environmental and Life Sciences

Domain

Chemical Engineering

Sub-domain or keywords

Chemical Reaction Engineering, Pyrometallurgy, Catalyst, Biomass

Description

Various studies on global environment, pollution control, waste utilization and basis of reaction engineering are carried out by using the technique of pyrometallurgy, catalyst biomass etc.

Prerequisites

Doctoral candidates are invited to propose a research topic and select a host, which are related to their proposed doctoral research. For inquiries and laboratory introductions please contact the address below.

Contact y-kato@cc.okayama-u.ac.jp alazhar@cc.okayama-u.ac.jp

URL http://www.ecm.okayama-u.ac.jp/reaction/