

Organization and Activities of the Doctoral Program in Earth Evolution Sciences (Geological Sciences) for the Academic Year 2006

Organization

During the year from April, 2006 to March, 2007, several promotions and appointments were made in the Doctoral Program in Earth Evolution Sciences (Geological Sciences) so that our research and teaching activities were enforced. All faculty and administrative staffs were (staffs with an asterisk * are belonging to the Doctoral Program in Integrative Environmental Sciences, but they are listed in our organization here-with, because they study geological sciences and have lectures on geological sciences for undergraduate students):

Professor:

Arakawa, Yoji, D. Sc., Petrology. Geochemistry and geochronology
Hayashi, Ken-ichiro, D. Sc., migration of heavy metals, geochemistry of hydrothermal system
Kimata, Mitsuyoshi, D. Sc., mineralogy and crystallography
Ogasawara, Kenshiro, D. Sc., Cenozoic stratigraphy and molluscan paleontology
Ogawa, Yujiro, D. Sc., structural geology and marine geology
Sashida, Katsuo, D. Sc., Paleozoic and Mesozoic biostratigraphy

Associate Professors:

Endo, Kazuyoshi, Ph.D., molecular paleontology
Hisada, Ken-ichiro, D. Sc., Paleozoic and Mesozoic stratigraphy and sedimentology
Tsunogae, Toshiaki, Ph.D. (Sc.), metamorphic petrology and crustal evolution
Yagi, Yuji, D. Sc., seismology, structural geology

Assistant Professor:

Adachi, Shuko, D. Sc., Paleozoic biostratigraphy
*Anma, Ryo, Ph.D., structural geology and tectonics
Hirai, Hisako, D. Sc., Earth Planetary High-pressure Science
Komuro, Kosei, D. Sc., ore geology and geochemistry
Kurosawa, Masanori, Ph.D. (Sc.), mineralogy and geochemistry
Kyono, Atushi, Ph.D. (Sc.), structural physics of

minerals

*Maruoka, Teruyuki, Ph.D., geochemistry
Motoyama, Isao, Ph.D. (Sc.), Cenozoic stratigraphy and micropaleontology
Takizawa, Shigeru, D. Sc., structural geology

Research Associate:

Kikuchi, Yoshibumi, Ph.D. (Sc.), Cenozoic paleoenvironments and paleontology

Cooperative Graduate School System

Professor:

Takada, Akira, D. Sc., volcanology
Yamazaki, Toshitsugu, D.Sc., paleomagnetism

Associate Professor:

Ishizuka, Osamu, D. Sc., arc magmatism

Research and Teaching Assistants:

Miyamoto, Makoto
Ozaki, Shiro
Shimizu, Masahiro
Watase, Koichi, B.A.

Administrative Staff:

Sato, Chikako
Yasuda, Yoko

Doctor and Master's Theses

The following doctor and master's theses were completed during the academic year 2006 under the supervision of the members of the Doctoral Program in Earth Evolution Sciences.

Doctor of Philosophy (Science or Geosciences)

Espi, J. Onglo (2006): Geology, mineralogy and paragenesis of the Neana high sulfidation-style and Bilomoia low sulfidation-style gold deposits, Papua New Guinea.
Shibahara, Akihiko (2007): Late Quaternary paleoceanographic changes off southeastern Hokkaido, based on foraminiferal assemblages.

Master of Science or Geoscience

- Hirobe, Yoshitada (2007): Neogene stratigraphy and plant fossils of the Aniai area, Akita Prefecture.
- Ishii, Shunsuke (2007): Petrological study of ultra-high-temperature granulites from the Achankovil Zone, South India.
- Konagai, Keisuke (2007): Phase changes of solid methane under high-temperature and high-pressure and their implications in interiors of the icy planets.
- Maeda, Yuichiro (2007): Late Miocene radiolarian assemblage of the Japan Sea: comparison between Niigata Prefecture and the Pacific Ocean off Sanriku District.
- Ohshima, Hiroyuki (2007): Fluid inclusion study of high- to ultrahigh-temperature metamorphic rocks.
- Sato, Hisatoshi (2007): Geochemistry of deep-sea sediments at the cold seep sites, Nankai Trough.
- Takahara, Naoya (2007): Changes in phase and occupancy of methane-ethane mixed hydrate under high pressure.
- Yamada, Akira (2007): Petrological study of calc-silicate rocks from southern India: implications for fluid-rock interaction at granulite-facies metamorphism.

Research Activities

Each researcher had the following research activities during the academic year 2006.

Research projects

- Arakawa, Y. and Park, K.-H. (2000–2007): Chronological and petrochemical studies of the Buncheon granitic gneiss in NE Yeongnam massif, South Korea.
- Arakawa, Y. and Chen, B. (2003–2007): Nd-Sr-Pb isotopic and chemical studies of Mesozoic granitic rocks in NE China.
- Arakawa, Y., Hoshino, M., Kimata, M., Shimizu, M., and Nishida, N. (2004–2006): Sr-Nd isotopic and chemical studies of allanite in granitic rocks.
- Arakawa, Y. and Matsui, T. (2005–2008): Sr isotopic and mineralogical studies of anorthite megacrysts in volcanic rocks in Kyushu-Ryukyu arc.
- Arakawa, Y. and Shinmura, T. (2005–2008): Geological and geochemical studies of volcanic rocks in Aso volcano, Kyushu, Japan.
- Endo, K., Iijima, M., Sarashina, I., Tekeuchi, T., Kunitomo, Y., and Kurutani, S. (2003–2008):

An exhaustive exploration of the genes involved in molluscan shell formation: a primer for a genome project.

- Hirai, H. (2006): Research of high-pressure properties of gas hydrates. Agency of Industrial Science and Technology (AIST)
- Hisada, K., Charusiri, P., Lee, B.J., and Jin, X. (2005–2009): IGCP516 “Geological Anatomy of East and South Asia: Paleogeography and paleoenvironment in Eastern Tethys” (UNESCO)
- Kurosawa, M. (2005–2007): Studies on magmatic fluids in a collision zone of the Izu-Bonin arc by using high-energy ion beam
- *Maruoka, T. (2006–2008): Geochemical study for understanding the environmental perturbations at the mass-extinction events.
- Sashida, K. (2003–2007): Paleozoic and Mesozoic paleoenvironmental studies in Thailand and Peninsular Malaysia based on microfossils.
- Tsunogae, T. and Santosh, M. (2003–2009): Crustal evolution of the southern Indian granulite terrane.
- Tsunogae, T. and van Reenen, D.D. (2001–2008): UHT metamorphism of the Limpopo Belt, southern Africa.
- Tsunogae, T., Osanai, Y., Toyoshima, T., Owada, M., and Hokada, T. (1998–2008): The role of fluid at UHT metamorphism of the Napier Complex, East Antarctica.
- Tsunogae, T. and Dubessy, J. (2004–2008): Characterization of fluid in granulites: evidence from quantitative Raman spectroscopic study.
- Yagi, Y. (2006), Source process of large earthquakes derived from waveform inversion with ABIC.

Research grants

- Arakawa, Y. (2004–2006): Elemental and Nd-Sr-Pb isotope geochemistry for the Mesozoic igneous activities in North China Craton. Japan Society for the Promotion of Science: Basic Research (C) JPY 3,600,000
- Endo, K. and Kuratani, S. (2003–2008): An exhaustive exploration of the genes involved in molluscan shell formation: a primer for a genome project. Japan Society for the Promotion of Science: Basic Research (S) JPY 81,700,000; JPY 11,960,000 for 2005.
- Hirai, H. (2006–2009): Phase changes of methane hydrate under very high-pressure and high-temperature and inference of interior of the giant icy planets. Japan Society for the Promotion of

- Science: Basic Research (B), JPY 17,910,000.
- Komuro, K. (2006–2008): Geochemical properties of sedimentary rock: microanalysis of sedimentary rocks and laboratory rock/water experiment. Japan Atomic Energy Agency Cooperative Research (A) on Nuclear Fuel Cycle. JPY 3,000,000 for 2006.
- *Maruoka, T. (2006–2008): Geochemical study for understanding the environmental perturbations at the mass-extinction events. Japan Society for the Promotion of Science: Grant-in-Aid for Young Scientists (A). JPY 21,400,000 for 2006.
- Motoyama, I. (2003–2006): Possible formation of “Japan sea proper water” during late Miocene time. Japan Society for the Promotion of Science: Basic Research (C), JPY 500,000 for 2006.
- Ogasawara, K. (2005–2007): Time and space distribution of Japanese Cenozoic molluscan type specimens based on the integrated biostratigraphy. Japan Society for the Promotion of Science, JPY 8,899,000.
- Ogasawara, K. (2005–2007): Eventual stratigraphy of the Northwest Pacific: biotic, climatic, eustatic and sedimentologic events. Japan Society for the Promotion of Science: Grant-in-Aid for Scientific Research between Russia and Japan. JPY 5,000,000.
- Tsunogae, T. (2005–2007): Fluid associated with UHT metamorphism along the Gondwana collision zone. Japan Society for the Promotion of Science: Basic Research (B), JPY 9,600,000.

- (2) Exchange of Graduate Student:
Rottana Ladachart (Tokubetsu Kenkyusei; AIEJ Short-term Student Exchange Program, 12 months from December 2006, Ken-ichiro Hisada)
- (3) Collaboration Research:
Organizing joint works as co-leaders for IGCP 516 (2005–2009) (Punya Charusiri and Ken-ichiro Hisada)

Pukyong National University (South Korea)

- (1) Collaboration Research:
Geological and Petrological research of the Proterozoic Yeongnam massif, South Korea (Arakawa, Y. and Park, K-H.)

Activity Reports for Academic Exchange and Cooperation

University of Rajshahi, the Peoples Republic of Bangladesh

- (1) Exchange of Researcher:
Islam, Md Aminul (JSPS RONPAKU Program, 2005–2007, Yujiro Ogawa)
- (2) Exchange of Graduate Student:
Ferdousy, Mst, Fahima (Tokubetsu Kenkyusei; AIEJ Short-term Student Exchange Program, 12 months from December 2005, Kei-ichiro Hisada)
- (3) Collaboration Research: None

Chulalongkorn University, the Kingdom of Thailand

- (1) Exchange of Researcher:
Choowong, Montri (JSPS RONPAKU Program, 2005–2007, Ken-ichiro Hisada)