

Fri. Sep 15, 2023

Poster presentation | S2: Water Rock Interaction (Special Session)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

S2: Water Rock Interaction (Special Session)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-01] Crack and alteration changes in oceanic crust inferred from joint model of elastic-wave velocity and electrical resistivity

*Ikko KATAYAMA¹, Kazumasa Tanimoto¹, Yuya Akamatsu² (1. Hiroshima University, 2. Japan Agency for Marine-Earth Science and Technology)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-02] Listvenite and serpentinite from Urayama River, Shikokuchuo City, Ehime Prefecture, Japan

*Hikaru Takagaki¹, Yohei Shirose¹ (1. Ehime Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-03] Serpentinites from the Udonohana ultramafic body, Western Ehime Prefecture, Japan.

[Presentation award entry]

*Yui Joguchi¹, Satomi Enju¹ (1. Ehime Univ. Sci. & Eng.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-04] Texture and chemical composition of pyroxene pseudomorphs in ultramafic rocks derived from mantle wedges

*Takumi Wani¹, Yuji Ichiyama¹, Tomoaki Morishita², Akihiro Tamura² (1. Chiba University, 2. Kanazawa University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-05] Fluid inclusions of multi-generational carbonated veins in serpentinite at Chenaillet ophiolite and Lago Nero ophiolite, Western Alps, and Oman ophiolite

[Presentation award entry]

*Tomohiro INUKAI¹, Tatsuhiko Kawamoto¹, Mikiya Kageta¹, Miki Tasaka¹, Hajime Taniuchi², Kenneth Koga³, Estelle Rose-Koga³, Christian Nicollet⁴, Baptiste Debret⁵, Marguerite Godard⁶ (1. Shizuoka University, 2. AIST, 3. Université Orléans, CNRS, 4. Université Clermont Auvergne, CNRS, 5. Institut de physique du globe de Paris, CNRS, 6. Université Montpellier 2, CNRS)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-06] C-isotope composition of graphite associated with green V-bearing grossular and origin of COH fluid from Menipa, Sør Rondane Mountains, East Antarctica

*Tetsuo KAWAKAMI¹, Tasuro Adachi³, Satish-Kumar M.², Fumiko Higashino¹, Masaoki Uno⁴ (1. Kyoto Univ. Sci., 2. Niigata Univ. Sci., 3. Kyushu Univ. Soc., 4. Tohoku Univ. Env.)

Poster presentation | R1: Characterization and description of minerals (Joint Session with The Gemmological Society of Japan)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

R1: Characterization and description of minerals (Joint Session with The Gemmological Society of Japan)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-01] Chemical compositions and a CHIME age of monazite from the Ishikawa district, Fukushima Prefecture, Japan

*Yasuyuki BANNO¹ (1. AIST)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-02] Intensity tensor of Mössbauer quadrupole doublet for Fe³⁺ at M1 site of aegirine-augite

*Keiji SHINODA¹, Yasuhiro KOBAYASHI² (1. Osaka Metro. Univ. Sci., 2. Kyoto Univ. KURNS.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-03] Si and Al ordering indices for cordierite using single crystal X-ray diffraction

*Nishikawa Chihiro¹, Shinoda Keiji¹, Seto Yusuke¹ (1. Osaka Metro Univ. Sci)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-04] Proposal of analytical method for determination of Sr concentration in plagioclase by EPMA

*Kurumi IWAHASHI¹, Atsushi Yasuda², Ayumu Nishihara¹ (1. GSJ, AIST, 2. ERI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-05] Mineralogical and chemical features of tiny bronze fragments from the Yashin Tepe archaeological site, northeastern Iraq

*Masanori KUROSAWA¹, Kei Ikehata¹, Shin'ichi Nishiyama² (1. Univ. Tsukuba, 2. Chubu Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-06] Amethyst Crystals from Mitsuiwa-mountain in Nanmoku Village, Gunma Prefecture

*Masayuki KAWASAKI¹ (1. Tsukuba City)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-07] Claraite from the Ashio mine, Tochigi prefecture, Japan

*Takefumi NIWA¹, Daisuke Nishio-Hamane², Shouichi Doi¹, Hiroshi Sakurai¹, Numao Atsushi (1. Min. Soc. Nagoya, 2. ISSP, Univ. of Tokyo)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-08] Mineralogical study of tourmaline and gabbroic pegmatites in gabbro from Kajishima, Ehime Prefecture, Japan

[Presentation award entry]

*Itsuki Ota¹, Kazuya Shimooka¹, Satoshi Saitou¹, Yohei Shirose¹ (1. Ehime Univ. Sci. and Eng.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-09] Proto-ferro-anthophyllite in a granitic pegmatite from Nomi Island, Hiroshima Prefecture, Japan

*Masayuki Ohnishi¹, Norimasa Shimobayashi², Daisuke Nishio-Hamane³, Shinoda Keiji⁴, Satomi Enju⁵ (1. Non, 2. Kyoto Univ., 3. ISSP, Univ. of Tokyo, 4. Osaka Metro. Univ., 5. Ehime Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-10] Norrishite from Funakozawa mine and Kotamagawa mine, Iwate Prefecture, Japan

*Daisuke HAMANE¹, Mariko Nagashima², Yasumitsu Suzuki (1. ISSP, 2. Yamaguchi Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-11] **Berthierine and Chamosite in BIF of the Cleaverville Formation, Pilbara craton, Western Australia**

*Yusuke Inokuchi¹, Shoichi Kiyokawa², Yuya Takeda³, Seiichirou Uehara⁴ (1. Kyushu Univ. Sci. , 2. Kyushu Univ. Sci. , 3. Kyushu Univ. ISGS., 4. Kyushu Univ. Museum.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-12] Microstructure of serpentine veins containing native iron in dunite in Oshika Village, Nagano Prefecture, Japan

*Yuya TAKEDA¹, Yoshihiro Kuwahara², Seiichiro Uehara³ (1. kyushu Univ. ISGS, 2. kyushu Univ. SCS, 3. kyushu Univ. Museum)

Poster presentation | R2: Crystal structure, crystal chemistry, physical properties of minerals, crystal growth and applied mineralogy

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

R2: Crystal structure, crystal chemistry, physical properties of minerals, crystal growth and applied mineralogy

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-01] Development of simulation software for electron microscope images and electron diffraction patterns based on dynamical scattering theory

*Yusuke SETO¹, Masahiro OHTSUKA² (1. Osaka Metropolitan Univ. Sci., 2. Nagoya Univ. IMASS.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-02] Synthesize of potassium silicate mineral fertilizer from drifted pumice

[Presentation award entry]

*Haruki Urazoe¹, Hiroaki Ohfuji¹ (1. Tohoku University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-03] In-situ observation using x-ray diffraction for phase transitions of NH₄Cl under low-temperature or high-pressure

*Kazuki Komatsu¹, Takanori Murakami¹, Satoshi Nakano², Hiroyuki Kagi¹ (1. Sci. UTokyo, 2. NIMS)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-04] Synthetic of potassium silicate minerals from a weathered granite with alkaline fluxes

[Presentation award entry]

*Hiroki Ishida¹, Hiroaki Ohfuji¹ (1. Tohoku Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-05] Synthesis and characterization of euohedral silica clathrate with isopropylamine

*Shusuke Isogai¹, Nobuyuki Tamai¹, Yuka Yokoyama¹, Atsushi Tani¹, Yusuke Seto² (1. Kobe Univ. Human Dev. Environ., 2. Osaka Metroplitan Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-06] Searching for clues to the origin of carbonado, an enigmatic polycrystalline diamond through analysis of nano-inclusions

[Presentation award entry]

*Wataru Taneya¹, Hiroaki Ohfuji¹ (1. Tohoku University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-07] **Differences in the effects of Na and K on the calcitization of vaterite.**

*Noboru FURUKAWA¹, Ami Kinoda¹ (1. Chiba University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-08] Synthesis and validation of zircon for detection of alpha recoil tracks

*Maki HAMADA¹, Noriko Hasebe² (1. Kanazawa University, 2. Institute of Nature and Environmental Technology, Kanazawa University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-09] Raman spectra for estimation of the Fe³⁺ content in clinozoisite-epidote series

*Mariko NAGASHIMA^{1,2}, Boriana Mihailova² (1. Yamaguchi Univ. Sci., 2. Univ. Hamburg)

Poster presentation | R4: Mineral sciences of the Earth surface

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

R4: Mineral sciences of the Earth surface

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R4P-01] Texture observation for the skeletons consisting of aragonite and calcite of culturing scleractinian corals

*Satoko MOTAI¹, Saki Harii², Naotaka Tomioka³, Motoo Ito³ (1. Yamagata University, 2. Univ. of Ryukyus, 3. KOCHI, JAMSTEC)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R4P-02] Formation process of carbonate minerals in nonaqueous solvents

*Naoki Iwane¹, Jun Kawano¹, Ayako Shinozaki¹, Takaya Nagai¹ (1. Hokkaido Univ. Sci)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R4P-03] **Observations of nano-texture for crocidolite asbestos by using an ultra-highly sensitive STEM imaging method.**

Ichiro Ohnishi¹, *Hayato Miura¹ (1. JEOL Ltd.)

Poster presentation | R7: Petrology, Mineralogy and Economic geology (Joint Session with Society of Resource Geology)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

R7: Petrology, Mineralogy and Economic geology (Joint Session with Society of Resource Geology)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-01] Fluorescence spectra and fluorescence lifetime of photoluminescent opal coming from Sikaribetu area

*Toshifumi Iimori¹, Yuna Fujii² (1. Muroan Tech. Eng., 2. Muroan Tech.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-02] The alteration zone and estimation of formation temperature of the deposit in Urukami area, Togi gold silver deposit in Ishikawa Prefecture.

[Presentation award entry]

*Taiju Kawasaki¹, Maki Hamada¹ (1. Kanazawa University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-03] Cr-bearing garnet veins in Yawatahama City, Ehime Prefecture, Japan

*Satomi ENJU¹, Yohei Shirose¹, Yosuke Shimamura (1. Ehime Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-04] Genesis of Lithium Pegmatites from Myokenzan, Ibaraki Prefecture, Japan

[Presentation award entry]

*Takumi Ishizaki¹ (1. Akita Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-05] Stratiform manganese ore deposits in the Kuga group, eastern Yamaguchi Prefecture: The Arasedani and Kuratani mines

[Presentation award entry]

*Yusaku AKIMOTO¹, Mariko NAGASHIMA¹, Masaaki OWADA¹ (1. Yamaguchi Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-06] Formation of anorthite megacrysts in Oguro lava of Mt. Kayo, Akita Prefecture: Insights from their inclusions

[Presentation award entry]

*Takeyoshi NISHIWAKI¹, Takuya Echigo¹ (1. Akita Univ. IRS.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-07] Formation process of chalcedony at subaqueous volcanism 2 Oga region, Japan

*Natsuko Sano¹, Tsuyoshi Miyamoto², Takahiro Kuribayashi¹, Toshiro Nagase³ (1. Tohoku Univ. Sci., 2. Tohoku Univ. CNEAS, 3. Tohoku Univ. Museum)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-08] The occurrence of feldspar-dominated cristobalite-bearing clast found in a drift pumice of the 2021 eruption of Fukutoku-Oka-no-Ba

*Kenta Yoshida¹, Hikaru Sawada², Yu Maruya³, Wataru Matsuda³ (1. Japan Agency for Marine-Earth Science and Technology (JAMSTEC), 2. University of Toyama, 3. Necono-Wakuwaku Nature School)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-09] Hydration of the mantle and magma genesis in the Izu–Mariana fore-arc region.

*Rion Yamaoka¹, Norikatsu Akizawa¹, Yuji Ichiyama², Akihiro Tamura³, Tomoaki Morishita³ (1. University of Tokyo, 2. Chiba university, 3. Kanazawa university)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-10] Heterogeneity of the uppermost mantle below the Central Graben, Northern Mariana Trough - ReMicrostructural analysis of peridotites from KR02-01 cruise

*Yumiko HARIGANE¹, Akihiro Hasebe Tamura², Ryoko Senda³, Tomoaki Morishita², Hiroyuki Yamashita⁴ (1. Geological Survey of Japan, AIST, 2. Kanazawa University, 3. Kyusyu University, 4. Kanawaga Prefectural Museum of Natural History)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-11] Possible deserpentinized origin of orthopyroxene-rich metaperidotite in the Ray-Iz peridotite massif, Polar Ural

*Satoko ISHIMARU¹, Rie SONODA¹, Makoto MIURA^{2,3}, Vladimir R. SHMELEV⁴, Shoji ARAI³ (1. Kumamoto Univ., 2. GIA, 3. Kanazawa Univ., 4. Zavaritskii Inst. Geol. Geochem., RAS)

Sat. Sep 16, 2023

Poster presentation | S1: Dynamics of igneous processes (Special Session)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

S1: Dynamics of igneous processes (Special Session)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S1P-01] Injection of K₂O-rich magma into magma chambers beneath Myoko volcano

*Morihiisa HAMADA¹, Estelle F. ROSE-KOGA², Kenneth T. KOGA², Kenji SHIMIZU¹, Takayuki USHIKUBO¹, Hideo HARADA³, Andreas AUER⁴, Yoshiaki YAMAGUCHI³ (1. JAMSTEC, 2. ISTO, CNRS-Universite d'Orleans, 3. Shinshu Univ., 4. Shimane Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S1P-02] Repressurization of vesiculated magma inferred from volatile distribution in groundmass glass

*Shumpei YOSHIMURA¹ (1. Hokkaido University)

Poster presentation | R3: High-pressure science and deep Earth's material

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

R3: High-pressure science and deep Earth's material

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-01] Carbon isotope analysis of diamond/graphite recovered from high-pressure experiments by NanoSIMS and IRMS

Hideaki Kawamura¹, *Hiroaki OHFUJI¹, Satish-Kumar Satish-Kumar², Kiran Sasidharan², Akizumi Ishida¹, Kouhei Sasaki³, Naoto Takahata³, Kotaro Shirai³, Akio Suzuki¹ (1. Tohoku Univ. Sci., 2. Niigata Univ. Sci., 3. Univ. Tokyo, AORI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-02] Diamond formation at upper mantle of ice giants

Yoshiki Kenmochi¹, *Takeshi SAKAI¹, Hirokazu Kadobayashi² (1. Ehime University, 2. JASRI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-03] Post-antigorite reaction in cold slab

*Tomoaki KUBO¹, Shingo Yoshida¹, Rikuto Honda¹, Yuta Hiramoto¹, Noriyoshi Tsujino², Sho Kakizawa², Yuji Higo² (1. Kyushu University, 2. JASRI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-04] On the low temperature plasticity of metastable olivine

[Presentation award entry]

*Rikuto Honda¹, Tomoaki Kubo¹, Noriyoshi Tsujino², Yuji Higo², Sho Kakizawa², Yuki Shibazaki³, Yu Nishihara⁴ (1. Kyushu Univ., 2. JASRI, 3. KEK, 4. Ehime Univ. GRC)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-05] Deformation property of Wüstite polycrystals developed by large strain deformation experiments under lower mantle pressures using rotational DAC

[Presentation award entry]

*Bunrin Natsui¹, Shintaro Azuma¹, Keishi Okazaki², Kentaro Uesugi³, Masahiro Yasutake³, Saori Kawaguchi³, Ryuichi Nomura⁴, Kenji Ohta¹ (1. Tokyo Tech, 2. Hiroshima Univ., 3. JASRI, 4. Kyoto Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-06] High-temperature conditions for the rotational diamond anvil cell by near-infrared heating method

*Shintaro AZUMA¹, Keishi Okazaki², Kentaro Uesugi³, Masahiro Yasutake³, Bunrin Natsui¹, Eranga Jayawickrama², Ryuichi Nomura⁴ (1. Tokyo Institute of Technology, 2. Hiroshima University, 3. JASRI, 4. Kyoto University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-07] Measurements of local stress and high pressure phase transition of Fe in in-situ TEM indentation experiments

*Akira MIYAKE¹, Yohei Igami¹, Ryuichi nomura¹ (1. Kyoto Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-08] Real-time measurement of DAC specimen length: Direct measurement of back-to-back distance between diamond anvils and elastic deformation analysis of diamond anvils.

*Akira Yoneda¹, Takuto Kato¹ (1. Osaka Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-09] Density measurement of Ni under high pressure and high temperature using laser-heated DAC combined with X-ray absorption method

*Hidenori TERASAKI¹, Hiroyuki KAMINA¹, Ryo TSURUOKA², Tadashi KONDO², Akira YONEDA², Ko MORIOKA¹, Moe SAKURAI¹, Seiji KAMADA³, Saori I KAWAGUCHI⁴ (1. Okayama University, 2. Osaka University, 3. Tohoku University, 4. JASRI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-10] Density measurement of FeS by X-ray absorption method with laser-heated diamond anvil cell

[Presentation award entry]

*Ko Morioka¹, Hidenori Terasaki¹, Hiroyuki Kamina¹, Ryo Tsuruoka², Tadashi Kondo², Akira Yoneda², Moe Sakurai¹, Saori Kawaguchi³ (1. Okayama Univ. Sci., 2. Osaka Univ. Sci., 3. JASRI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-11] Neutron diffraction measurements and molecular dynamics simulations on FeS hydrides

[Presentation award entry]

*Masahiro Takano¹, Hiroyuki Kagi¹, Yuichiro Mori¹, Katsutoshi Aoki¹, Sho Kakizawa², Asami Sano³, Riko Iizuka⁴, Taku Tsuchiya⁵ (1. The University of Tokyo, 2. JASRI, 3. J-PARC, 4. Waseda University, 5. Ehime University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-12] Melting relations in the system Fe-FeS-FeO at 3 GPa

Kosuke Tsuji¹, *Satoru URAKAWA¹, Hidenori Terasaki¹ (1. Okayama University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-13] Bismuth at high temperature and high pressure

*Shigeaki ONO¹ (1. Japan Agency for Marine-Earth Science and Technology (JAMSTEC))

Poster presentation | R5: Extraterrestrial materials

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

R5: Extraterrestrial materials

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R5P-01] Structural Evolution of Dynamically-compressed Germanium Dioxide

*Hiroto Araga^{1,2}, Yuhei Umeda^{1,2}, Takamichi Kobayashi³, Hitoshi Yusa³, Yusuke Seto⁴, Takuo Okuchi^{1,2} (1. Kyoto Univ. Eng., 2. KURNS Kyoto Univ., 3. NIMS, 4. Osaka Metropolitan Univ. Sci.)

Poster presentation | R6: Plutonic rocks, volcanic rocks and subduction factory

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

R6: Plutonic rocks, volcanic rocks and subduction factory

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-01] Compositional changes in closed and open systems of igneous rocks from northern part of Mt. Shaku-dake, northern Kyushu, SW Japan

*Keisuke ESHIMA¹ (1. Yamaguchi Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-02] Formation of upper-most crust in volcanic belt: Example for Cretaceous volcano-plutonic complex, Hyogo Prefecture, southwest Japan

*Masaaki OWADA¹, Shunsuke Fukuda¹, Atsushi Kamei² (1. Yamaguchi University, 2. Shimane University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-03] **Intrusion and emplacement processes of adakitic magma into the shallow crust: A case study of the Sakainokami plutonic body, Kitakami mountains, northeast Japan**

[Presentation award entry]

*Satoshi SUZUKI¹, Nobuo ASAI¹, Kazuo NAKASHIMA¹, Yasuhiro OGITA², Tatsunori YOKOYAMA², Shuhei SAKATA³, Takeshi OHNO⁴, Takashi YUGUCHI⁵ (1. Yamagata Univ., 2. Japan Atomic Energy Agency, 3. Univ of Tokyo., 4. Gakushuin Univ., 5. Kumamoto Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-04] Identification of multiple components of noble gas isotopes in back-arc lithospheric mantle

*Lena Yokokura¹, Hirochika Sumino¹, Takeshi Kuritani², Yuuki Hagiwara³, Junji Yamamoto⁴ (1. The University of Tokyo, 2. Hokkaido University, 3. JAMSTEC, 4. Kyushu University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-05] Three-dimensional evaluation of internal structures contributing to mass transport distributed in minerals: micropores in K-feldspar in the Toki granite, central Japan.

*Mai Nonaka^{1,2}, Takashi Yuguchi³ (1. Yamagata University, 2. Japan Atomic Energy Agency, 3. Kumamoto University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-06] Magma source and evolution process for Quaternary Magmas from Kuju Volcanoes, Kyushu Island, Southwest Japan Arc.

*Soma Yamanaka¹, Tomoyuki Shibata³, Ryotaro Fujihara¹, Tatsuki Orito¹, Taichi Heijima¹, Masako Yoshikawa³, Tomo Shibata² (1. Hiroshima Univ. Sci., 2. Fukuoka Univ. Sci., 3. Hiroshima Univ. Sci. & Tech.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-07] Geochemical features of the Early Miocene Hachiya Formation in the Chuno Area, Gifu Prefecture, Japan

[Presentation award entry]

*Seiya Saijou¹, Toshiro Takahashi² (1. Niigata Univ. Sci., 2. Niigata Univ)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-09] Cathodoluminescence pattern of quartz and quantitative determination of titanium and aluminum concentration within quartz crystals in the Tono plutonic complex, Kitakami mountains

*Yasuhiro OGITA^{1,2}, Takenri KATO³, Takashi YUGUCHI⁴ (1. Yamagata Univ., 2. JAEA, 3. Nagoya Univ., 4. Kumamoto Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-10] Cathodoluminescence patterns of quartz crystals in granite and their titanium concentrations: implication to crystallization process of quartz in the magma chamber

*Asuka Kato¹, Takenori Kato², Yasuhiro Ogita^{1,3}, Takashi Yuguchi⁴, Eiji Sasao³ (1. Yamagata Univ., 2. Nagoya Univ, 3. JAEA, 4. Kumamoto Univ)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-11] Petrography and Rb-Sr mineral age of mafic dyke rocks on Niban-Rock, Lützow-Holm Complex (LHC), East Antarctica.

*Tomoharu MIYAMOTO¹, Yamashita Katsuyuki², Daniel J. Dunkley³, Toshiaki Tsunogae⁴, Mutsumi Kato⁵ (1. Kyushu University, 2. Okayama University, 3. Polish Academy of Sciences, 4. Univ. of Tsukuba, 5. Chiba University)

Poster presentation | R8: Metamorphic rocks and tectonics

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC | 83G,H,J Sugimoto Campus

R8: Metamorphic rocks and tectonics

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-01] Structural and petrological study of layering in the Horoman Peridotite Complex, Hokkaido, Japan

[Presentation award entry]

*Aya Hihara¹, Miki Tasaka¹, Keisuke Kurihara¹, Tatsuhiko Kawamoto¹, Hajime Taniuchi² (1. Shizuoka University, 2. National Institute of Advanced Industrial Science and Technology)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-02] Geology and petrography of metamorphic rocks in Sibuyan Island, Romblon, Philippines

[Presentation award entry]

*John Kenneth Badillo¹, Gabriel Theophilus Valera¹, Betchaida Payot¹ (1. University of the Philippines Diliman)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-03] **The metamorphic condition of the Oshima peninsula, in the southern part of Yamaguchi prefecture: Implications for metamorphic process and regional structure of the Ryoke metamorphic belt, west Seto Inland sea area**

[Presentation award entry]

*Zejin LU¹, Masaaki Owada¹ (1. Yamaguchi University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-04] Study of flexural slip formed by plate subduction

[Presentation award entry]

*Haruki Yoshiasa¹, Jun-ichi ANDO², SARKAR Dyuti Prakash², DAS Kaushik², GHOSH Gautam³ (1. Hiroshima Univ., 2. Hiroshima Univ., 3. Presidency Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-05] Electron diffuse scattering in omphacite from lawsonite eclogite xenolith in Colorado Plateau: A preliminary report

[Presentation award entry]

*Ryo Fukushima¹, Tatsuki Tsujimori^{1,2}, Nobuyoshi Miyajima³, Tiziana Boffa-Ballaran³, Giacomo Criniti³, Catherine McCammon³ (1. Tohoku Univ. Sci., 2. CNEAS, Tohoku Univ., 3. BGI, Univ. Bayreuth)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-06] **Exhumation process of serpentinite in the Sangun-Renge belt exposed at Sasaguri, Fukuoka prefecture**

[Presentation award entry]

*Swarna ANNADURAI MUNUSAMY¹, Jun-ichi ANDO^{1,2}, Yuki IWASAKI³, Dyuti Prakash SARKAR^{1,2}, Kaushik DAS^{1,2}, Seiichiro UEHARA⁴ (1. Hiroshima Univ., 2. HiPeR, Hiroshima, 3. NIPPON STEEL CORP., 4. The Kyushu Univ. Museum)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-07] Mineral and bulk compositions of an outcrop showing a symmetric sequence composed of peridotite and mafic-rock layers of Horoman peridotite, Japan

[Presentation award entry]

*Keisuke Kurihara¹, Tatsuhiko Kawamoto¹, Aya Hihara¹, Miki Tasaka¹, Hajime Taniuchi², Takeshi Kuritani³, Akiko Matsumoto³ (1. Shizuoka Univ., 2. AIST, 3. Hokkaido Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-08] Mechanism of seismic fault generation involving in pseudotachylyte formation in ductile regime: examples from Sarwar-Junia Fault Zone, India

[Presentation award entry]

*Junya OKAZAKI¹, Jun-ichi Ando¹, Kaushik Das¹ (1. Hiroshima University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-09] Water content distributions in dynamically recrystallized quartz grains in granitoid mylonites: A case of an inner shear zone in the Ryoke Belt in the Kishiwada area, Osaka

*Takemasa Norimura¹, Junichi Fukuda¹ (1. Osaka Metrop. Univ. Geosci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-10] **Deformation microstructures and slip systems developed in olivine from the Petit-spot peridotite xenoliths: Insights on deformation mechanisms and anisotropy of upper mantle**

*Dyuti Prakash SARKAR^{1,2}, Norikatsu Akizawa³, Jun-ichi Ando^{1,2}, Masako Yoshikawa^{1,2} (1. Hiroshima University, 2. HiPeR, 3. The University of Tokyo)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-11] Novel automated method for estimating the peak temperature from the crystallinity of carbonaceous material using EM algorithm

*Yoshihiro NAKAMURA¹, Tarojiro MATSUMURA¹, Kazuhiro MIYAZAKI¹ (1. AIST)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-12] Zircon U-Pb ages of the Oura igneous complex, northern Kyoto area, SW Japan and its tectonic correlation

*Kosuke KIMURA¹, Kenta Kawaguchi², Nobuhiko Nakano², Tatsuro Adachi², Kaushik Das³ (1. Osaka Metropolitan Univ. Sci., 2. Kyushu Univ., 3. Hiroshima Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-13] Metasomatic syenite at the interface between charnockite and calc-silicate granulite, Eastern Ghats Belt, India: Mineral-chemical characterization and its implications during orogenesis

*Kaushik DAS^{1,4}, Proloy Ganguly², Sankar Bose^{3,4} (1. Hiroshima University, 2. Durgapur Government College, Department of Geology, Durgapur, India, 3. Presidency University, Kolkata, India, 4. HiPeR, Hiroshima)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-14] Petrography of V and Zn-rich gahnite-sillimanite-muscovite gneiss from Menipa, Sør Rondane Mountains, East Antarctica

*Tatsuro ADACHI¹, Tetsuo Kawakami², Fumiko Higashino², Masaoki Uno³ (1. Kyushu University, 2. Kyoto University, 3. Tohoku University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-15] Unraveling the Link Between Deformation, Metamorphism, and Fluid Flow in the Archean Dharwar Craton, Southern India

*Sreehari LAKSHMANAN¹, Kiran Sasidharan², Satish-Kumar Madusoodhan², Tsuyoshi Toyoshima² (1. Shimane Uni., 2. Niigata Uni.)

Poster presentation | S2: Water Rock Interaction (Special Session)

📅 Fri. Sep 15, 2023 12:00 PM - 2:00 PM JST | Fri. Sep 15, 2023 3:00 AM - 5:00 AM UTC | 🏠 83G,H,J
Sugimoto Campus

S2: Water Rock Interaction (Special Session)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-01] Crack and alteration changes in oceanic crust inferred from joint model of elastic-wave velocity and electrical resistivity

*Ikuo KATAYAMA¹, Kazumasa Tanimoto¹, Yuya Akamatsu² (1. Hiroshima University, 2. Japan Agency for Marine-Earth Science and Technology)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-02] Listvenite and serpentinite from Urayama River, Shikokuchuo City, Ehime Prefecture, Japan

*Hikaru Takagaki¹, Yohei Shirose¹ (1. Ehime Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-03] Serpentinites from the Udonohana ultramafic body, Western Ehime Prefecture, Japan.

[Presentation award entry]

*Yui Joguchi¹, Satomi Enju¹ (1. Ehime Univ. Sci. & Eng.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-04] Texture and chemical composition of pyroxene pseudomorphs in ultramafic rocks derived from mantle wedges

*Takumi Wani¹, Yuji Ichiyama¹, Tomoaki Morishita², Akihiro Tamura² (1. Chiba University, 2. Kanazawa University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-05] Fluid inclusions of multi-generational carbonated veins in serpentinite at Chenaillet ophiolite and Lago Nero ophiolite, Western Alps, and Oman ophiolite

[Presentation award entry]

*Tomohiro INUKAI¹, Tatsuhiko Kawamoto¹, Mikiya Kageta¹, Miki Tasaka¹, Hajime Taniuchi², Kenneth Koga³, Estelle Rose-Koga³, Christian Nicollet⁴, Baptiste Debret⁵, Marguerite Godard⁶ (1. Shizuoka University, 2. AIST, 3. Université Orléans, CNRS, 4. Université Clermont Auvergne, CNRS, 5. Institut de physique du globe de Paris, CNRS, 6. Université Montpellier 2, CNRS)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S2P-06] C-isotope composition of graphite associated with green V-bearing grossular and origin of COH fluid from Menipa, Sør Rondane Mountains, East Antarctica

*Tetsuo KAWAKAMI¹, Tasuro Adachi³, Satish-Kumar M.², Fumiko Higashino¹, Masaoki Uno⁴ (1. Kyoto Univ. Sci., 2. Niigata Univ. Sci., 3. Kyushu Univ. Soc., 4. Tohoku Univ. Env.)

Crack and alteration changes in oceanic crust inferred from joint model of elastic-wave velocity and electrical resistivity

*Ikuo KATAYAMA¹, Kazumasa Tanimoto¹, Yuya Akamatsu²

1. Hiroshima University, 2. Japan Agency for Marine-Earth Science and Technology

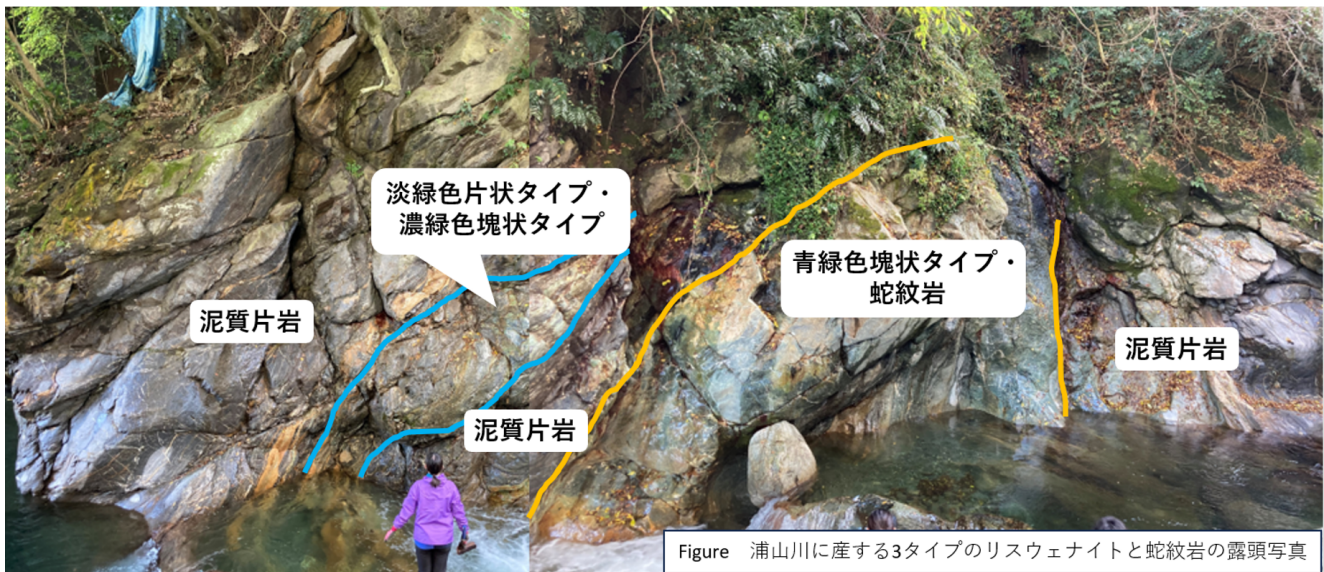
Keywords: Seismic velocity, Electrical resistivity, Oceanic crust

Listvenite and serpentinite from Urayama River, Shikokuchuo City, Ehime Prefecture, Japan

*Hikaru Takagaki¹, Yohei Shirose¹

1. Ehime Univ. Sci.

Keywords: listvenite, serpentinite, antigorite, Urayama River, chromite

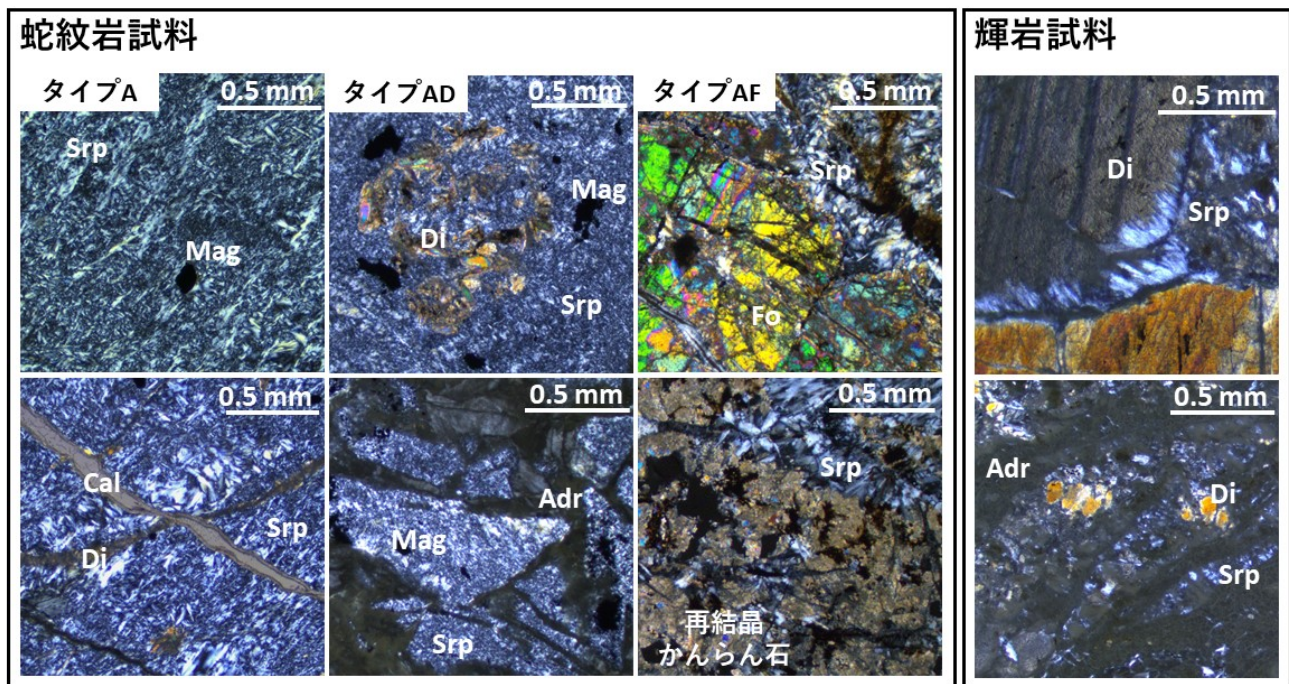


Serpentinites from the Udonohana ultramafic body, Western Ehime Prefecture, Japan.

*Yui Joguchi¹, Satomi Enju¹

1. Ehime Univ. Sci. & Eng.

Keywords: serpentinite, ultramafic rocks



図：蛇紋岩と輝岩の偏光顕微鏡写真(クロスニコル)

Srp:蛇紋石 Mag:磁鉄鉱 Fo:苦土かんらん石 Di:透輝石 Adr:灰鉄ザクロ石 Cal:方解石

Texture and chemical composition of pyroxene pseudomorphs in ultramafic rocks derived from mantle wedges

*Takumi Wani¹, Yuji Ichiyama¹, Tomoaki Morishita², Akihiro Tamura²

1. Chiba University, 2. Kanazawa University

Keywords: Kurosegawa Belt, Mantle wedge, Pyroxene pseudomorph, Richterite

Fluid inclusions of multi-generational carbonated veins in serpentinite at Chenaillet ophiolite and Lago Nero ophiolite, Western Alps, and Oman ophiolite

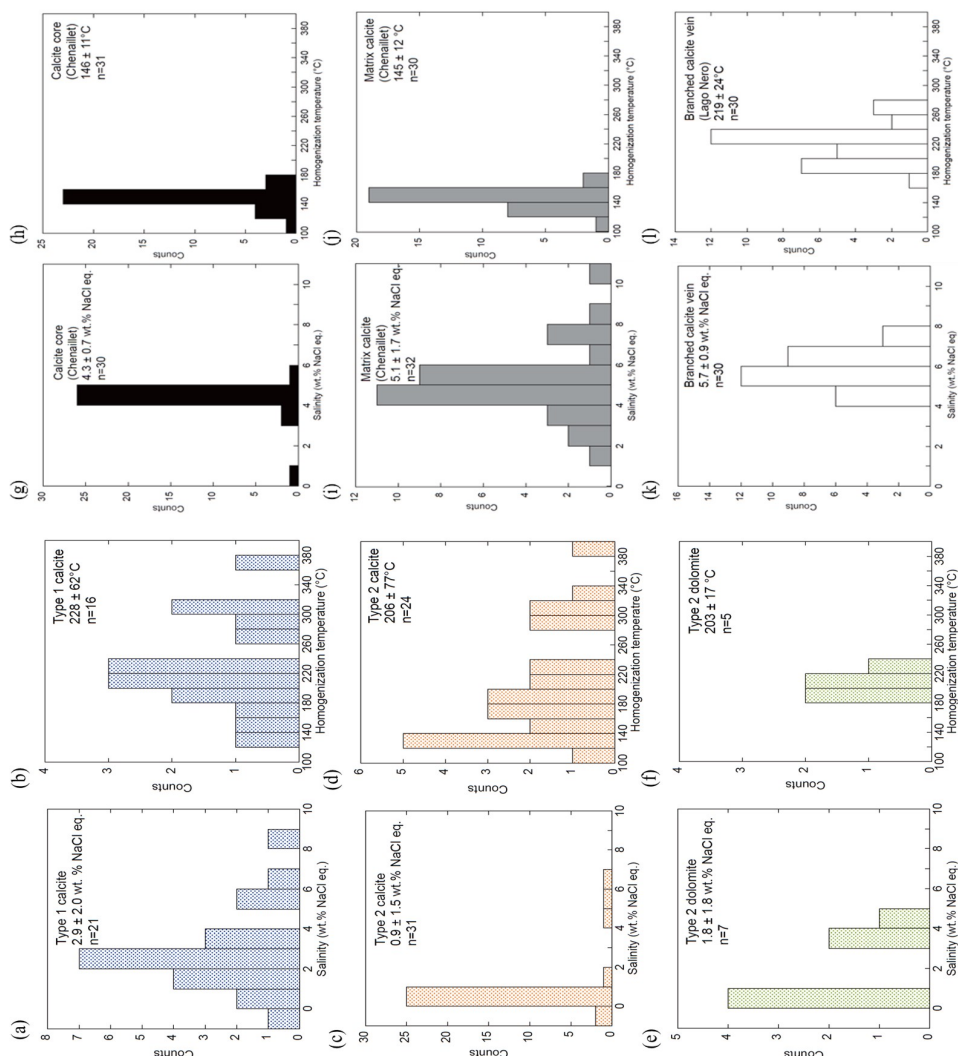
*Tomohiro INUKAI¹, Tatsuhiko Kawamoto¹, Mikiya Kageta¹, Miki Tasaka¹, Hajime Taniuchi², Kenneth Koga³, Estelle Rose-Koga³, Christian Nicollet⁴, Baptiste Debret⁵, Marguerite Godard⁶

1. Shizuoka University, 2. AIST, 3. Université Orléans, CNRS, 4. Université Clermont Auvergne, CNRS, 5. Institut de physique du globe de Paris, CNRS, 6. Université Montpellier 2, CNRS

Keywords: opihcarbonate, fluid inclusion, salinity, homogenization temperature, hydrothermal fluid

	Type 1 炭酸塩脈 (Oman)	Type 2 カルサイト (Oman)	Type 2 ドロマイト (Oman)	炭酸塩コア (Chenaillet)	マトリックス炭酸塩 (Chenaillet)	枝状炭酸塩脈 (Lago Nero)
塩濃度 (wt.% NaCl eq.)	2.9 ± 2.0	0.9 ± 1.5	1.8 ± 1.8	4.3 ± 0.7	5.1 ± 1.7	5.7 ± 0.9
均質化温度 (°C)	228 ± 62	206 ± 77	203 ± 17	146 ± 11	145 ± 12	219 ± 24

表：マイクログラフイーターの結果



図：マイクログラフイーターの結果

C-isotope composition of graphite associated with green V-bearing grossular and origin of COH fluid from Menipa, Sør Rondane Mountains, East Antarctica

*Tetsuo KAWAKAMI¹, Tasuro Adachi³, Satish-Kumar M.², Fumiko Higashino¹, Masaoki Uno⁴

1. Kyoto Univ. Sci., 2. Niigata Univ. Sci., 3. Kyushu Univ. Soc., 4. Tohoku Univ. Env.

The Sør Rondane Mountains (SRM) is divided into the NE terrane and the SW terrane. The granulite-facies gneisses in the NE terrane records clockwise *P-T-t* path whereas those in the SW terrane records counter-clockwise *P-T-t* path. Kawakami et al. (2022) used a Sil-Bt-Grt gneiss and graphitic Sil-Bt gneiss containing green V-bearing grossular from Menipa in the SW terrane to construct a *P-T-t* path. They concluded that Menipa experienced a clockwise *P-T-t* path and ca. 600-560 Ma was the timing of prograde metamorphism and the peak metamorphic conditions of ~1.0 GPa, ~800 °C were attained at ca. 560 Ma. The green grossular is surrounded by symplectite that consists of An+V-Cpx+V-Grt+V-Ttn+V-Zoi+Qz+Ap+V-Ti-Fe oxide+Pyh+Py+Cal, and the symplectite formation was dated to be ca. 550 Ma by U-Pb dating of titanite in the symplectite. The graphitic Sil-Bt gneiss rarely contains green grossular of ~10 cm in diameter, which is associated with a crust of quartz aggregate. The quartz includes fluid inclusions containing CO₂+CH₄. This suggest that COH fluid played a role in coarsening the green grossular. Some symplectites replacing the rim of green grossular are filling their pressure shadows, suggesting that the symplectite formation was contemporaneous with or postdated the formation of the matrix foliation defined by the arrangement of Sil+Bt. The outermost part of the symplectite is coarse-grained than the inner part and accompanies graphite which shows $\delta^{13}\text{C} = -24.74 \pm 0.01$, which is a typical biogenic value. The symplectite is also developed along the cracks in the green grossular. The extension of the crack turns into healed cracks recognized as a linear, higher-V grossular narrow band along which calcite inclusions are found. Therefore, COH fluid infiltration took place during the symplectite formation. Graphite is also found in the symplectite developed along the crack, indicating that some graphite crystals recrystallized from the COH fluid. Since precipitation of V requires a reducing environment, the graphite was probably already present in the protolith of the graphitic Sil-Bt gneiss. Therefore, the COH fluid is likely a reaction product of graphite in the gneiss and aqueous fluid.

Keywords: Continental collision zone, COH fluid, metamorphism, graphite, C-isotope composition

Poster presentation | R1: Characterization and description of minerals (Joint Session with The Gemmological Society of Japan)

📅 Fri. Sep 15, 2023 12:00 PM - 2:00 PM JST | Fri. Sep 15, 2023 3:00 AM - 5:00 AM UTC | 🏢 83G,H,J Sugimoto Campus

R1: Characterization and description of minerals (Joint Session with The Gemmological Society of Japan)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-01] Chemical compositions and a CHIME age of monazite from the Ishikawa district, Fukushima Prefecture, Japan

*Yasuyuki BANNO¹ (1. AIST)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-02] Intensity tensor of Mössbauer quadrupole doublet for Fe³⁺ at M1 site of aegirine-augite

*Keiji SHINODA¹, Yasuhiro KOBAYASHI² (1. Osaka Metro. Univ. Sci., 2. Kyoto Univ. KURNS.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-03] Si and Al ordering indices for cordierite using single crystal X-ray diffraction

*Nishikawa Chihiro¹, Shinoda Keiji¹, Seto Yusuke¹ (1. Osaka Metro Univ. Sci)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-04] Proposal of analytical method for determination of Sr concentration in plagioclase by EPMA

*Kurumi IWAHASHI¹, Atsushi Yasuda², Ayumu Nishihara¹ (1. GSJ, AIST, 2. ERI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-05] Mineralogical and chemical features of tiny bronze fragments from the Yashin Tepe archaeological site, northeastern Iraq

*Masanori KUROSAWA¹, Kei Ikehata¹, Shin'ichi Nishiyama² (1. Univ. Tsukuba, 2. Chubu Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-06] Amethyst Crystals from Mitsuiwa-mountain in Nanmoku Village, Gunma Prefecture

*Masayuki KAWASAKI¹ (1. Tsukuba City)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-07] Claraite from the Ashio mine, Tochigi prefecture, Japan

*Takefumi NIWA¹, Daisuke Nishio-Hamane², Shouichi Doi¹, Hiroshi Sakurai¹, Numao Atsushi (1. Min. Soc. Nagoya, 2. ISSP, Univ. of Tokyo)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-08] Mineralogical study of tourmaline and gabbroic pegmatites in gabbro from Kajishima, Ehime Prefecture, Japan

[Presentation award entry]

*Itsuki Ota¹, Kazuya Shimooka¹, Satoshi Saitou¹, Yohei Shirose¹ (1. Ehime Univ. Sci. and Eng.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-09] Proto-ferro-anthophyllite in a granitic pegmatite from Nomi Island, Hiroshima Prefecture, Japan

*Masayuki Ohnishi¹, Norimasa Shimobayashi², Daisuke Nishio-Hamane³, Shinoda Keiji⁴, Satomi Enju⁵ (1. Non, 2. Kyoto Univ., 3. ISSP, Univ. of Tokyo, 4. Osaka Metro. Univ., 5. Ehime Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-10] Norrishite from Funakozawa mine and Kotamagawa mine, Iwate Prefecture, Japan

*Daisuke HAMANE¹, Mariko Nagashima², Yasumitsu Suzuki (1. ISSP, 2. Yamaguchi Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-11] **Berthierine and Chamosite in BIF of the Cleaverville Formation, Pilbara craton, Western Australia**

*Yusuke Inokuchi¹, Shoichi Kiyokawa², Yuya Takeda³, Seiichirou Uehara⁴ (1. Kyushu Univ. Sci. , 2. Kyushu Univ. Sci. , 3. Kyushu Univ. ISGS., 4. Kyushu Univ. Museum.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R1P-12] Microstructure of serpentine veins containing native iron in dunite in Oshika Village, Nagano Prefecture, Japan

*Yuya TAKEDA¹, Yoshihiro Kuwahara², Seiichiro Uehara³ (1. kyushu Univ. ISGS, 2. kyushu Univ. SCS, 3. kyushu Univ. Museum)

Chemical compositions and a CHIME age of monazite from the Ishikawa district, Fukushima Prefecture, Japan

*Yasuyuki BANNO¹

1. AIST

Monazite in a granite pegmatite from the Ishikawa district, Fukushima Prefecture, Japan was examined in terms of U, Th, Pb, and rare earth element (REE) chemistry by electron microprobe analysis. An averaged empirical formula was $(\text{Ce}_{0.383}\text{Nd}_{0.204}\text{La}_{0.136}\text{Y}_{0.062}\text{Sm}_{0.061}\text{Pr}_{0.050}\text{Gd}_{0.040}\text{Dy}_{0.014}\text{Er}_{0.002}\text{Th}_{0.046}\text{U}_{0.005}\text{Ca}_{0.011})_{\Sigma 1.014}(\text{P}_{0.952}\text{Si}_{0.040})_{\Sigma 0.992}\text{O}_4$. The CHIME monazite age is 103 ± 26 Ma (2σ).

Keywords: Monazite, Chemical composition, CHIME dating, Granite pegmatite, Ishikawa district

Intensity tensor of Mössbauer quadrupole doublet for Fe³⁺ at *M1* site of aegirine-augite

*Keiji SHINODA¹, Yasuhiro KOBAYASHI²

1. Osaka Metro. Univ. Sci., 2. Kyoto Univ. KURNS.

Keywords: aegirine-augite, Mössbauer spectroscopy, intensity tensor

Si and Al ordering indices for cordierite using single crystal X-ray diffraction

*Nishikawa Chihiro¹, Shinoda Keiji¹, Seto Yusuke¹

1. Osaka Metro Univ. Sci

Keywords: cordierite, order-disorder transition, single crystal X-ray diffraction

Proposal of analytical method for determination of Sr concentration in plagioclase by EPMA

*Kurumi IWAHASHI¹, Atsushi Yasuda², Ayumu Nishihara¹

1. GSJ, AIST, 2. ERI

Keywords: EPMA, Strontium , Plagioclase, Quantitative analysis

Mineralogical and chemical features of tiny bronze fragments from the Yashin Tepe archaeological site, northeastern Iraq

*Masanori KUROSAWA¹, Kei Ikehata¹, Shin'ichi Nishiyama²

1. Univ. Tsukuba, 2. Chubu Univ.

Tiny corroded bronze fragments, excavated from the Neo-Assyrian Yashin Tepe site at northeastern Iraq, were analyzed with SEM-EDS, Raman microprobe, ICP-MS, and MC-ICP-MS to elucidate original chemical features of bronzewares distributed in the eastern border of the Neo Assyrian Empire. The bronze fragments, tens micron to a 1 mm in sizes, were mainly covered with malachite on the surface, and inside there was tin-copper alloy with patches of pure-copper separated. A thin film of copper sulfate and tiny particles of lead chloride were often observed under the surface layer of malachite. The tin-copper alloy with little corrosion was a low-tin bronze with low lead content, could corresponding to a chemical composition of original bronze related to the bronze fragments. In addition, the composition was almost the same as those of the bronze products excavated from the Nimrud site, capital of Neo-Assyria, implying strong ties between the capital and the border. The bronze fragments also contained almost no impurities such as As, Sb, Ni, and Bi. Copper isotopic ratios ($\delta^{65}\text{Cu}$) of the fragments ranged from -0.83‰ to 0.57‰. Both features were consistent with those of the copper materials that were widely distributed during the Neo-Assyrian period.

Keywords: bronzeware, corrosion, chemical analysis, copper isotope, Neo Assyria

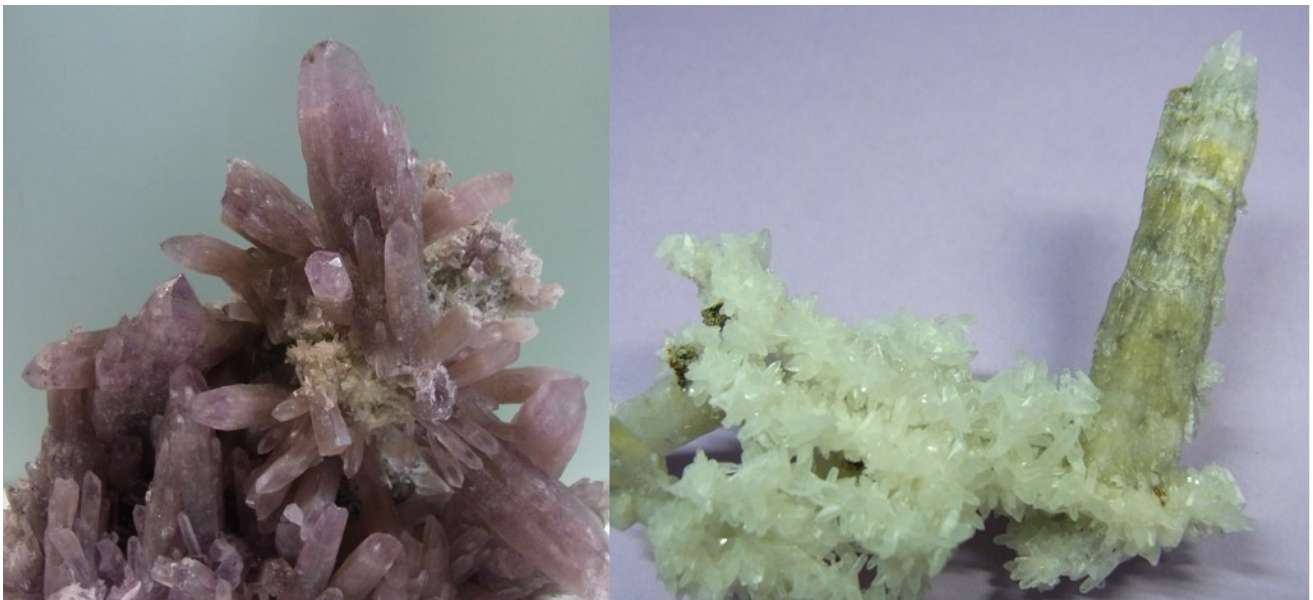
Amethyst Crystals from Mitsuiwa-mountain in Nanmoku Village, Gunma Prefecture

*Masayuki KAWASAKI¹

1. Tsukuba City

Amethyst crystals from Mitsuiwa-mountain, Nanmoku Village were reported. Druses in black clay vein between limestone and green schist included amethyst, inclusion-bearing quartz and the aggregation of small quartz crystals.

Keywords: Quartz, Amethyst, Clay Vein



アメシスト(写真幅13cm)

微小水晶とインクルージョン含有
水晶(写真幅7.5cm)

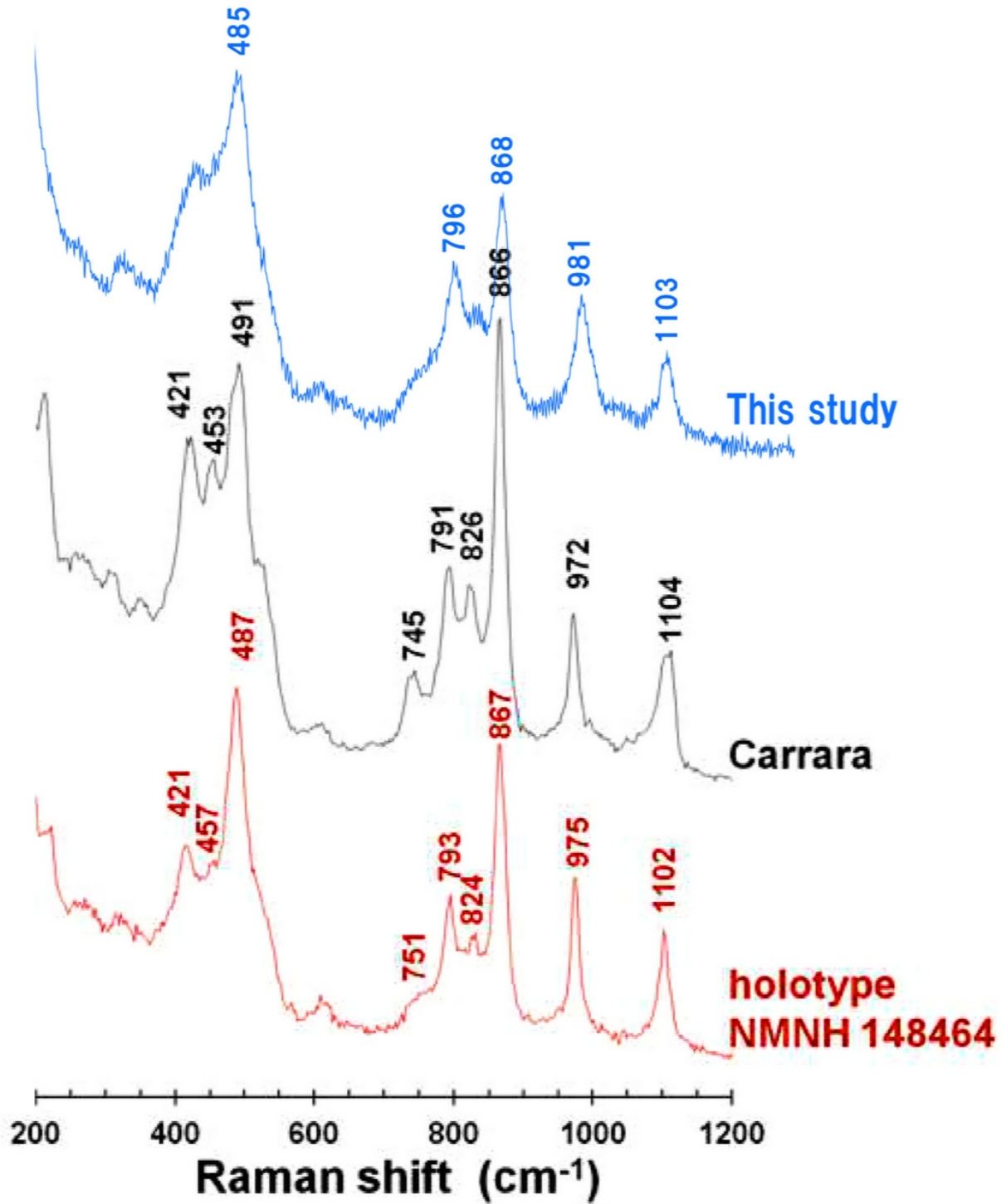
Claraite from the Ashio mine, Tochigi prefecture, Japan

*Takefumi NIWA¹, Daisuke Nishio-Hamane², Shouichi Doi¹, Hiroshi Sakurai¹, Numao Atsushi

1. Min. Soc. Nagoya, 2. ISSP, Univ. of Tokyo

Claraite was found from the outcrop on the western side of Mt. Bizentateyama, which is included in the Ashio mine area, in Ashio-cho, Nikko City, Tochigi Prefecture. Various arsenate, sulfate and carbonate minerals are reported from this outcrop. Claraite originated from the Clara mine in Germany and was reported in 1982 with the ideal chemical formula of $(\text{Cu,Zn})_3\text{CO}_3(\text{OH})_4 \cdot 4\text{H}_2\text{O}$. Later, several studies added new data, and in 2017 it was redefined as the ideal chemical formula of $(\text{Cu,Zn})_{15}(\text{AsO}_4)_2(\text{CO}_3)_4(\text{SO}_4)(\text{OH})_{14} \cdot 7\text{H}_2\text{O}$. Claraite from ashio mine is a turquoise-blue, spherical aggregate in the cavity of limonite accompanied Chalcophyllite and brochantite. Under the microscope, it is a lamellar crystal aggregate, and complete cleavage can be confirmed. The Raman spectra are in good agreement with the paper of Biagioni and Orlandi (2017). Although the chemical composition and X-ray diffraction data are incomplete, they are almost consistent with the same paper.

Keywords: Claraite, Ashio mine



Mineralogical study of tourmaline and gabbroic pegmatites in gabbro from Kajishima, Ehime Prefecture, Japan

*Itsuki Ota¹, Kazuya Shimooka¹, Satoshi Saitou¹, Yohei Shirose¹

1. Ehime Univ. Sci. and Eng.

Keywords: Kajishima, Gabbro, Tourmalime, Pegmatite, Magnesio-hornblend

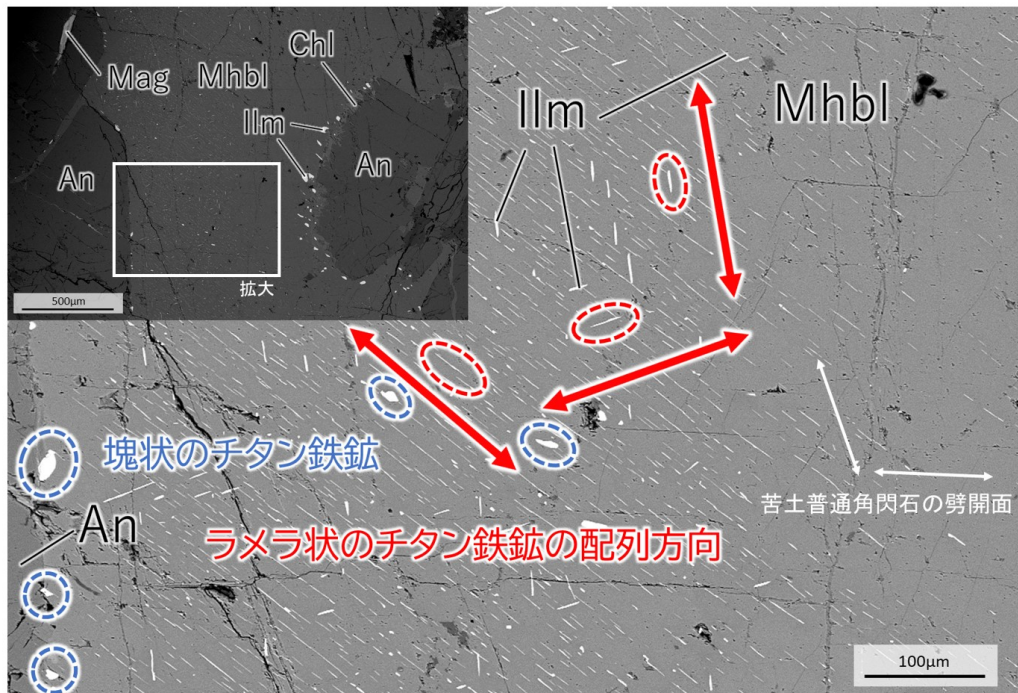


Figure 1 斑れい岩pegmatite中の苦土普通角閃石中のチタン鉄鉱(反射電子像)
An: 灰長石、Chl: 緑泥石、Ilm: チタン鉄鉱、Mag: 磁鉄鉱、Mhbl: 苦土普通角閃石

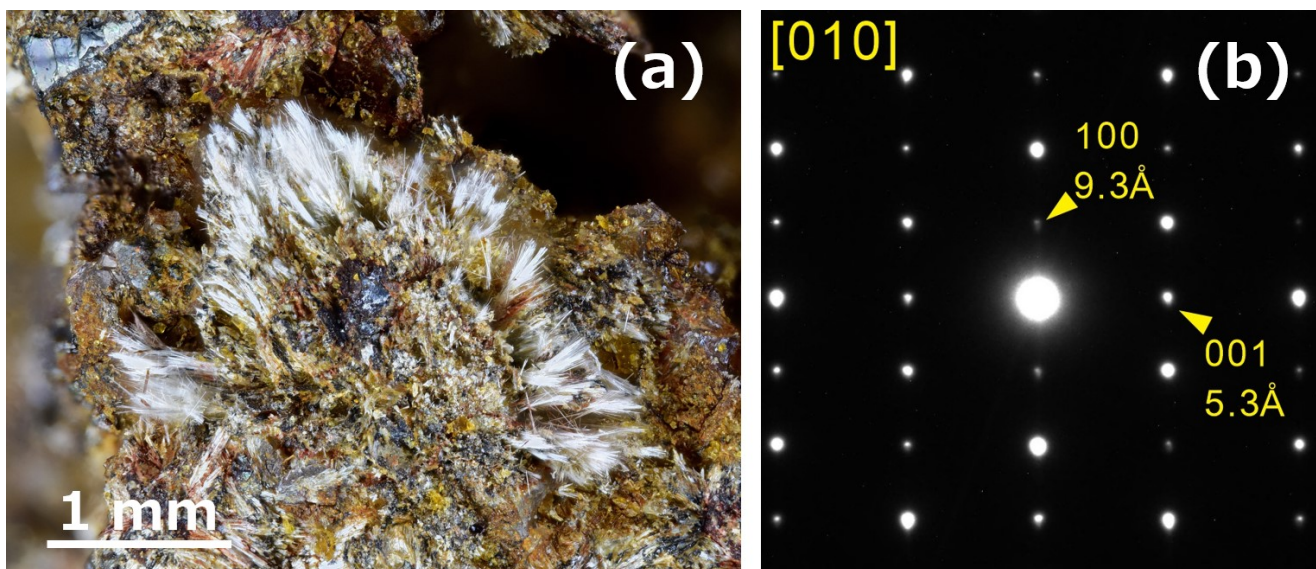
Proto-ferro-anthophyllite in a granitic pegmatite from Nomi Island, Hiroshima Prefecture, Japan

*Masayuki Ohnishi¹, Norimasa Shimobayashi², Daisuke Nishio-Hamane³, Shinoda Keiji⁴, Satomi Enju⁵

1. Non, 2. Kyoto Univ., 3. ISSP, Univ. of Tokyo, 4. Osaka Metro. Univ., 5. Ehime Univ.

Proto-ferro-anthophyllite was found in a granitic pegmatite from Nomi Island (Ogaki-cho Okimi, Etajima City), Hiroshima Prefecture, Japan. The mineral occurs as fibrous crystals up to 4 mm in length, in association with fayalite, magnetite, “biotite”, and quartz. It is white to colorless or pale brown, transparent with a vitreous luster. The refractive indices are $\alpha = 1.670(3)$, $\beta = \text{n.d.}$, and $\gamma = 1.704(3)$. SEM-EDS analyses gave the empirical formula $(\text{Vacancy})_{0.89}\text{Na}_{0.10}\text{K}_{0.01}\sum_{\Sigma}1.00(\text{Fe}_{6.24}\text{Mg}_{0.41}\text{Mn}_{0.36}\text{Ca}_{0.02}\text{Cr}_{0.01}\text{Ti}_{0.01})\sum_{\Sigma}7.05(\text{Si}_{7.90}\text{Al}_{0.10})\sum_{\Sigma}8.00\text{O}_{22}(\text{OH})_2$ on the basis of $\text{O} = 22$ (anhydrous part). Selected area electron diffraction pattern indicated the $Pnmn$ structure type. The unit cell parameters calculated from powder X-ray diffraction data are $a = 9.43(3)$, $b = 18.14(3)$, and $c = 5.34(1)$ Å. It is likely that proto-ferro-anthophyllite from Nomi Island was formed by a late-hydrothermal alteration of fayalite.

Keywords: Proto-ferro-anthophyllite, Amphibole, Granitic pegmatite, Nomi Island, Etajima



Norrishite from Funakozawa mine and Kotamagawa mine, Iwate Prefecture, Japan

*Daisuke HAMANE¹, Mariko Nagashima², Yasumitsu Suzuki

1. ISSP, 2. Yamaguchi Univ.

We found a large amount of norrishite as lithium-dominant mica from the Funakozawa mine and the Kotamagawa mine. Norrishite from both mine is commonly occurred as brown transparent plate or foil-like crystals in thin layers parallel to the schist. The appearance corresponds to that of so-called biotite, generally less than 0.5 mm in size, but as large as 2 mm. The norrishite-bearing layer is composed mainly of fine quartz and is accompanied by aegirine, amphibole, and braunite. Since the presence of lithium and trivalent manganese was evident from the single crystal XRD experiment described below, the EDS analysis was normalized to Al + Si = 4, and the lack of M sites was estimated as lithium. The chemical compositions were $K_{1.02}(Mn^{3+}_{2.10}Mg_{0.07}Ti_{0.02}Li_{0.81})_{\Sigma 3}(Al_{0.17}Si_{3.83})_{\Sigma 4}O_{12.16}$ (Funakozawa mine), $K_{1.00}(Mn^{3+}_{1.94}Mg_{0.13}Ti_{0.06}Li_{0.87})_{\Sigma 3}(Al_{0.24}Si_{3.76})_{\Sigma 4}O_{11.94}$ (Kotamagawa mine). The crystal structure was examined by single-crystal XRD, and crystals with fewer inclusions from Funakozawa mine were used. Single-crystal XRD yielded lattice constants of $a = 5.3024(2)$, $b = 8.9520(4)$, $c = 10.0812(5)$ Å, $\beta = 98.191(4)^\circ$, and $V = 473.65(3)$ Å³ in space group $C2/m$, with structure refinement converging at $R1 = 4.3\%$. The M1 site was estimated as the occupancy of Li and Mn, resulting in $Li_{0.944(4)}Mn_{0.056}$. For the M2 site, occupancy was estimated using only Mn, resulting in $Mn_{0.970(3)}$. BVS calculations yielded $M1 = 1.02$, $M2 = 3.08$, and $O4 = 1.68$, which is consistent with the characteristics of norrishite, where $M1 = \text{lithium}$, $M2 = \text{trivalent manganese}$, and anhydrous. The M2 site is strongly distorted due to the Jahn-Teller effect by trivalent manganese, which is thought to be the cause of the refusal of other elements to the M2 site.

Keywords: Norrishite, Funakozawa mine, Kotamagawa mine



Norrishite from the Funakozawa mine (FOV = 3.5 cm)

Berthierine and Chamosite in BIF of the Cleaverville Formation, Pilbara craton, Western Australia

*Yusuke Inokuchi¹, Shoichi Kiyokawa², Yuya Takeda³, Seiichirou Uehara⁴

1. Kyushu Univ. Sci. , 2. Kyushu Univ. Sci. , 3. Kyushu Univ. ISGS., 4. Kyushu Univ. Museum.

Keywords: Banded Iron Formation, Berthierine

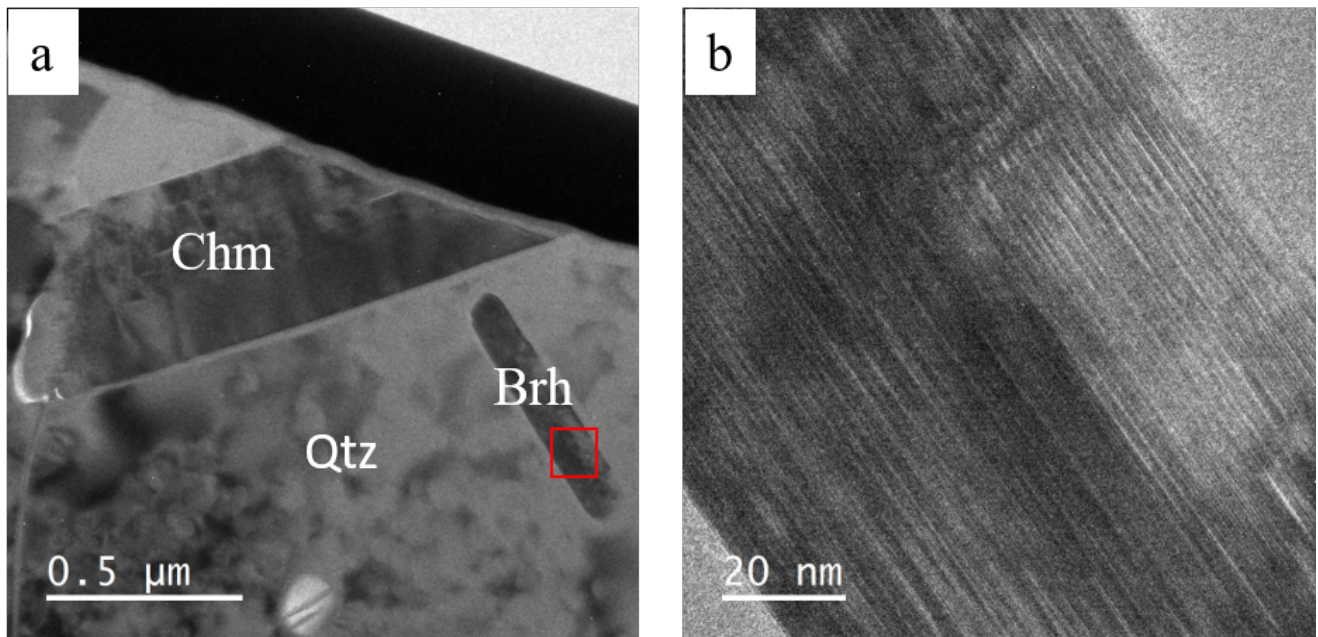


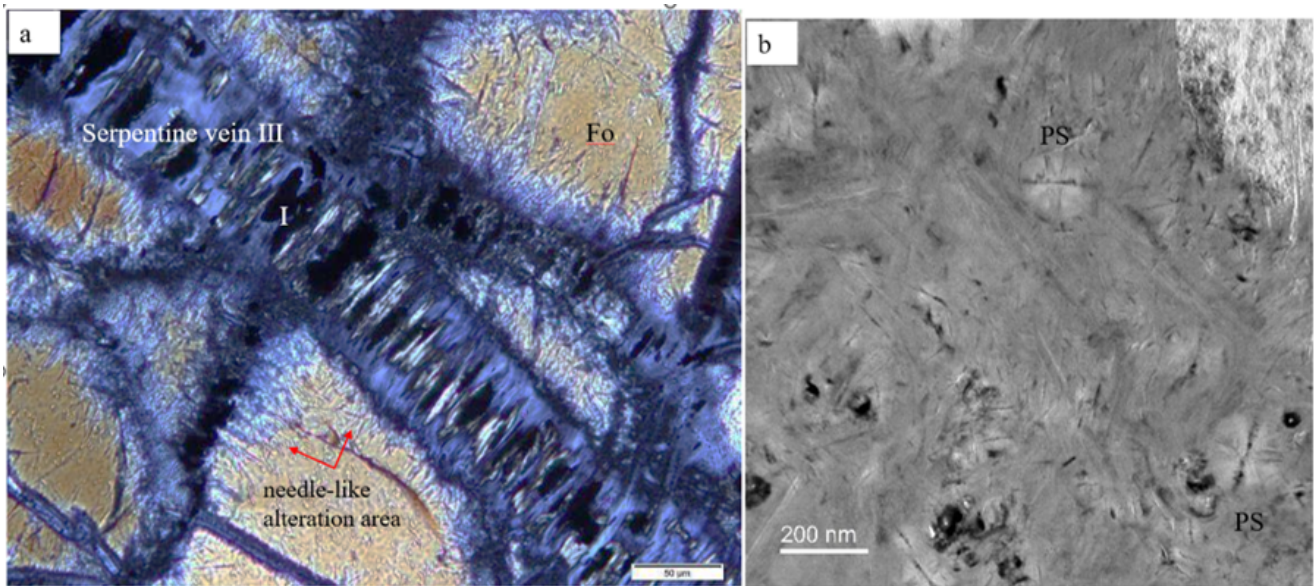
Fig. 1 (a)TEM images of chamosite and berthierine. (b) Enlarged TEM image of berthierine in the red box area of (a). Qtz: Quartz. Chm: chamosite. Brh: berthierine.

Microstructure of serpentine veins containing native iron in dunite in Oshika Village, Nagano Prefecture, Japan

*Yuya TAKEDA¹, Yoshihiro Kuwahara², Seiichiro Uehara³

1. kyushu Univ. ISGS, 2. kyushu Univ. SCS, 3. kyushu Univ. Museum

Keywords: serpentine, native iron



Photographs of serpentine vein including native iron.

(a) Polarized optical microscope image of serpentine vein and needle-like alteration area.

(b) Bright field TEM images of polygonal serpentine.

I: iron. Fo: forsterite. PS: polygonal serpentine.

Poster presentation | R2: Crystal structure, crystal chemistry, physical properties of minerals, crystal growth and applied mineralogy

📅 Fri. Sep 15, 2023 12:00 PM - 2:00 PM JST | Fri. Sep 15, 2023 3:00 AM - 5:00 AM UTC | 🏢 83G,H,J Sugimoto Campus

R2: Crystal structure, crystal chemistry, physical properties of minerals, crystal growth and applied mineralogy

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-01] Development of simulation software for electron microscope images and electron diffraction patterns based on dynamical scattering theory

*Yusuke SETO¹, Masahiro OHTSUKA² (1. Osaka Metropolitan Univ. Sci., 2. Nagoya Univ. IMASS.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-02] Synthesize of potassium silicate mineral fertilizer from drifted pumice

[Presentation award entry]

*Haruki Urazoe¹, Hiroaki Ohfuji¹ (1. Tohoku University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-03] In-situ observation using x-ray diffraction for phase transitions of NH₄Cl under low-temperature or high-pressure

*Kazuki Komatsu¹, Takanori Murakami¹, Satoshi Nakano², Hiroyuki Kagi¹ (1. Sci. UTokyo, 2. NIMS)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-04] Synthetic of potassium silicate minerals from a weathered granite with alkaline fluxes

[Presentation award entry]

*Hiroki Ishida¹, Hiroaki Ohfuji¹ (1. Tohoku Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-05] Synthesis and characterization of euohedral silica clathrate with isopropylamine

*Shusuke Isogai¹, Nobuyuki Tamai¹, Yuka Yokoyama¹, Atsushi Tani¹, Yusuke Seto² (1. Kobe Univ. Human Dev. Environ., 2. Osaka Metropolitan Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-06] Searching for clues to the origin of carbonado, an enigmatic polycrystalline diamond through analysis of nano-inclusions

[Presentation award entry]

*Wataru Taneya¹, Hiroaki Ohfuji¹ (1. Tohoku University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-07] **Differences in the effects of Na and K on the calcitization of vaterite.**

*Noboru FURUKAWA¹, Ami Kinoda¹ (1. Chiba University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-08] Synthesis and validation of zircon for detection of alpha recoil tracks

*Maki HAMADA¹, Noriko Hasebe² (1. Kanazawa University, 2. Institute of Nature and Environmental Technology, Kanazawa University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R2P-09] Raman spectra for estimation of the Fe³⁺ content in clinzoisite-epidote series

*Mariko NAGASHIMA^{1,2}, Boriana Mihailova² (1. Yamaguchi Univ. Sci., 2. Univ. Hamburg)

Development of simulation software for electron microscope images and electron diffraction patterns based on dynamical scattering theory

*Yusuke SETO¹, Masahiro OHTSUKA²

1. Osaka Metropolitan Univ. Sci., 2. Nagoya Univ. IMaSS.

Keywords: Electron diffraction, Transmission electron microscopy, Dynamical scattering theory, HAADF, Computer simulation

Synthesize of potassium silicate mineral fertilizer from drifted pumice

*Haruki Urazoe¹, Hiroaki Ohfuji¹

1. Tohoku University

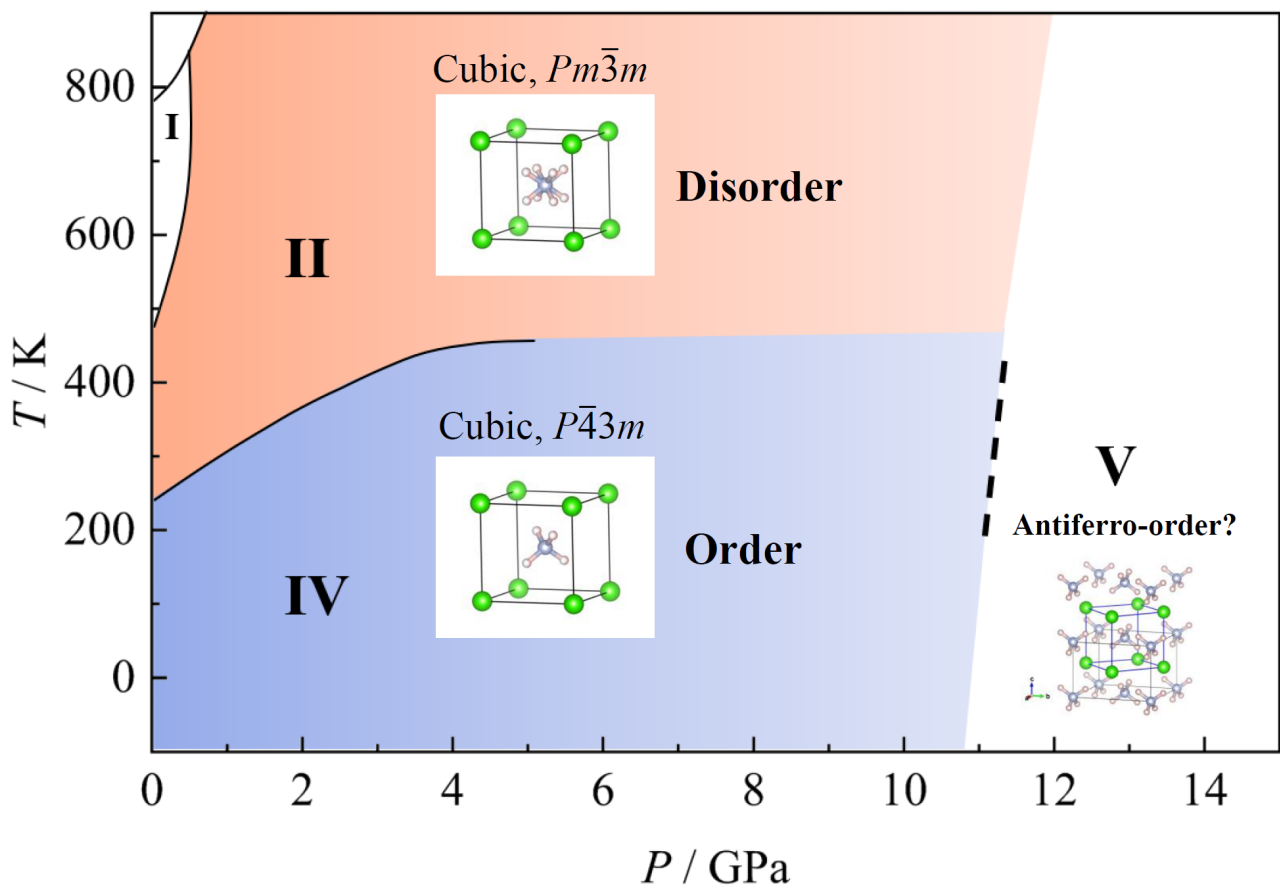
Keywords: drifted pumice, potassium silicate mineral fertilizer, kaliophilite, kalsilite, akermanite

In-situ observation using x-ray diffraction for phase transitions of NH_4Cl under low-temperature or high-pressure

*Kazuki Komatsu¹, Takanori Murakami¹, Satoshi Nakano², Hiroyuki Kagi¹

1. Sci. UTokyo, 2. NIMS

Keywords: NH_4Cl , X-ray diffraction, Low temperature, High pressure



Synthetic of potassium silicate minerals from a weathered granite with alkaline fluxes

*Hiroki Ishida¹, Hiroaki Ohfuji¹

1. Tohoku Univ. Sci.

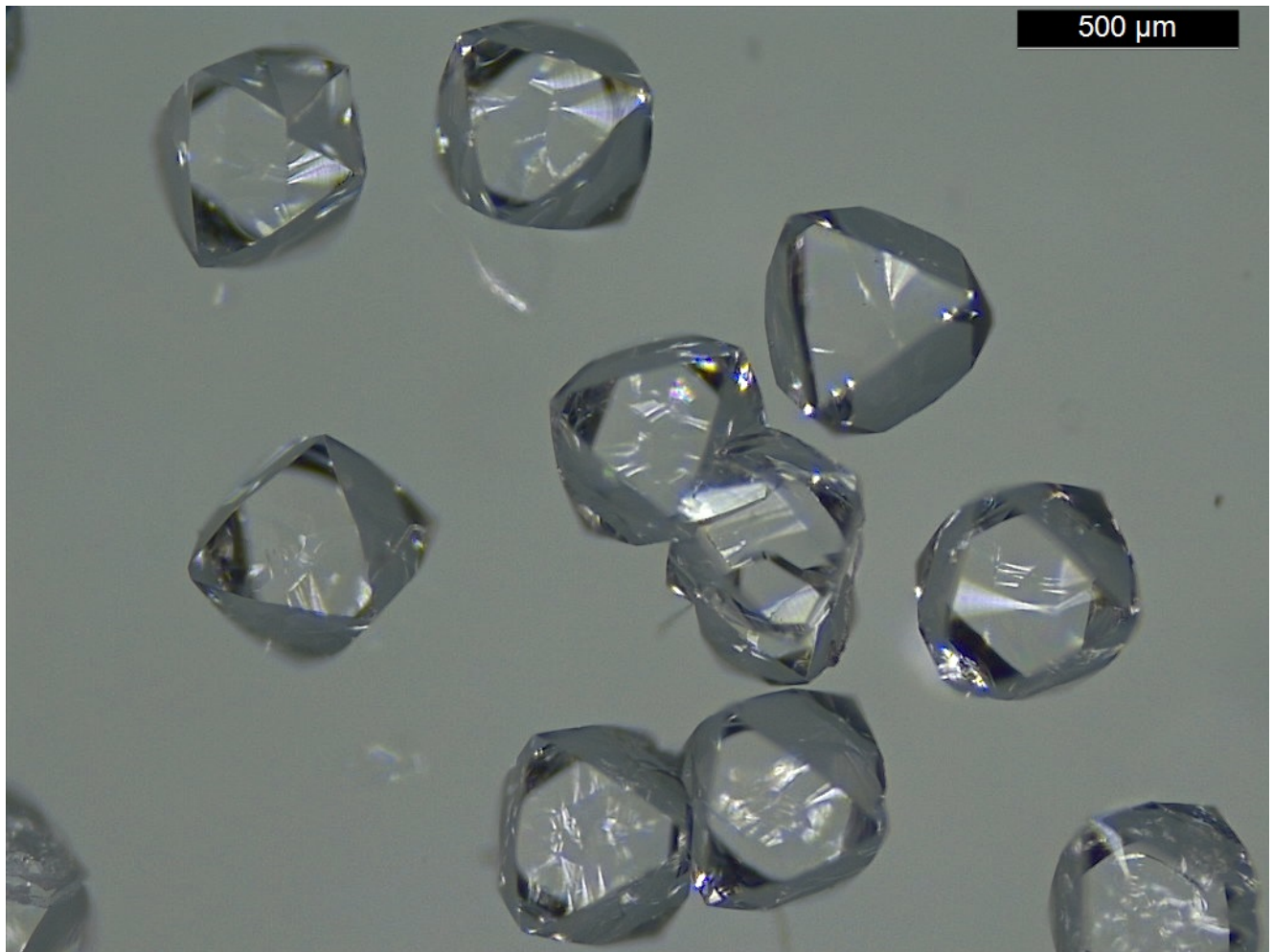
Keywords: weathered granite, potassic silicic fertilizer, kaliophilite, åkermanite

Synthesis and characterization of euhedral silica clathrate with isopropylamine

*Shusuke Isogai¹, Nobuyuki Tamai¹, Yuka Yokoyama¹, Atsushi Tani¹, Yusuke Seto²

1. Kobe Univ. Human Dev. Environ., 2. Osaka Metroplitan Univ. Sci.

Keywords: Silica clathrate, chibaite, synthesis



Searching for clues to the origin of carbonado, an enigmatic polycrystalline diamond through analysis of nano-inclusions

*Wataru Taneya¹, Hiroaki Ohfuji¹

1. Tohoku University

Keywords: Carbonado, microcline, diamond, TEM

Differences in the effects of Na and K on the calcitization of vaterite.

*Noboru FURUKAWA¹, Ami Kinoda¹

1. Chiba University

Keywords: vaterite, calcitization, sodium, potassium

Synthesis and validation of zircon for detection of alpha recoil tracks

*Maki HAMADA¹, Noriko Hasebe²

1. Kanazawa University, 2. Institute of Nature and Environmental Technology, Kanazawa University

Keywords: synthetic zircon, alpha recoil tracks, flux method

Raman spectra for estimation of the Fe³⁺ content in clinozoisite-epidote series

*Mariko NAGASHIMA^{1,2}, Boriana Mihailova²

1. Yamaguchi Univ. Sci., 2. Univ. Hamburg

Providing a tool for fast estimation of the Fe³⁺ content in Ca₂(Al, Fe³⁺)₃Si₃O₁₂(OH)-epidotes Raman spectroscopy was applied to 33 analytical areas from 15 natural specimens with 0.22-1.13 Fe³⁺ atoms per formula unit (apfu). The Raman spectra were collected from the areas where the chemical compositions were independently determined by wavelength-dispersive electron microprobe analysis (WD-EPMA). Both the OH-stretching region (3215–3615 cm⁻¹) and the spectral range generated by the framework vibrations (15–1215 cm⁻¹) have been analyzed. Similar to the IR spectra, the Raman peaks in the OH-stretching region shift toward higher wavenumbers with increasing Fe³⁺ in epidotes. However, the quantification of Fe³⁺ based on OH-stretching Raman peaks should be hindered by the multicomponent overlapping, peak broadening, and significant intensity variations with the crystal orientation. In the framework vibration region, the position of four peaks (near 250, 570, 600, and 1090 cm⁻¹), in particular, linearly varies with increasing Fe³⁺ content. However, the peak near 250 cm⁻¹ attributed to MO₆ vibrations is not always well-resolved due to the orientational dependence. On the other hand, the peaks near 570, 600, and 1090 cm⁻¹ arise from Si₂O₇ vibrational modes and although their intensities also vary with the crystal orientation, all three signals are well resolved in a random orientation. Among the three peaks, the 570 cm⁻¹ peak is the sharpest (peak width < 10 cm⁻¹) and is easily recognized as a separate peak. Thus, we propose to use the position of this peak as a highly reliable parameter to estimate the Fe³⁺ content, via the linear trend given as $w_{570} = 577.1(3) - 12.7(4)x$, where w = wavenumber (cm⁻¹), and x = Fe³⁺ content (apfu), with accuracy ±0.04 Fe³⁺ apfu. The relations determined based on the 600 and 1090 cm⁻¹-peak positions can be used complementarily for Fe³⁺ estimation: $w_{600} = 611.6(2) - 13.8(4)x$ and $w_{1090} = 1098.8(3) - 13.5(5)x$.

Keywords: Raman spectroscopy, Epidote, Clinozoisite, Fe content

Poster presentation | R4: Mineral sciences of the Earth surface

📅 Fri. Sep 15, 2023 12:00 PM - 2:00 PM JST | Fri. Sep 15, 2023 3:00 AM - 5:00 AM UTC | 🏢 83G,H,J
Sugimoto Campus

R4: Mineral sciences of the Earth surface

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R4P-01] Texture observation for the skeletons consisting of aragonite and calcite of culturing scleractinian corals

*Satoko MOTAI¹, Saki Harii², Naotaka Tomioka³, Motoo Ito³ (1. Yamagata University, 2. Univ. of Ryukyus, 3. KOCHI, JAMSTEC)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R4P-02] Formation process of carbonate minerals in nonaqueous solvents

*Naoki Iwane¹, Jun Kawano¹, Ayako Shinozaki¹, Takaya Nagai¹ (1. Hokkaido Univ. Sci)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R4P-03] **Observations of nano-texture for crocidolite asbestos by using an ultra-highly sensitive STEM imaging method.**

Ichiro Ohnishi¹, *Hayato Miura¹ (1. JEOL Ltd.)

Texture observation for the skeletons consisting of aragonite and calcite of culturing scleractinian corals

*Satoko MOTAI¹, Saki Harii², Naotaka Tomioka³, Motoo Ito³

1. Yamagata University, 2. Univ. of Ryukyus, 3. KOCHI, JAMSTEC

Most scleractinian corals inhabit tropical and subtropical oceans with symbiont algae and have exoskeletons composed of calcium carbonate (CaCO_3). The exoskeletons are considered to be aggregates of aragonite grains. However, recently, calcite has been reported as a skeletal component in corals currently inhabiting the Southern Ocean with low temperatures without symbiont algae or in Cretaceous corals that inhabited seas with different chemical compositions. In this study, corals were cultured in conditions where calcite precipitation was induced and the skeletal texture were observed to reveal polymorph selection and calcification process in corals. To form calcite, reef-building coral larvae (*Acropora* sp.) isolated from symbiotic algae were cultured in seawater with a low Mg/Ca molar ratio (<2.0). An optical microscopic observation shows that the skeleton of cultured corals had a typical skeletal structure of reef-building coral with six-fold symmetrical septa and a basalplate. The cross section parallel to the skeletal growth direction was polished. Element mapping on the skeleton by an analytical scanning electron microscope (SEM-EDS) and analysis by a Raman microscope revealed that the Mg-poor region was consisted of aragonite and the Mg-rich region was consisted of calcite. A thin film including both aragonite and calcite regions located at the basalplate and the lower part of the septa was prepared by focused ion beams and observed by transmission electron microscopy (TEM). Elemental mapping by SEM-EDS and Raman analysis showed that calcite was concentrated in the basalplate, and aragonite was distributed in the upper part of the coral skeleton. These results show that the calcification condition changed from the environment in which calcite was likely to precipitate to the environment in which only aragonite precipitated. The TEM observation showed that granular grains with a size of about 100 nm composed the lower part of the basalplate, and granular and needle-like grains with a size of several μm in the lower part of the septa, which is the upper part of the basalplate. The boundary between fine grains and coarse grains does not coincide with the concentration boundary of Mg. Therefore, there is no relationship between grain size and mineral phases.

Keywords: reef-building coral, biomineralization, aragonite, calcite

Formation process of carbonate minerals in nonaqueous solvents

*Naoki Iwane¹, Jun Kawano¹, Ayako Shinozaki¹, Takaya Nagai¹

1. Hokkaido Univ. Sci

Keywords: Carbonate minerals, Hydration, Amorphous calcium carbonate

Observations of nano-texture for crocidolite asbestos by using an ultra-highly sensitive STEM imaging method.

Ichiro Ohnishi¹, *Hayato Miura¹

1. JEOL Ltd.

Keywords: asbestos, crocidolite, scanning transmission electron microscopy, optimum bright-field STEM

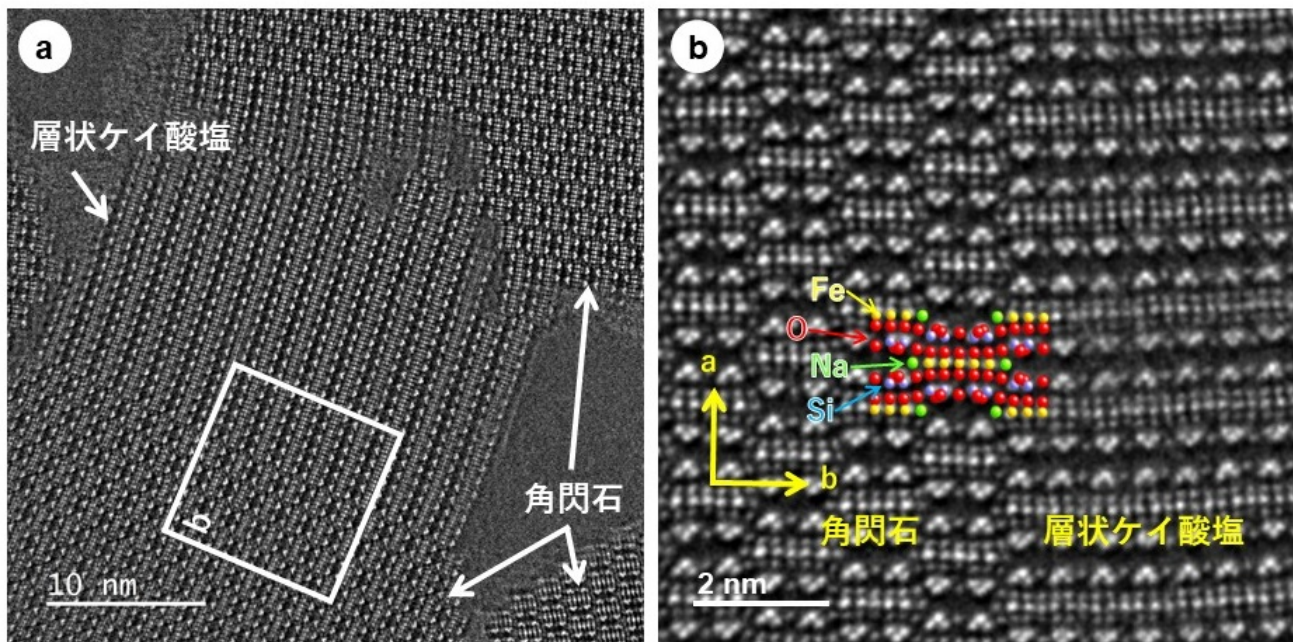


図1(a)クロシドライト石綿中の層状ケイ酸塩OBF-STEM像。
(b)角閃石と層状ケイ酸塩の界面の原子分解能OBF-STEM像

Poster presentation | R7: Petrology, Mineralogy and Economic geology (Joint Session with Society of Resource Geology)

📅 Fri. Sep 15, 2023 12:00 PM - 2:00 PM JST | Fri. Sep 15, 2023 3:00 AM - 5:00 AM UTC | 🏢 83G,H,J Sugimoto Campus

R7: Petrology, Mineralogy and Economic geology (Joint Session with Society of Resource Geology)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-01] Fluorescence spectra and fluorescence lifetime of photoluminescent opal coming from Sikaribetu area

*Toshifumi Iimori¹, Yuna Fujii² (1. Muroran Tech. Eng., 2. Muroran Tech.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-02] The alteration zone and estimation of formation temperature of the deposit in Urukami area, Togi gold silver deposit in Ishikawa Prefecture.

[Presentation award entry]

*Taiju Kawasaki¹, Maki Hamada¹ (1. Kanazawa University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-03] Cr-bearing garnet veins in Yawatahama City, Ehime Prefecture, Japan

*Satomi ENJU¹, Yohei Shirose¹, Yosuke Shimamura (1. Ehime Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-04] Genesis of Lithium Pegmatites from Myokenzan, Ibaraki Prefecture, Japan

[Presentation award entry]

*Takumi Ishizaki¹ (1. Akita Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-05] Stratiform manganese ore deposits in the Kuga group, eastern Yamaguchi Prefecture: The Arasedani and Kuratani mines

[Presentation award entry]

*Yusaku AKIMOTO¹, Mariko NAGASHIMA¹, Masaaki OWADA¹ (1. Yamaguchi Univ. Sci)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-06] Formation of anorthite megacrysts in Oguro lava of Mt. Kayo, Akita Prefecture: Insights from their inclusions

[Presentation award entry]

*Takeyoshi NISHIWAKI¹, Takuya Echigo¹ (1. Akita Univ. IRS.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-07] Formation process of chalcedony at subaqueous volcanism 2 Oga region, Japan

*Natsuko Sano¹, Tsuyoshi Miyamoto², Takahiro Kuribayashi¹, Toshiro Nagase³ (1. Tohoku Univ. Sci., 2. Tohoku Univ. CNEAS, 3. Tohoku Univ. Museum)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-08] The occurrence of feldspar-dominated cristobalite-bearing clast found in a drift pumice of the 2021 eruption of Fukutoku-Oka-no-Ba

*Kenta Yoshida¹, Hikaru Sawada², Yu Maruya³, Wataru Matsuda³ (1. Japan Agency for Marine-Earth Science and Technology (JAMSTEC), 2. University of Toyama, 3. Necono-Wakuwaku Nature School)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-09] Hydration of the mantle and magma genesis in the Izu–Mariana fore-arc region.

*Rion Yamaoka¹, Norikatsu Akizawa¹, Yuji Ichiyama², Akihiro Tamura³, Tomoaki Morishita³ (1. University of Tokyo, 2. Chiba university, 3. Kanazawa university)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-10] Heterogeneity of the uppermost mantle below the Central Graben, Northern Mariana Trough - ReMicrostructural analysis of peridotites from KR02-01 cruse

*Yumiko HARIGANE¹, Akihiro Hasebe Tamura², Ryoko Senda³, Tomoaki Morishita², Hiroyuki Yamashita⁴ (1. Geological Survey of Japan, AIST, 2. Kanazawa University, 3. Kyusyu University, 4. Kanawaga Prefectural Museum of Natural History)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R7P-11] Possible deserpentinized origin of orthopyroxene-rich metaperidotite in the Ray-Iz peridotite massif, Polar Ural

*Satoko ISHIMARU¹, Rie SONODA¹, Makoto MIURA^{2,3}, Vladimir R. SHMELEV⁴, Shoji ARAI³ (1. Kumamoto Univ., 2. GIA, 3. Kanazawa Univ., 4. Zavaritskii Inst. Geol. Geochem., RAS)

Fluorescence spectra and fluorescence lifetime of photoluminescent opal coming from Sikaribetu area

*Toshifumi Imori¹, Yuna Fujii²

1. Muroran Tech. Eng., 2. Muroran Tech.

Keywords: Opal, Hokkaidoite, Fluorescent organic molecules

The alteration zone and estimation of formation temperature of the deposit in Urukami area, Togi gold silver deposit in Ishikawa Prefecture.

*Taiju Kawasaki¹, Maki Hamada¹

1. Kanazawa University

Keywords: Togi gold-silver vein-type deposit, hydrothermal alteration, formation temperature, low-sulfidation type, Se-type

Cr-bearing garnet veins in Yawatahama City, Ehime Prefecture, Japan

*Satomi ENJU¹, Yohei Shirose¹, Yosuke Shimamura

1. Ehime Univ. Sci.

Keywords: Cr-bearing garnet, pyroxenite

Genesis of Lithium Pegmatites from Myokenzan, Ibaraki Prefecture, Japan

*Takumi Ishizaki¹

1. Akita Univ.

Keywords: Myokenzan Li-pegmatite, crystallization differentiation, garnet-biotite geothermometer

Stratiform manganese ore deposits in the Kuga group, eastern Yamaguchi Prefecture: The Arasedani and Kuratani mines

*Yusaku AKIMOTO¹, Mariko NAGASHIMA¹, Masaaki OWADA¹

1. Yamaguchi Univ. Sci

Keywords: Kuga group, manganese deposit

Formation of anorthite megacrysts in Oguro lava of Mt. Kayo, Akita
Prefecture:
Insights from their inclusions

*Takeyoshi NISHIWAKI¹, Takuya Echigo¹

1. Akita Univ. IRS.

Keywords: Anorthite, Mt Kayo, EPMA, Chemical zoning, Crystal growth

Formation process of chalcedony at subaqueous volcanism 2 Oga region, Japan

*Natsuko Sano¹, Tsuyoshi Miyamoto², Takahiro Kuribayashi¹, Toshiro Nagase³

1. Tohoku Univ. Sci., 2. Tohoku Univ. CNEAS, 3. Tohoku Univ. Museum

Keywords: Chalcedony, Subaqueous volcanism, Hyaloclastite, Celadonite

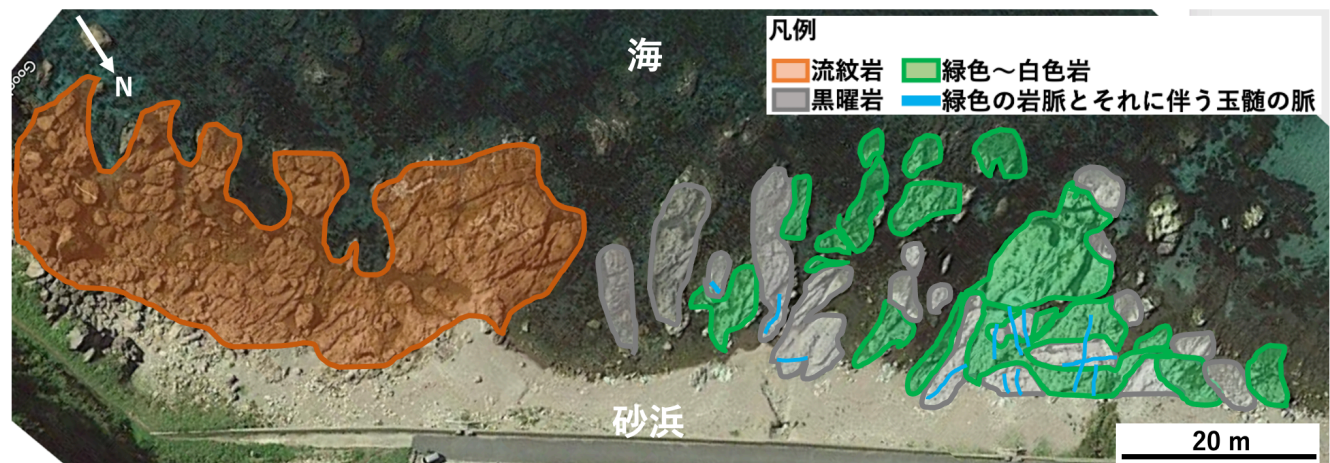


図. 男鹿地域の露頭の全体図

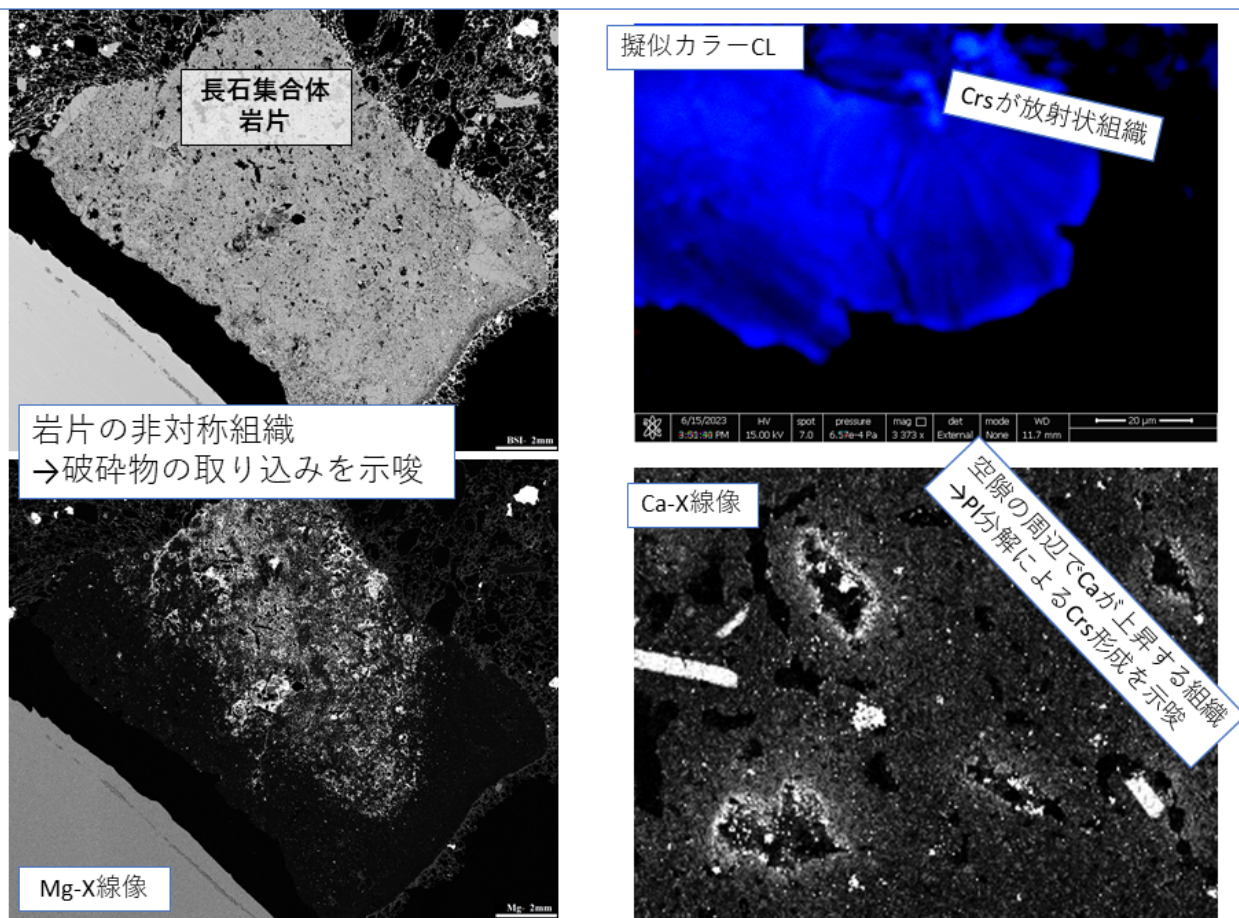
The occurrence of feldspar-dominated cristobalite-bearing clast found in a drift pumice of the 2021 eruption of Fukutoku-Oka-no-Ba

*Kenta Yoshida¹, Hikaru Sawada², Yu Maruya³, Wataru Matsuda³

1. Japan Agency for Marine-Earth Science and Technology (JAMSTEC), 2. University of Toyama, 3. Necono-Wakuwaku Nature School

Keywords: Fukutoku-Oka-no-Ba, Cristobalite, drift pumice

福徳岡ノ場の2021年噴火由来軽石に見られるクリストバライトを含む長石集合体岩片



Hydration of the mantle and magma genesis in the Izu–Mariana fore-arc region.

*Rion Yamaoka¹, Norikatsu Akizawa¹, Yuji Ichiyama², Akihiro Tamura³, Tomoaki Morishita³

1. University of Tokyo, 2. Chiba university, 3. Kanazawa university

Keywords: Subduction zone, hydration, fore-arc magma genesis, peridotite, amphibole

Heterogeneity of the uppermost mantle below the Central Graben, Northern Mariana Trough - ReMicrostructural analysis of peridotites from KR02-01 cruse

*Yumiko HARIGANE¹, Akihiro Hasebe Tamura², Ryoko Senda³, Tomoaki Morishita², Hiroyuki Yamashita⁴

1. Geological Survey of Japan, AIST, 2. Kanazawa University, 3. Kyusyu University, 4. Kanawaga Prefectural Museum of Natural History

Keywords: Peridotite, Backarc basin, Mariana Trough, Mantle heterogeneity, Central Graben

Possible deserpentinized origin of orthopyroxene-rich metaperidotite in the Ray-Iz peridotite massif, Polar Ural

*Satoko ISHIMARU¹, Rie SONODA¹, Makoto MIURA^{2,3}, Vladimir R. SHMELEV⁴, Shoji ARAI³

1. Kumamoto Univ., 2. GIA, 3. Kanazawa Univ., 4. Zavaritskii Inst. Geol. Geochem., RAS

Keywords: Orthopyroxene, Deserpentinization, magnetite inclusion, Ray-Iz peridotite massif

Poster presentation | S1: Dynamics of igneous processes (Special Session)

📅 Sat. Sep 16, 2023 12:00 PM - 2:00 PM JST | Sat. Sep 16, 2023 3:00 AM - 5:00 AM UTC | 🏠 83G,H,J
Sugimoto Campus

S1: Dynamics of igneous processes (Special Session)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S1P-01] Injection of K₂O-rich magma into magma chambers beneath Myoko volcano

*Morihiisa HAMADA¹, Estelle F. ROSE-KOGA², Kenneth T. KOGA², Kenji SHIMIZU¹, Takayuki USHIKUBO¹,
Hideo HARADA³, Andreas AUER⁴, Yoshiaki YAMAGUCHI³ (1. JAMSTEC, 2. ISTO, CNRS-Universite
d'Orleans, 3. Shinshu Univ., 4. Shimane Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[S1P-02] Repressurization of vesiculated magma inferred from volatile distribution in
groundmass glass

*Shumpei YOSHIMURA¹ (1. Hokkaido University)

Injection of K₂O-rich magma into magma chambers beneath Myoko volcano

*Moriyama HAMADA¹, Estelle F. ROSE-KOGA², Kenneth T. KOGA², Kenji SHIMIZU¹, Takayuki USHIKUBO¹, Hideo HARADA³, Andreas AUER⁴, Yoshiaki YAMAGUCHI³

1. JAMSTEC, 2. ISTO, CNRS-Universite d'Orleans, 3. Shinshu Univ., 4. Shimane Univ.

Heterogeneous groundmass bearing higher-K₂O and lower-K₂O domains is often observed in volcanic rocks collected from the rear-arc region. This study characterizes concurrent occurrence of both higher-K₂O and lower-K₂O magmas preserved in quenched melt inclusions collected from Myoko volcano, a rear-arc volcano on the western margin of the northeast Japan arc. While the melt inclusions found in the scoriae from the Sekiyama eruption of Myoko volcano (43 ka) represent the whole-rock composition of Myoko's lower-K₂O volcanic rocks, some melt inclusions found in the scoriae of the Kannoki eruption (41 ka) represent higher-K₂O domains in the groundmass. A possible explanation for such contrastive observations is that the mantle source beneath Myoko volcano is heterogeneous; the higher-K₂O magmas could be generated in a metasomatized mantle wedge, possibly veined by phlogopite and/or apatite-bearing dykes. Another possible explanation is that higher-K₂O magma is a product of partial melting of crustal rocks and its mingling with lower-K₂O magma before the Kannoki eruption. In either case, K₂O-rich magma batches were repeatedly injected into the main magma chambers and formed heterogeneous groundmass bearing higher-K₂O and lower-K₂O domains. Further geochemical studies are warranted to constrain the origin of K₂O-rich magma.

Keywords: Myoko volcano, melt inclusion

Repressurization of vesiculated magma inferred from volatile distribution in groundmass glass

*Shumpei YOSHIMURA¹

1. Hokkaido University

Keywords: magma, vesiculation, repressurization, bubble

Poster presentation | R3: High-pressure science and deep Earth's material

📅 Sat. Sep 16, 2023 12:00 PM - 2:00 PM JST | Sat. Sep 16, 2023 3:00 AM - 5:00 AM UTC | 📍 83G,H,J
Sugimoto Campus

R3: High-pressure science and deep Earth's material

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-01] Carbon isotope analysis of diamond/graphite recovered from high-pressure experiments by NanoSIMS and IRMS

Hideaki Kawamura¹, *Hiroaki OHFUJI¹, Satish-Kumar Satish-Kumar², Kiran Sasidharan², Akizumi Ishida¹, Kouhei Sasaki³, Naoto Takahata³, Kotaro Shirai³, Akio Suzuki¹ (1. Tohoku Univ. Sci, 2. Niigata Univ. Sci., 3. Univ. Tokyo, AORI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-02] Diamond formation at upper mantle of ice giants

Yoshiki Kenmochi¹, *Takeshi SAKAI¹, Hirokazu Kadobayashi² (1. Ehime University, 2. JASRI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-03] Post-antigorite reaction in cold slab

*Tomoaki KUBO¹, Shingo Yoshida¹, Rikuto Honda¹, Yuta Hiramoto¹, Noriyoshi Tsujino², Sho Kakizawa², Yuji Higo² (1. Kyushu University, 2. JASRI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-04] On the low temperature plasticity of metastable olivine

[Presentation award entry]

*Rikuto Honda¹, Tomoaki Kubo¹, Noriyoshi Tsujino², Yuji Higo², Sho Kakizawa², Yuki Shibazaki³, Yu Nishihara⁴ (1. Kyushu Univ., 2. JASRI, 3. KEK, 4. Ehime Univ. GRC)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-05] Deformation property of Wüstite polycrystals developed by large strain deformation experiments under lower mantle pressures using rotational DAC

[Presentation award entry]

*Bunrin Natsui¹, Shintaro Azuma¹, Keishi Okazaki², Kentaro Uesugi³, Masahiro Yasutake³, Saori Kawaguchi³, Ryuichi Nomura⁴, Kenji Ohta¹ (1. Tokyo Tech, 2. Hiroshima Univ., 3. JASRI, 4. Kyoto Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-06] High-temperature conditions for the rotational diamond anvil cell by near-infrared heating method

*Shintaro AZUMA¹, Keishi Okazaki², Kentaro Uesugi³, Masahiro Yasutake³, Bunrin Natsui¹, Eranga Jayawickrama², Ryuichi Nomura⁴ (1. Tokyo Institute of Technology, 2. Hiroshima University, 3. JASRI, 4. Kyoto University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-07] Measurements of local stress and high pressure phase transition of Fe in in-situ TEM indentation experiments

*Akira MIYAKE¹, Yohei Igami¹, Ryuichi nomura¹ (1. Kyoto Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-08] Real-time measurement of DAC specimen length: Direct measurement of back-to-back distance between diamond anvils and elastic deformation analysis of diamond anvils.

*Akira Yoneda¹, Takuto Kato¹ (1. Osaka Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-09] Density measurement of Ni under high pressure and high temperature using laser-heated DAC combined with X-ray absorption method

*Hidenori TERASAKI¹, Hiroyuki KAMINA¹, Ryo TSURUOKA², Tadashi KONDO², Akira YONEDA², Ko MORIOKA¹, Moe SAKURAI¹, Seiji KAMADA³, Saori I KAWAGUCHI⁴ (1. Okayama University, 2. Osaka University, 3. Tohoku University, 4. JASRI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-10] Density measurement of FeS by X-ray absorption method with laser-heated diamond anvil cell

[Presentation award entry]

*Ko Morioka¹, Hidenori Terasaki¹, Hiroyuki Kamina¹, Ryo Tsuruoka², Tadashi Kondo², Akira Yoneda², Moe Sakurai¹, Saori Kawaguchi³ (1. Okayama Univ. Sci., 2. Osaka Univ. Sci., 3. JASRI)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-11] Neutron diffraction measurements and molecular dynamics simulations on FeS hydrides

[Presentation award entry]

*Masahiro Takano¹, Hiroyuki Kagi¹, Yuichiro Mori¹, Katsutoshi Aoki¹, Sho Kakizawa², Asami Sano³, Riko Iizuka⁴, Taku Tsuchiya⁵ (1. The University of Tokyo, 2. JASRI, 3. J-PARC, 4. Waseda University, 5. Ehime University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-12] Melting relations in the system Fe-FeS-FeO at 3 GPa

Kosuke Tsuji¹, *Satoru URAKAWA¹, Hidenori Terasaki¹ (1. Okayama University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R3P-13] Bismuth at high temperature and high pressure

*Shigeaki ONO¹ (1. Japan Agency for Marine-Earth Science and Technology (JAMSTEC))

Carbon isotope analysis of diamond/graphite recovered from high-pressure experiments by NanoSIMS and IRMS

Hideaki Kawamura¹, *Hiroaki OHFUJI¹, Satish-Kumar Satish-Kumar², Kiran Sasidharan², Akizumi Ishida¹, Kouhei Sasaki³, Naoto Takahata³, Kotaro Shirai³, Akio Suzuki¹

1. Tohoku Univ. Sci, 2. Niigata Univ. Sci., 3. Univ. Tokyo, AORI

Keywords: Diamond, C-H-O fluid, NanoSIMS, Carbon isotope

Diamond formation at upper mantle of ice giants

Yoshiki Kenmochi¹, *Takeshi SAKAI¹, Hirokazu Kadobayashi²

1. Ehime University, 2. JASRI

Keywords: Diamond, Ice giants

Post-antigorite reaction in cold slab

*Tomoaki KUBO¹, Shingo Yoshida¹, Rikuto Honda¹, Yuta Hiramoto¹, Noriyoshi Tsujino², Sho Kakizawa², Yuji Higo²

1. Kyushu University, 2. JASRI

Keywords: in-situ X-ray observation, high pressure experiment, dehydration reaction, deep slab

On the low temperature plasticity of metastable olivine

*Rikuto Honda¹, Tomoaki Kubo¹, Noriyoshi Tsujino², Yuji Higo², Sho Kakizawa², Yuki Shibasaki³, Yu Nishihara⁴

1. Kyushu Univ., 2. JASRI, 3. KEK, 4. Ehime Univ. GRC

Keywords: metastable olivine, Peierls mechanism, deep slab rheology, high-pressure deformation experiments, X-ray in-situ observation

Deformation property of Wüstite polycrystals developed by large strain deformation experiments under lower mantle pressures using rotational DAC

*Bunrin Natsui¹, Shintaro Azuma¹, Keishi Okazaki², Kentaro Uesugi³, Masahiro Yasutake³, Saori Kawaguchi³, Ryuichi Nomura⁴, Kenji Ohta¹

1. Tokyo Tech, 2. Hiroshima Univ., 3. JASRI, 4. Kyoto Univ.

Keywords: Rheology, Deformation experiment, Lower mantle, Wüstite

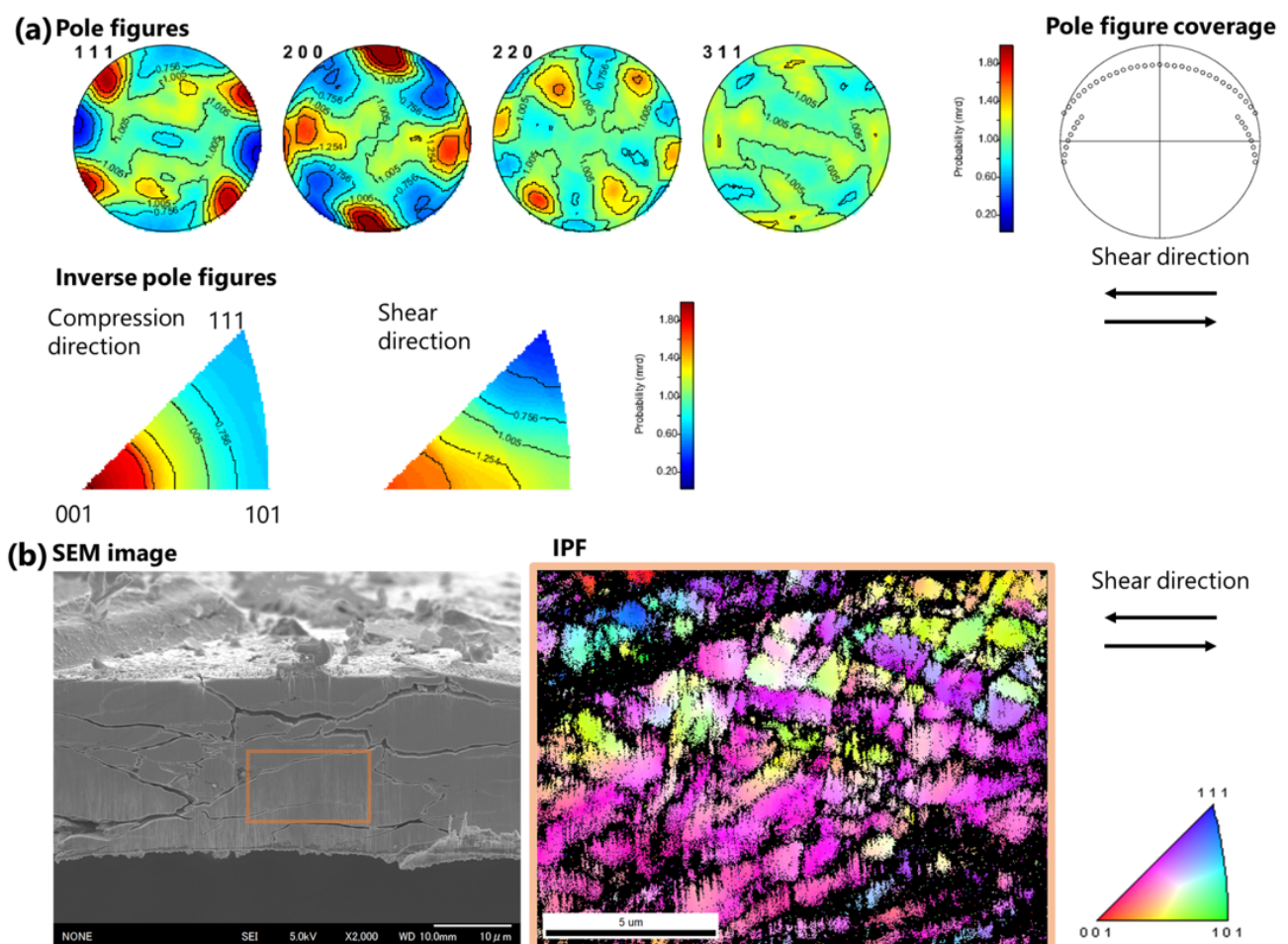


図 結晶方位データ

rDACによるねじり変形実験後のWüstite(結晶構造:B1 $\epsilon = 0.3$ T=600 K P=8 GPa)

(a) XRDデータの解析より得られたCPO

(b) EBSD分析より得られた結晶方位マッピング

High-temperature conditions for the rotational diamond anvil cell by near-infrared heating method

*Shintaro AZUMA¹, Keishi Okazaki², Kentaro Uesugi³, Masahiro Yasutake³, Bunrin Natsui¹, Eranga Jayawickrama², Ryuichi Nomura⁴

1. Tokyo Institute of Technology, 2. Hiroshima University, 3. JASRI, 4. Kyoto University

Keywords: Rotational diamond anvil cell, high temperature and pressure, near-infrared heating method

Measurements of local stress and high pressure phase transition of Fe in in-situ TEM indentation experiments

*Akira MIYAKE¹, Yohei Igami¹, Ryuichi nomura¹

1. Kyoto Univ.

Two types of in-situ experiments in transmission electron microscope were performed. The result of indentation experiment using diamond rod and plate shows the maximum pressure value is over 400 GPa at 1000 uN load. Another in situ high pressure experiment shows the phase transition from alpha phase of Fe (iron) to epsilon phase at 200 uN load. At this load experiment, the pressure was estimated to be about 14 GPa.

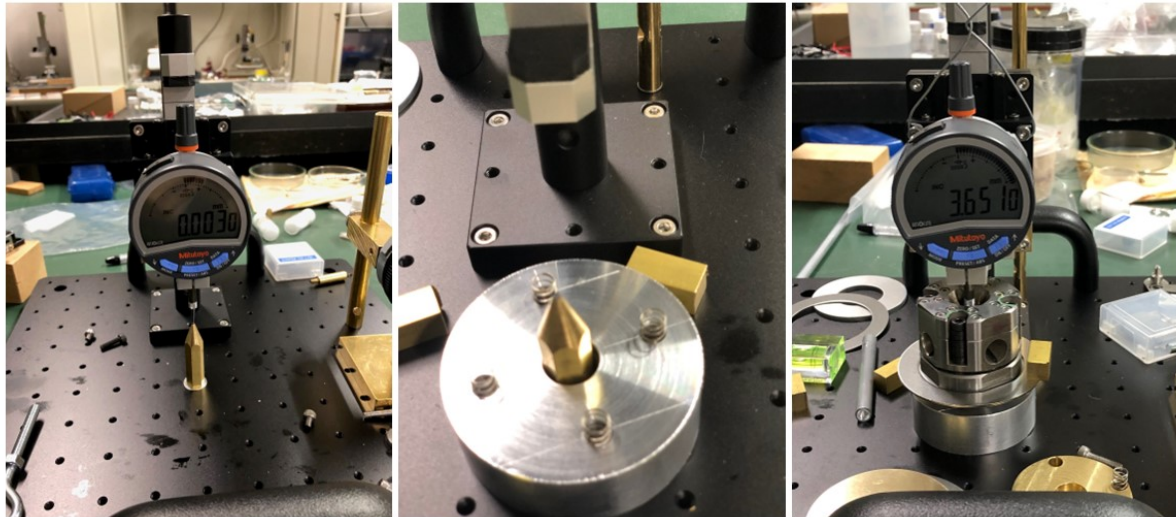
Keywords: TEM, high pressure phase transition, in situ experiment

Real-time measurement of DAC specimen length: Direct measurement of back-to-back distance between diamond anvils and elastic deformation analysis of diamond anvils.

*Akira Yoneda¹, Takuto Kato¹

1. Osaka Univ. Sci.

Keywords: DAC, elastic deformation, Distance measuring instrument, GHz ultrasonics



Density measurement of Ni under high pressure and high temperature using laser-heated DAC combined with X-ray absorption method

*Hidenori TERASAKI¹, Hiroyuki KAMINA¹, Ryo TSURUOKA², Tadashi KONDO², Akira YONEDA², Ko MORIOKA¹, Moe SAKURAI¹, Seiji KAMADA³, Saori I KAWAGUCHI⁴

1. Okayama University, 2. Osaka University, 3. Tohoku University, 4. JASRI

Keywords: Density, Core, X-ray absorption method, High pressure

Density measurement of FeS by X-ray absorption method with laser-heated diamond anvil cell

*Ko Morioka¹, Hidenori Terasaki¹, Hiroyuki Kamina¹, Ryo Tsuruoka², Tadashi Kondo², Akira Yoneda², Moe Sakurai¹, Saori Kawaguchi³

1. Okayama Univ. Sci., 2. Osaka Univ. Sci., 3. JASRI

Keywords: Density, Core, Diamond anvil cell, High pressure

Neutron diffraction measurements and molecular dynamics simulations on FeS hydrides

*Masahiro Takano¹, Hiroyuki Kagi¹, Yuichiro Mori¹, Katsutoshi Aoki¹, Sho Kakizawa², Asami Sano³, Riko Iizuka⁴, Taku Tsuchiya⁵

1. The University of Tokyo, 2. JASRI, 3. J-PARC, 4. Waseda University, 5. Ehime University

Keywords: FeS, hydrogen, neutron diffraction, high-pressure experiments, molecular dynamics

Melting relations in the system Fe-FeS-FeO at 3 GPa

Kosuke Tsuji¹, *Satoru URAKAWA¹, Hidenori Terasaki¹

1. Okayama University

Keywords: Core, Light elements

Bismuth at high temperature and high pressure

*Shigeaki ONO¹

1. Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

We investigated the phase diagram in bismuth at high pressures and high temperatures using the multi-anvil press and the synchrotron X-ray diffraction technique. The stability of each phase was identified by observing the powdered X-ray diffraction data. The phase diagram determined in our study was in general agreement with that reported in previous high-pressure experiments. However, discrepancies related with triple points were identified between present and previous studies.

Keywords: Bismuth

Poster presentation | R5: Extraterrestrial materials

📅 Sat. Sep 16, 2023 12:00 PM - 2:00 PM JST | Sat. Sep 16, 2023 3:00 AM - 5:00 AM UTC | 🏢 83G,H,J
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R5: Extraterrestrial materials

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R5P-01] Structural Evolution of Dynamically-compressed Germanium Dioxide

*Hiroto Araga^{1,2}, Yuhei Umeda^{1,2}, Takamichi Kobayashi³, Hitoshi Yusa³, Yusuke Seto⁴, Takuo Okuchi^{1,2} (1. Kyoto Univ. Eng., 2. KURNS Kyoto Univ., 3. NIMS, 4. Osaka Metropolitan Univ. Sci.)

Structural Evolution of Dynamically-compressed Germanium Dioxide

*Hiroto Araga^{1,2}, Yuhei Umeda^{1,2}, Takamichi Kobayashi³, Hitoshi Yusa³, Yusuke Seto⁴, Takuo Okuchi^{1,2}

1. Kyoto Univ. Eng., 2. KURNS Kyoto Univ., 3. NIMS, 4. Osaka Metropolitan Univ. Sci.

Keywords: GeO₂, Shock compression, amorphous, powder XRD diffraction

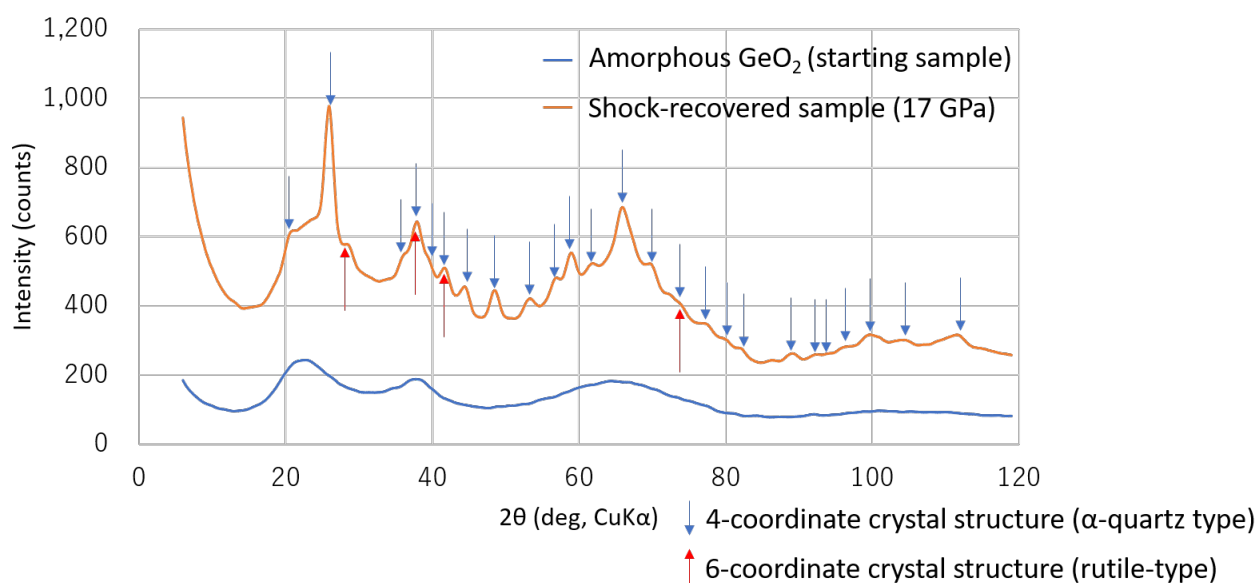


Fig.1 Powder XRD diffraction patterns of the shock-recovered sample and an amorphous GeO₂ before compression.

Poster presentation | R6: Plutonic rocks, volcanic rocks and subduction factory

📅 Sat. Sep 16, 2023 12:00 PM - 2:00 PM JST | Sat. Sep 16, 2023 3:00 AM - 5:00 AM UTC | 📍 83G,H,J
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R6: Plutonic rocks, volcanic rocks and subduction factory

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-01] Compositional changes in closed and open systems of igneous rocks from northern part of Mt. Shaku-dake, northern Kyushu, SW Japan

*Keisuke ESHIMA¹ (1. Yamaguchi Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-02] Formation of upper-most crust in volcanic belt: Example for Cretaceous volcano-plutonic complex, Hyogo Prefecture, southwest Japan

*Masaaki OWADA¹, Shunsuke Fukuda¹, Atsushi Kamei² (1. Yamaguchi University, 2. Shimane University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-03] **Intrusion and emplacement processes of adakitic magma into the shallow crust: A case study of the Sakainokami plutonic body, Kitakami mountains, northeast Japan**

[Presentation award entry]

*Satoshi SUZUKI¹, Nobuo ASAI¹, Kazuo NAKASHIMA¹, Yasuhiro OGITA², Tatsunori YOKOYAMA², Shuhei SAKATA³, Takeshi OHNO⁴, Takashi YUGUCHI⁵ (1. Yamagata Univ., 2. Japan Atomic Energy Agency, 3. Univ of Tokyo. , 4. Gakushuin Univ. , 5. Kumamoto Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-04] Identification of multiple components of noble gas isotopes in back-arc lithospheric mantle

*Lena Yokokura¹, Hirochika Sumino¹, Takeshi Kuritani², Yuuki Hagiwara³, Junji Yamamoto⁴ (1. The University of Tokyo, 2. Hokkaido University, 3. JAMSTEC, 4. Kyushu University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-05] Three-dimensional evaluation of internal structures contributing to mass transport distributed in minerals: micropores in K-feldspar in the Toki granite, central Japan.

*Mai Nonaka^{1,2}, Takashi Yuguchi³ (1. Yamagata University, 2. Japan Atomic Energy Agency, 3. Kumamoto University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-06] Magma source and evolution process for Quaternary Magmas from Kuju Volcanoes, Kyushu Island, Southwest Japan Arc.

*Soma Yamanaka¹, Tomoyuki Shibata³, Ryotaro Fujihara¹, Tatsuki Orito¹, Taichi Heijima¹, Masako Yoshikawa³, Tomo Shibata² (1. Hiroshima Univ. Sci., 2. Fukuoka Univ. Sci., 3. Hiroshima Univ. Sci. & Tech.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-07] Geochemical features of the Early Miocene Hachiya Formation in the Chuno Area, Gifu Prefecture, Japan

[Presentation award entry]

*Seiya Saijou¹, Toshiro Takahashi² (1. Niigata Univ. Sci., 2. Niigata Univ)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-09] Cathodoluminescence pattern of quartz and quantitative determination of titanium and aluminum concentration within quartz crystals in the Tono plutonic complex, Kitakami

mountains

*Yasuhiro OGITA^{1,2}, Takenri KATO³, Takashi YUGUCHI⁴ (1. Yamagata Univ., 2. JAEA, 3. Nagoya Univ., 4. Kumamoto Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-10] Cathodoluminescence patterns of quartz crystals in granite and their titanium concentrations: implication to crystallization process of quartz in the magma chamber

*Asuka Kato¹, Takenori Kato², Yasuhiro Ogita^{1,3}, Takashi Yuguchi⁴, Eiji Sasao³ (1. Yamagata Univ. , 2. Nagoya Univ, 3. JAEA, 4. Kumamoto Univ)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R6P-11] Petrography and Rb-Sr mineral age of mafic dyke rocks on Niban-Rock, Lützow-Holm Complex (LHC), East Antarctica.

*Tomoharu MIYAMOTO¹, Yamashita Katsuyuki², Daniel J. Dunkley³, Toshiaki Tsunogae⁴, Mutsumi Kato⁵ (1. Kyushu University, 2. Okayama University, 3. Polish Academy of Sciences, 4. Univ. of Tsukuba, 5. Chiba University)

Compositional changes in closed and open systems of igneous rocks from northern part of Mt. Shaku-dake, northern Kyushu, SW Japan

*Keisuke ESHIMA¹

1. Yamaguchi Univ.

Recently, diorite (HMD) with high Mg andesite (HMA) compositions have been reported from Cretaceous mafic rocks in northern Kyushu. Examples include the Kunisaki Peninsula, Kita-taku (Kamei et al., 2004), Mt. Shaku-dake and Mt. Ushikiri-yama areas (Eshima et al., 2020; Eshima, 2021; Eshima and Owada, 2023). These mantle-derived mafic magmas are considered to be strongly involved in the genesis of granitic magmas as parent magmas and heat sources for crustal melting (Reid et al., 1983), and are very important rocks for a comprehensive understanding of the magmatic relationships of the Cretaceous Northern Kyushu batholith and the growth process of the granitic crust. On the other hand, it is very important to examine the geological and petrological relationship between the HMA (HMD) and the surrounding rocks that were active at the same time to elucidate the origin of the HMA magma and its maturation process (including tectonics). Such an examination will expand our understanding of igneous activity with HMA activity to a comprehensive understanding that includes volcanic-plutonic activity and geological time scales. In this presentation, I discuss the compositional changes of igneous rocks including porphyritic rocks in the northern part of Mt. Shaku-dake area, Mt. Shaku-dake body is as known as the largest HMD body in northern Kyushu, in closed and open systems, and discuss the plutonism of the Cretaceous igneous activity in the early stage of the Cretaceous Northern Kyushu batholith.

Keywords: Cretaceous Northern Kyushu Batholith, Porphyry, Mixing, Hydrothermal alteration

Formation of upper-most crust in volcanic belt: Example for Cretaceous volcano–plutonic complex, Hyogo Prefecture, southwest Japan

*Masaaki OWADA¹, Shunsuke Fukuda¹, Atsushi Kamei²

1. Yamaguchi University, 2. Shimane University

A volcano–plutonic complex is an important magmatic body to understand for the formation of upper-most crustal processes in terms of its magmatic histories, geochronology, and geochemical investigations along volcanic belts. There are many volcano–plutonic complexes during the Cretaceous and Paleocene Tertiary in the southwest Japan. Cretaceous Volcanic tuff and welded tuff layers with 74 Ma by zircon Fission Track dating are underlain by Himeji City and Kakogawa City, Hyogo Prefecture, and are intruded by the Ohfuji-yama granodiorite (biotite K–Ar age, 77 Ma), andesitic dike, and quartz diorite dike. All intrusive rocks geochemically show tholeiitic compositions. Considering constituent rock types with their geochemical signatures, the volcano–plutonic complex in this area was situated in the volcanic front and formed an upper-most crust during the Late Cretaceous.

Keywords: Late Cretaceous, Volcano-plutonic complex, volcanic front, Tholeiitic series

Intrusion and emplacement processes of adakitic magma into the shallow crust: A case study of the Sakainokami plutonic body, Kitakami mountains, northeast Japan

*Satoshi SUZUKI¹, Nobuo ASAI¹, Kazuo NAKASHIMA¹, Yasuhiro OGITA², Tatsunori YOKOYAMA², Shuhei SAKATA³, Takeshi OHNO⁴, Takashi YUGUCHI⁵

1. Yamagata Univ., 2. Japan Atomic Energy Agency, 3. Univ of Tokyo. , 4. Gakushuin Univ. , 5. Kumamoto Univ.

Keywords: flare-up, (non) adakitic magma, spatial petrographical characteristics , P-T history, t-T history

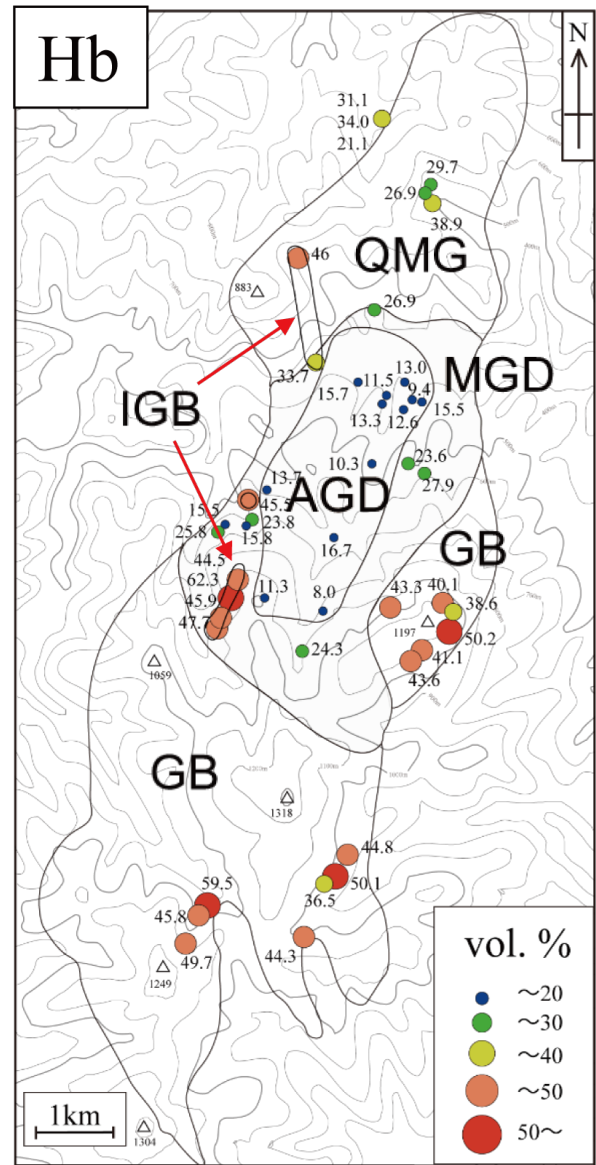
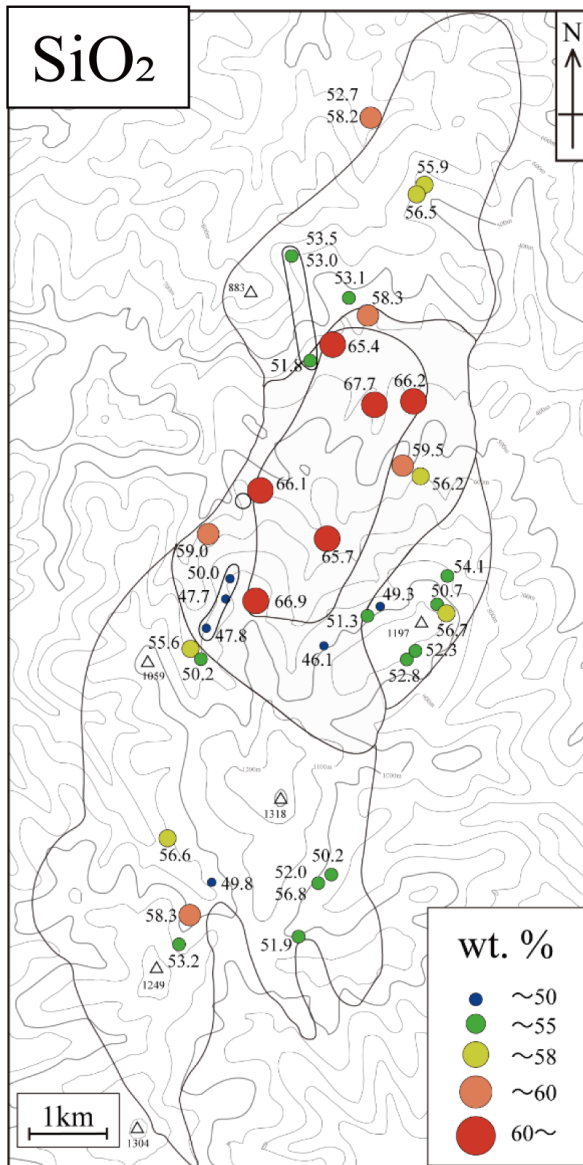


図1 堺ノ神岩体の全岩化学組成，モードによる空間的岩石学的特徴（左：全岩化学組成の SiO₂，右：ホルンブレンドのモード）

IGB	Intrusive gabbro
AGD	Adakitic biotite hornblende granodiorite
MGD	Biotite hornblende granodiorite
QMG	Biotite hornblende quartz monzodiorite - granodiorite
GB	Biotite two-pyroxene hornblende quartz gabbro

Identification of multiple components of noble gas isotopes in back-arc lithospheric mantle

*Lena Yokokura¹, Hirochika Sumino¹, Takeshi Kuritani², Yuuki Hagiwara³, Junji Yamamoto⁴

1. The University of Tokyo, 2. Hokkaido University, 3. JAMSTEC, 4. Kyushu University

Keywords: Mantle xenolith, Fluid inclusions

Three-dimensional evaluation of internal structures contributing to mass transport distributed in minerals: micropores in K-feldspar in the Toki granite, central Japan.

*Mai Nonaka^{1,2}, Takashi Yuguchi³

1. Yamagata University, 2. Japan Atomic Energy Agency, 3. Kumamoto University

Keywords: Micropore, K-feldspar, mass transfer, Three-dimensional evaluation, Toki granite

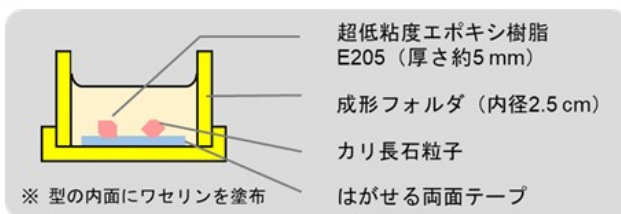


図1 作成試料の概念図

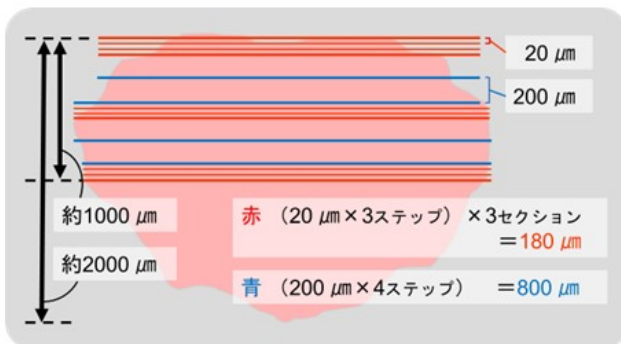


図2 試料研磨の概念図

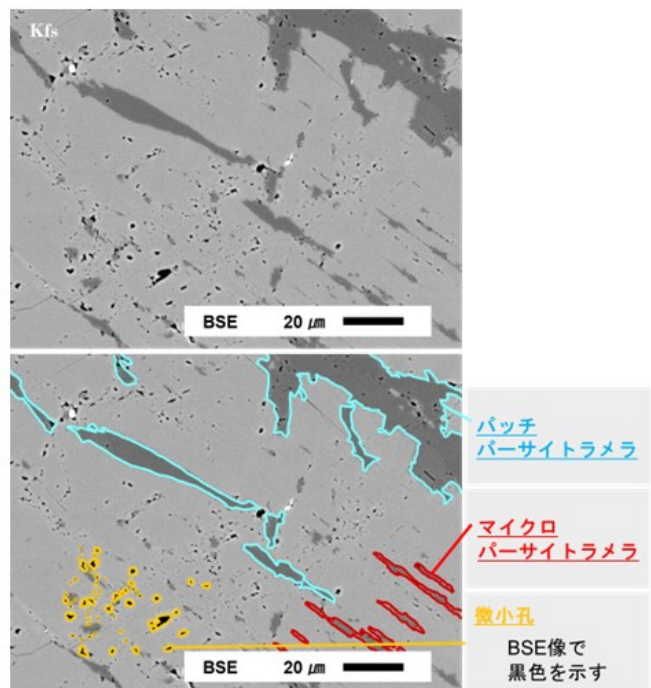


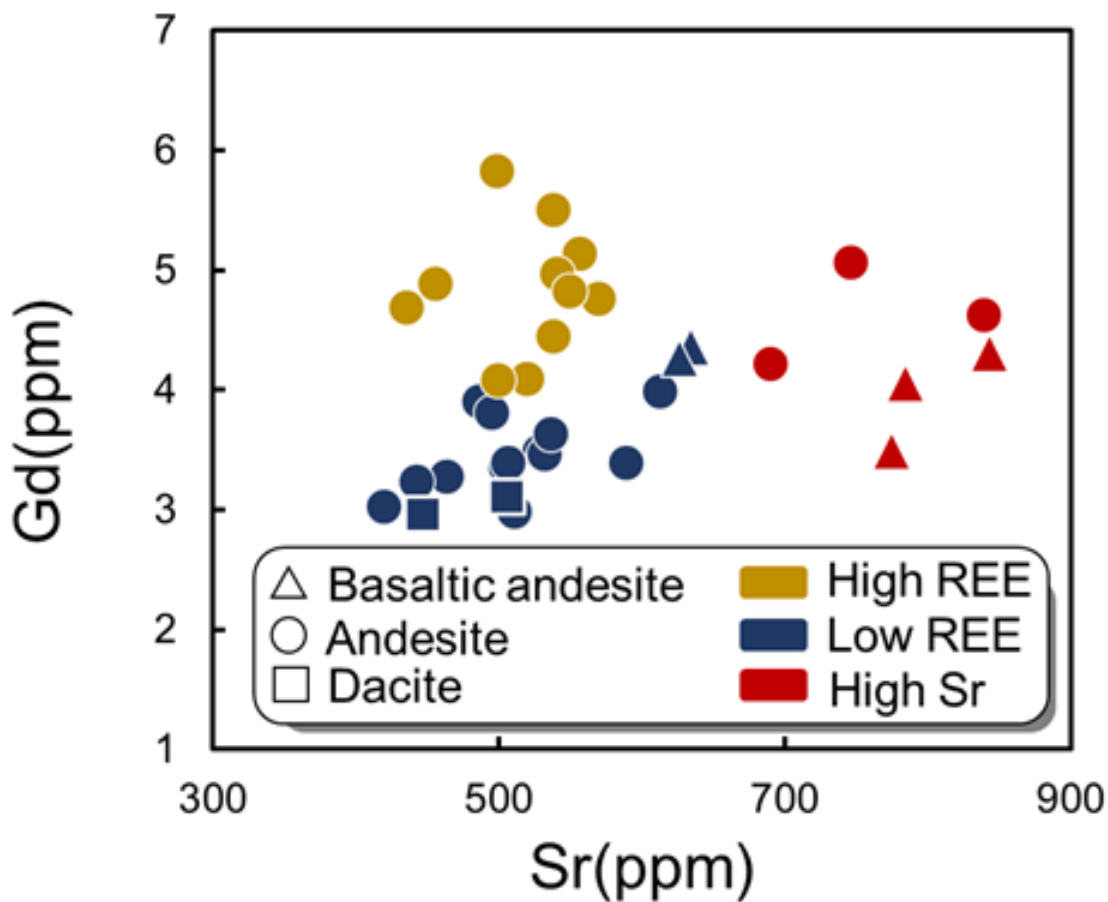
図3 SEM-CLで画像取得したカリ長石の内部構造 (BSE像)

Magma source and evolution process for Quaternary Magmas from Kuju Volcanoes, Kyushu Island, Southwest Japan Arc.

*Soma Yamanaka¹, Tomoyuki Shibata³, Ryotaro Fujihara¹, Tatsuki Orito¹, Taichi Heijima¹, Masako Yoshikawa³, Tomo Shibata²

1. Hiroshima Univ. Sci., 2. Fukuoka Univ. Sci., 3. Hiroshima Univ. Sci. & Tech.

Keywords: island arc, trace elements, Sr-Nd-Pb isotope, magma mixing, fractional crystallization



Geochemical features of the Early Miocene Hachiya Formation in the Chuno Area, Gifu Prefecture, Japan

*Seiya Saijou¹, Toshiro Takahashi²

1. Niigata Univ. Sci., 2. Niigata Univ

The Hachiya Formation in Chuno area, Gifu Prefecture, is composed of pyroclastic rocks of the Early Miocene, is seen on the front arc side of the volcanic front at that time. However, detailed Geochemical studies of this have not been done. We studied this to understand the igneous activity in southwest Japan at that time. This shows that this formation may have originated in slab melts that reacted with the mantle, continental lithospheres.

Keywords: Hachiya Formation, adakite, slab melting

Cathodoluminescence pattern of quartz and quantitative determination of titanium and aluminum concentration within quartz crystals in the Tono plutonic complex, Kitakami mountains

*Yasuhiro OGITA^{1,2}, Takenri KATO³, Takashi YUGUCHI⁴

1. Yamagata Univ., 2. JAEA, 3. Nagoya Univ., 4. Kumamoto Univ.

Keywords: Quartz, cathodoluminescence pattern, titanium concentration, aluminum concentration, Tono plutonic complex

Cathodoluminescence patterns of quartz crystals in granite and their titanium concentrations: implication to crystallization process of quartz in the magma chamber

*Asuka Kato¹, Takenori Kato², Yasuhiro Ogita^{1,3}, Takashi Yuguchi⁴, Eiji Sasao³

1. Yamagata Univ. , 2. Nagoya Univ, 3. JAEA, 4. Kumamoto Univ

Keywords: Quartz, Cathodoluminescence, EPMA, Titanium cocentration, TitaniQ thermometry

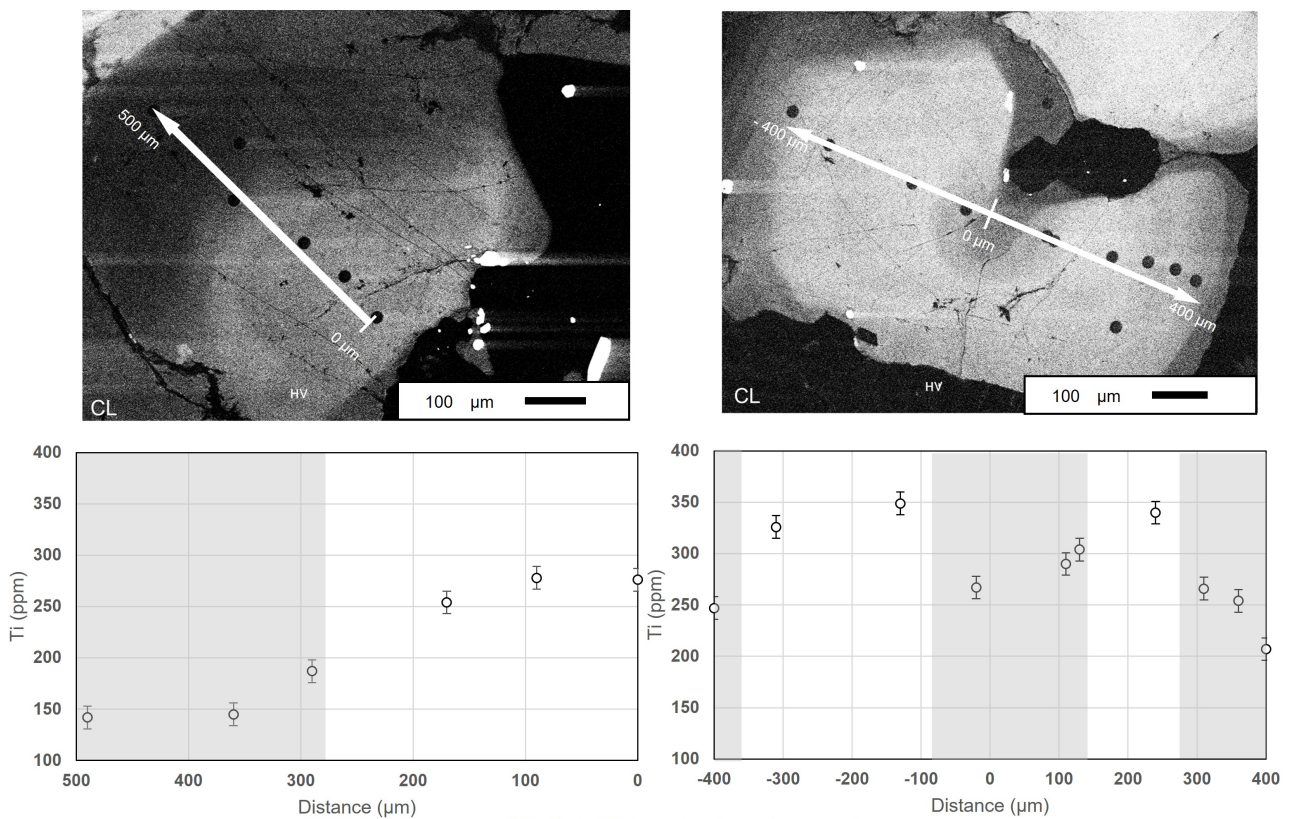


図1 得られたTi濃度のラインプロファイル

Petrography and Rb-Sr mineral age of mafic dyke rocks on Niban-Rock, Lützow-Holm Complex (LHC), East Antarctica.

*Tomoharu MIYAMOTO¹, Yamashita Katsuyuki², Daniel J. Dunkley³, Toshiaki Tsunogae⁴, Mutsumi Kato⁵

1. Kyushu University, 2. Okayama University, 3. Polish Academy of Sciences, 4. Univ. of Tsukuba, 5. Chiba University

Niban Rock is a 2.5 km × 3.5 km exposure located at northeast LHC and is corresponded into the amphibolite-facies zone. Niban Rock is composed of Niban-higashi Rock and Niban-nishi Rock, and is underlain mainly by sillimanite-garnet-biotite gneiss, biotite gneiss, and biotite-hornblende gneiss along with minor metabasite, calc-silicate gneiss, granite, and aplite. Although the intrusive rocks were less voluminous than the widespread metamorphic rocks, the emplacement of the mafic dyke which cut metamorphic textures and structures was recognized in the Niban-higashi Rock. The mafic dyke was a few tens cm width intrusive to 10 m length at least, oriented mostly to the WNW-ESE direction, and cut sharply through the foliation of the surrounding host gneisses. The dyke does not exhibit textures resembling the major metamorphic structures found in the surrounding basement rocks. The boundary between the dyke and surrounding host gneisses had no reactive textures. The mafic dyke rocks are commonly holocrystalline and aphyric. They consisted mainly of alkali feldspar, plagioclase, biotite, hornblende, quartz, apatite, and titanite. The crystals often grow in parallel arrays in the intrusive direction of the dyke. The mafic dyke rocks have alkalic compositions, and enriched to incompatible elements. For chronological research, the mafic fractions and felsic fractions were separated from crushed mafic rock samples. Their $^{87}\text{Rb}/^{86}\text{Sr}$ and $^{87}\text{Sr}/^{86}\text{Sr}$ values are aligned on the isochron diagram, and the age showed 500.9 ± 0.2 Ma and $IR = 0.704665 \pm 0.000016$. Occurrence of the mafic dykes at Niban-Rock suggest the presence and timing of mantle-involved igneous activity after major metamorphism at the NE LHC.

Keywords: Lützow-Holm Complex, Mafic dyke, Intrusion of after peak metamorphism

Poster presentation | R8: Metamorphic rocks and tectonics

📅 Sat. Sep 16, 2023 12:00 PM - 2:00 PM JST | Sat. Sep 16, 2023 3:00 AM - 5:00 AM UTC | 📍 83G,H,J
Sugimoto Campus

R8: Metamorphic rocks and tectonics

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-01] Structural and petrological study of layering in the Horoman Peridotite Complex, Hokkaido, Japan

[\[Presentation award entry\]](#)

*Aya Hihara¹, Miki Tasaka¹, Keisuke Kurihara¹, Tatsuhiko Kawamoto¹, Hajime Taniuchi² (1. Shizuoka University, 2. National Institute of Advanced Industrial Science and Technology)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-02] Geology and petrography of metamorphic rocks in Sibuyan Island, Romblon, Philippines

[\[Presentation award entry\]](#)

*John Kenneth Badillo¹, Gabriel Theophilus Valera¹, Betchaida Payot¹ (1. University of the Philippines Diliman)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-03] **The metamorphic condition of the Oshima peninsula, in the southern part of Yamaguchi prefecture: Implications for metamorphic process and regional structure of the Ryoke metamorphic belt, west Seto Inland sea area**

[\[Presentation award entry\]](#)

*Zejin LU¹, Masaaki Owada¹ (1. Yamaguchi University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-04] Study of flexural slip formed by plate subduction

[\[Presentation award entry\]](#)

*Haruki Yoshiasa¹, Jun-ichi ANDO², SARKAR Dyuti Prakash², DAS Kaushik², GHOSH Gautam³ (1. Hiroshima Univ. , 2. Hiroshima Univ., 3. Presidency Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-05] Electron diffuse scattering in omphacite from lawsonite eclogite xenolith in Colorado Plateau: A preliminary report

[\[Presentation award entry\]](#)

*Ryo Fukushima¹, Tatsuki Tsujimori^{1,2}, Nobuyoshi Miyajima³, Tiziana Boffa-Ballaran³, Giacomo Criniti³, Catherine McCammon³ (1. Tohoku Univ. Sci., 2. CNEAS, Tohoku Univ., 3. BGI, Univ. Bayreuth)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-06] **Exhumation process of serpentinite in the Sangun-Renge belt exposed at Sasaguri, Fukuoka prefecture**

[\[Presentation award entry\]](#)

*Swarnaa ANNADURAI MUNUSAMY¹, Jun-ichi ANDO^{1,2}, Yuki IWASAKI³, Dyuti Prakash SARKAR^{1,2}, Kaushik DAS^{1,2}, Seiichiro UEHARA⁴ (1. Hiroshima Univ., 2. HiPeR, Hiroshima, 3. NIPPON STEEL CORP., 4. The Kyushu Univ. Museum)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-07] Mineral and bulk compositions of an outcrop showing a symmetric sequence composed of peridotite and mafic-rock layers of Horoman peridotite, Japan

[\[Presentation award entry\]](#)

*Keisuke Kurihara¹, Tatsuhiko Kawamoto¹, Aya Hihara¹, Miki Tasaka¹, Hajime Taniuchi², Takeshi Kuritani³, Akiko Matsumoto³ (1. Shizuoka Univ., 2. AIST, 3. Hokkaido Univ.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-08] Mechanism of seismic fault generation involving in pseudotachylyte formation in ductile regime: examples from Sarwar-Junia Fault Zone, India

[Presentation award entry]

*Junya OKAZAKI¹, Jun-ichi Ando¹, Kaushik Das¹ (1. Hiroshima University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-09] Water content distributions in dynamically recrystallized quartz grains in granitoid mylonites: A case of an inner shear zone in the Ryoke Belt in the Kishiwada area, Osaka

*Takemasa Norimura¹, Junichi Fukuda¹ (1. Osaka Metrop. Univ. Geosci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-10] **Deformation microstructures and slip systems developed in olivine from the Petit-spot peridotite xenoliths: Insights on deformation mechanisms and anisotropy of upper mantle**

*Dyuti Prakash SARKAR^{1,2}, Norikatsu Akizawa³, Jun-ichi Ando^{1,2}, Masako Yoshikawa^{1,2} (1. Hiroshima University, 2. HiPeR, 3. The University of Tokyo)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-11] Novel automated method for estimating the peak temperature from the crystallinity of carbonaceous material using EM algorithm

*Yoshihiro NAKAMURA¹, Tarojiro MATSUMURA¹, Kazuhiro MIYAZAKI¹ (1. AIST)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-12] Zircon U-Pb ages of the Oura igneous complex, northern Kyoto area, SW Japan and its tectonic correlation

*Kosuke KIMURA¹, Kenta Kawaguchi², Nobuhiko Nakano², Tatsuro Adachi², Kaushik Das³ (1. Osaka Metropolitan Univ. Sci., 2. Kyushu Univ. , 3. Hiroshima Univ. Sci.)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-13] Metasomatic syenite at the interface between charnockite and calc-silicate granulite, Eastern Ghats Belt, India: Mineral-chemical characterization and its implications during orogenesis

*Kaushik DAS^{1,4}, Proloy Ganguly², Sankar Bose^{3,4} (1. Hiroshima University, 2. Durgapur Government College, Department of Geology, Durgapur, India, 3. Presidency University, Kolkata, India, 4. HiPeR, Hiroshima)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-14] Petrography of V and Zn-rich gahnite-sillimanite-muscovite gneiss from Menipa, Sør Rondane Mountains, East Antarctica

*Tatsuro ADACHI¹, Tetsuo Kawakami², Fumiko Higashino², Masaoki Uno³ (1. Kyushu University, 2. Kyoto University, 3. Tohoku University)

12:00 PM - 2:00 PM JST | 3:00 AM - 5:00 AM UTC

[R8P-15] Unraveling the Link Between Deformation, Metamorphism, and Fluid Flow in the Archean Dharwar Craton, Southern India

*Sreehari LAKSHMANAN¹, Kiran Sasidharan², Satish-Kumar Madusoodhan², Tsuyoshi Toyoshima² (1. Shimane Uni., 2. Niigata Uni.)

Structural and petrological study of layering in the Horoman Peridotite Complex, Hokkaido, Japan

*Aya Hihara¹, Miki Tasaka¹, Keisuke Kurihara¹, Tatsuhiko Kawamoto¹, Hajime Taniuchi²

1. Shizuoka University, 2. National Institute of Advanced Industrial Science and Technology

Keywords: mantle, peridotite, Horoman Peridotite, deformation, crystallographic preferred orientation

Geology and petrography of metamorphic rocks in Sibuyan Island, Romblon, Philippines

*John Kenneth Badillo¹, Gabriel Theophilus Valera¹, Betchaida Payot¹

1. University of the Philippines Diliman

Metamorphic rocks have been identified on Tablas, Romblon, and Sibuyan in the Romblon Island Group (RIG), Philippines. Collectively termed Romblon Metamorphics, these consist primarily of schists and phyllites, which are attributed by earlier works to the collision of the Palawan Microcontinental Block (PCB) and the Philippine Mobile Belt (PMB). In this work, we present new field and petrological data from metamorphic rocks exposed in Sibuyan Island to provide new insights into their petrogenesis and the *P-T-D* conditions that they preserve.

Phyllite outcrops of alternating quartz-rich (psammitic) and biotite-rich (pelitic) rocks are observed in northern Sibuyan island. The foliation direction of these interlayers generally dip in the southeast direction. Schist exposures on the other hand are more predominant in eastern and southwestern Sibuyan. They are also comprised of alternating dark- and light-colored layers suggesting similar protolith to the phyllites but with distinct peak metamorphic conditions. One outcrop documented near the coast in Barangay Mabini shows dark-colored schists with white prismatic feldspar porphyroblasts. This rock type dominates the exposure and is cut by dioritic leucocratic dikes that are often subparallel to the foliation of the schists.

Initial petrographic analysis of the metapelite schist and dike samples from Mabini revealed similar mineral assemblage of quartz(Qz)-feldspar(Afs)-biotite(Bt)-muscovite(Ms)-chlorite in varying abundances. Bt and Ms are the dominant minerals in schists, while Qz and Afs are more abundant in the dike samples. Foliations are observed as the preferred orientation of Qz and Afs in dikes and Bt and Ms in schist. The dominance of Ms and Qz suggests a continent-derived protolith possibly linked to the PCB. Further petrological and geochemical analyses will be done to interpret the pressure-temperature-deformation-time (*P-T-D-t*) history and petrogenesis of rocks in the Sibuyan Island.

Keywords: schists, phyllites, Sibuyan, Romblon Island Group

The metamorphic condition of the Oshima peninsula, in the southern part of Yamaguchi prefecture: Implications for metamorphic process and regional structure of the Ryoke metamorphic belt, west Seto Inland sea area

*Zejin LU¹, Masaaki Owada¹

1. Yamaguchi University

Keywords: High-temperature/Low-pressure type, Ryoke belt

Study of flexural slip formed by plate subduction

*Haruki Yoshiasa¹, Jun-ichi ANDO², SARKAR Dyuti Prakash², DAS Kaushik², GHOSH Gautam³

1. Hiroshima Univ. , 2. Hiroshima Univ., 3. Presidency Univ.

Keywords: Flexure slip, MBT, Microstructure observation, Dislocation creep, Frictional heating

Electron diffuse scattering in omphacite from lawsonite eclogite xenolith in Colorado Plateau: A preliminary report

*Ryo Fukushima¹, Tatsuki Tsujimori^{1,2}, Nobuyoshi Miyajima³, Tiziana Boffa-Ballaran³, Giacomo Criniti³, Catherine McCammon³

1. Tohoku Univ. Sci., 2. CNEAS, Tohoku Univ., 3. BGI, Univ. Bayreuth

Ultrahigh-pressure lawsonite eclogite xenolith from the Navajo volcanic field, central Colorado Plateau, has attracted much attention because this xenolith should be a fragment of the Farallon plate that was rapidly brought to the surface by the diatreme formation. One can therefore expect that reconnaissance of its constituting minerals is useful to examine eclogitization processes without affected by retrogression. Notably, cation ordering processes in omphacite lead to various types of micrometer-scale textures such as antiphase domains, reflecting the thermal history of slab eclogitization.

Here, we report the crystallographic features of omphacite in the lawsonite eclogite xenolith. The omphacite grains are a little enriched in Fe³⁺ (~aug₃₅₋₄₅ jd₄₀₋₅₀ aeg₁₅₋₂₀) and characterized by local compositional heterogeneities. Despite the peak metamorphic temperature of ~620°C, below the critical temperature of its order-disorder transition (~865°C), our X-ray diffraction analysis of representative crystals demonstrated the absence of any super-lattice diffraction peaks belonging to the ordered phase. However, our observation of the omphacite from the same eclogite with transmission electron microscopy revealed the presence of diffuse scattering related to the ordered structure, although antiphase domains were not observed.

These omphacites should have undergone incomplete disordering after the prograde metamorphism. The most probable event that induced cation disordering was the Cenozoic thermal pulse before the diatreme emplacement. A previous study on a dunite xenolith suggested the presence of pre-emplacement heating (>~800°C) that lasted for <~1700 years (Smith, 2010). Therefore, we conducted several high-pressure annealing experiments of natural ordered omphacites by using a piston-cylinder apparatus; we obtained completely disordered omphacites after 24 h annealing at 1000°C, 3 GPa. This corroborates the hypothesis that cation disordering in omphacite can occur within such a short timescale. Although the heating might have overprinted the prograde omphacite microtexture, these peculiar omphacites could allow to discuss short timescale of the episodic heating, which cannot be evaluated only with conventional analyses of macroscopic diffusion profiles.

Keywords: omphacite, order-disorder transition, Colorado Plateau, lawsonite eclogite, electron diffuse scattering

Exhumation process of serpentinite in the Sangun-Renge belt exposed at Sasaguri, Fukuoka prefecture

*Swarnaa ANNADURAI MUNUSAMY¹, Jun-ichi ANDO^{1,2}, Yuki IWASAKI³, Dyuti Prakash SARKAR^{1,2}, Kaushik DAS^{1,2}, Seiichiro UEHARA⁴

1. Hiroshima Univ., 2. HiPeR, Hiroshima, 3. NIPPON STEEL CORP., 4. The Kyushu Univ. Museum

Antigorite serpentinite (serp) of the Sangun-Renge Belt is exposed at the northern part of Narubuchi Dam, Sasaguri, Fukuoka Pref. Clarifying the exhumation process of serp is important for elucidating tectonics in mantle wedges. For this purpose, we conducted a petrological study of the Sasaguri serp and the amphibolite exposed in contact with this serp. Field survey reveals a mylonitized zone and siliceous schist (ss) distributed in the serp mass. The strike and dip of both rocks are similar to the serp mass. The microstructures of the serp, ss, and amphibolite are observed by optical microscope and SEM, the composition of Cr-spinel in serp is measured by EPMA, and the CPO of antigorite (atg) and quartz in ss is determined by SEM-EBSD. The following are revealed. 1) Atg, a few mm in size, shows undulose extinction and dynamic recrystallization, but no CPO. 2) Atg in the mylonitized zone is less than 100 μm in size, with (001) and [010] oriented parallel to foliation and lineation, respectively. 3) The composition of Cr-spinel (Fig. 1) indicates that the source rock (peridotite) is of forearc origin. The ferritchromite rim suggests that the peridotite is re-equilibrated at greenschist to amphibolite temperatures. 4) Magnetite formed around the ferritchromite rim indicates that the serpentinization occurred after ferritchromization. 5) The source of ss is chert. 6) SS shows a porphyroclastic texture, with X max CPO of c-axis of porphyroclast and crossed girdle of neoclasts. Crossed girdle is known to form at 400-550°C. 7) The CPO of neoclasts indicates the top-to-north shear sense, which implies that recrystallization occurred during exhumation. 8) The hornblende thermometry shows that the amphibolite is formed at 550-700°C. 9) The kink band in the hornblende is metasomatized to actinolite, suggesting retrograde metamorphism at greenschist facies condition. Based on the above results, the exhumation process of Sasaguri serp will be discussed in our presentation.

Keywords: Exhumation, Serpentinization, Antigorite, Quartz, CPO

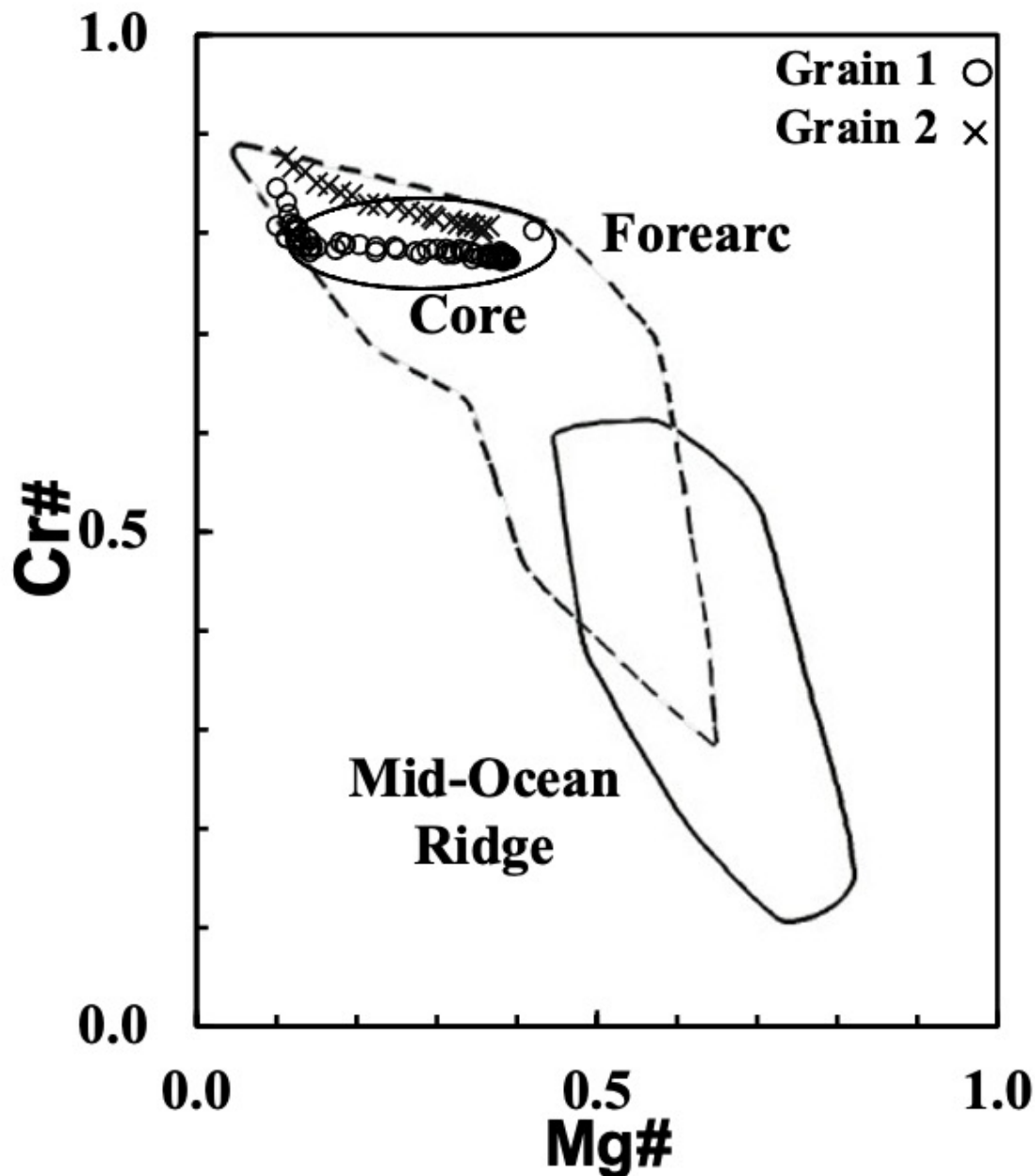


Fig. 1: Chemical composition of Cr-spinel along a line from the center to the rim for two grains. Mg# in the center is 0.3-0.4 and ferritchromatization is visible at the rim. $Cr\# = Cr/(Cr+Al)$, $Mg\# = Mg/(Mg+Fe^{2+})$. Modified from Morishita et al. (2013).

Mineral and bulk compositions of an outcrop showing a symmetric sequence composed of peridotite and mafic-rock layers of Horoman peridotite, Japan

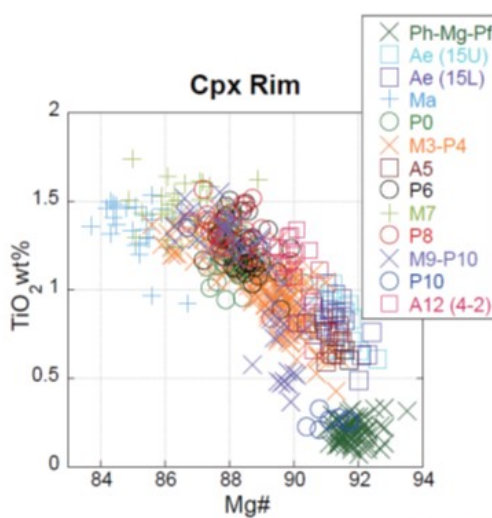
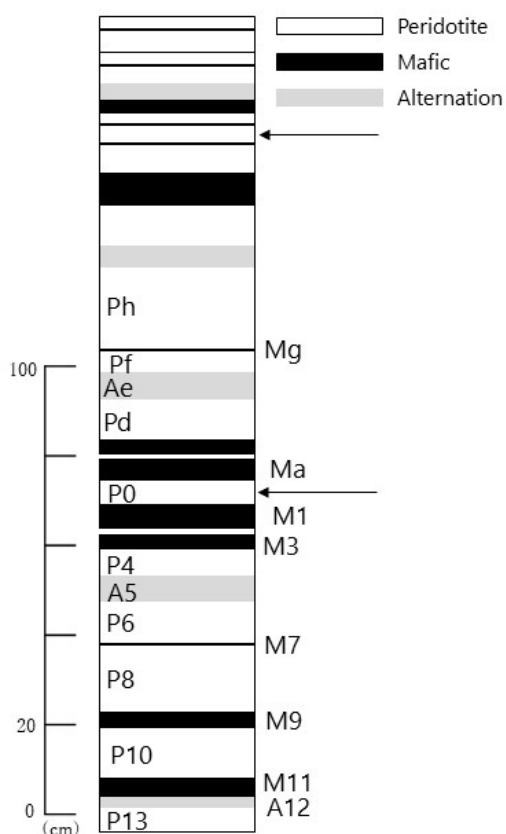
*Keisuke Kurihara¹, Tatsuhiko Kawamoto¹, Aya Hihara¹, Miki Tasaka¹, Hajime Taniuchi², Takeshi Kuritani³, Akiko Matsumoto³

1. Shizuoka Univ., 2. AIST, 3. Hokkaido Univ.

Keywords: Peridotite, Mafic-rock, Mantle, refertilization, Chemical composition

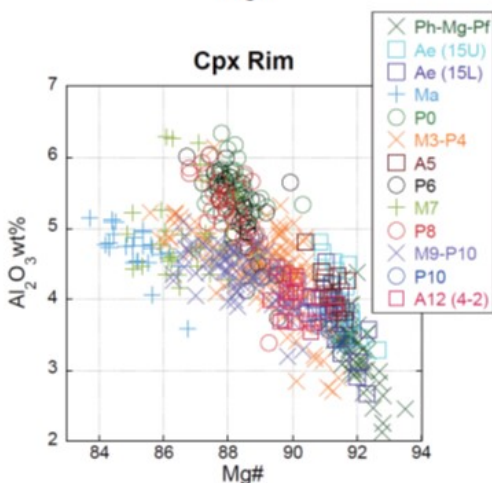
図A アポイ岳北尾根露頭の柱状図

矢印は対称構造の中心を指す。



図B

Cpx リムの
TiO₂ wt% vs Mg#



図C

Cpx リムの
Al₂O₃ wt% vs Mg#

Mechanism of seismic fault generation involving in pseudotachylyte formation in ductile regime: examples from Sarwar-Junia Fault Zone, India

*Junya OKAZAKI¹, Jun-ichi Ando¹, Kaushik Das¹

1. Hiroshima University

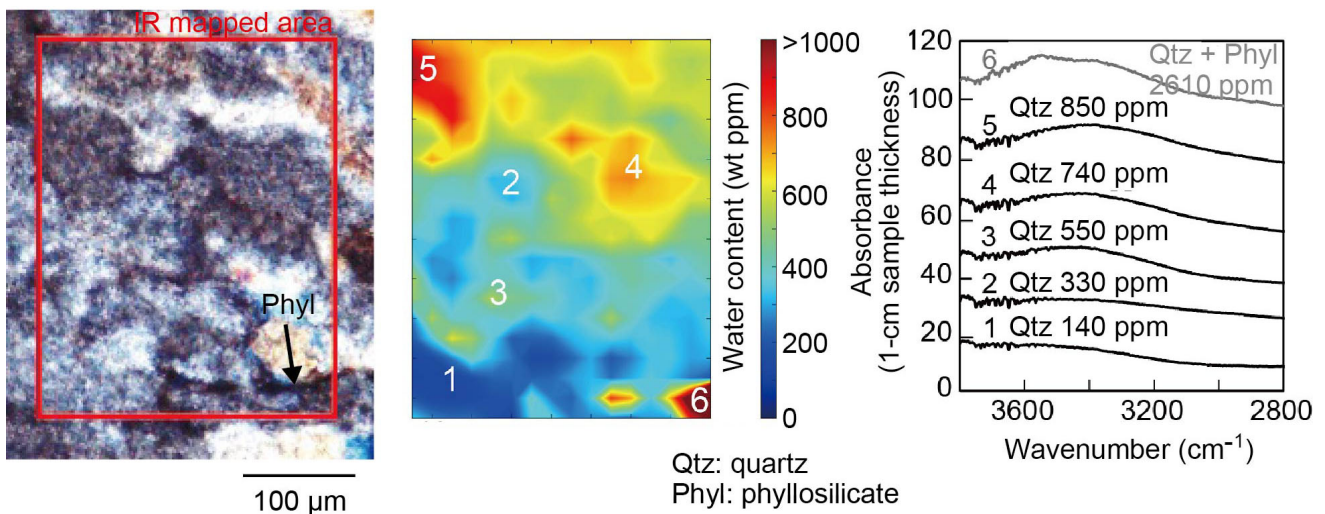
Keywords: Pseudotachylyte, Fault activity, Frictional melting, Ductile deformation zone

Water content distributions in dynamically recrystallized quartz grains in granitoid mylonites: A case of an inner shear zone in the Ryoke Belt in the Kishiwada area, Osaka

*Takemasa Norimura¹, Junichi Fukuda¹

1. Osaka Metrop. Univ. Geosci.

Keywords: Quartz, Plastic deformation, Dynamic recrystallization, Water content, Infrared spectroscopy



Deformation microstructures and slip systems developed in olivine from the Petit-spot peridotite xenoliths: Insights on deformation mechanisms and anisotropy of upper mantle

*Dyuti Prakash SARKAR^{1,2}, Norikatsu Akizawa³, Jun-ichi Ando^{1,2}, Masako Yoshikawa^{1,2}

1. Hiroshima University, 2. HiPeR, 3. The University of Tokyo

Petit-spot is small knoll ($\sim 1 \text{ km}^3$ volume) occurring on the ocean floor and is considered to be formed as a result of plate flexure along outer rise. The presently studied peridotite xenoliths were obtained from petit-spot volcanic fields (Sites A and B) placed in the offshore of northern Japan during scientific cruises of YK20-14S and YK21-07S, using deep-submergence research vehicle Shinkai6500. The peridotite xenoliths are included in vesicular alkaline basalts. The peridotites are harzburgitic to lherzolititic in modal composition. The forsterite number ($\text{Mg}/(\text{Mg} + \text{Fe})$ atomic ratio $\times 100$) of the olivine ranges from 91 to 92, and the pyroxenes are enstatite or diopside in composition. The olivines show minor reaction only in the boundaries with the host basalt, suggesting the preservation of pristine mantle microstructures. Additionally, the olivine grains show development of sub-grain boundaries, however distinct foliation and lineation are not prominently observed. Elucidating the deformation fabric of the olivine is a challenge as the individual xenoliths are unoriented and do not have distinct foliation or lineation. Hence to determine the active slip systems we have used Electron Backscatter Diffraction (EBSD) analysis to determine the slip system of individual sub-grain boundaries developed in each olivine grains for the samples and attempted to infer the overall slip system developed in the analyzed samples. We present these results and infer the possible deformation conditions for the peridotite xenoliths from the petit-spot volcanoes. Additionally, the results also provide us insights on the seismic anisotropy of the lithospheric mantle in the northwestern Pacific region.

Keywords: petit-spot, olivine deformation, mantle deformation, seismic anisotropy

Novel automated method for estimating the peak temperature from the crystallinity of carbonaceous material using EM algorithm

*Yoshihiro NAKAMURA¹, Tarojiro MATSUMURA¹, Kazuhiro MIYAZAKI¹

1. AIST

Keywords: Carbonaceous material, Micro-Raman spectroscopy, EM algorithm

Zircon U-Pb ages of the Oura igneous complex, northern Kyoto area, SW Japan and its tectonic correlation

*Kosuke KIMURA¹, Kenta Kawaguchi², Nobuhiko Nakano², Tatsuro Adachi², Kaushik Das³

1. Osaka Metropolitan Univ. Sci., 2. Kyushu Univ. , 3. Hiroshima Univ. Sci.

Keywords: Oura igneous complex, Zircon, Yakuno ophiolite, Inner zone of Southwest Japan

Metasomatic syenite at the interface between charnockite and calc-silicate granulite, Eastern Ghats Belt, India: Mineral-chemical characterization and its implications during orogenesis

*Kaushik DAS^{1,4}, Proloy Ganguly², Sankar Bose^{3,4}

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We have recently found occurrences of meter-to-micrometer scale bands and veins of syenite at the contact between the calc-silicate granulite (clinopyroxene-plagioclase-scapolite-wollastonite-calcite-grandite garnet-titanite-apatite-quartz) and the coarse-grained charnockite (plagioclase-K-feldspar-orthopyroxene-quartz) exposed at the Phulbani area of the Proterozoic Eastern Ghats Province (EGP). The calc-silicate granulite witnessed ultrahigh temperature (UHT) metamorphism followed by charnockite intrusion. Syenite (clinopyroxene-K-feldspar-apatite±titanite±quartz) bands and mylonitized veins are roughly parallel to the axial plane of the mesoscopic-scale fold present in the calc-silicate granulite. Anorthitic patches, and myrmekite intergrowth replacing the albite component of plagioclase of the contact zone of charnockite are common. In charnockite, clinopyroxene and K-feldspar-bearing syenitic vein occurs which in turn replaces anorthitic plagioclase ($An > 96$ mol%) of calc-silicate granulite to scapolite+calcite bearing mineral assemblage. All these indicate a fluid-rock interaction while forming syenite. During this deep crustal metasomatism, fluor-apatite overgrowths and neoblastic growths occurred in the syenite as well as the leached part of the wall rock. While the early-formed apatite grains are Ce, La, Y, and Si-enriched, the overgrowths are relatively depleted. The present study highlights the interactions of lower crustal rocks with saline, carbonic, and REE-depleted fluid. Similar metasomatic syenite occurrences are reported from other portions of the northern EGP implying its formation on a large scale during orogenic evolution.

Keywords: Syenite, Apatite, Trace elements, Metasomatism

Petrography of V and Zn-rich gahnite-sillimanite-muscovite gneiss from Menipa, Sør Rondane Mountains, East Antarctica

*Tatsuro ADACHI¹, Tetsuo Kawakami², Fumiko Higashino², Masaoki Uno³

1. Kyushu University, 2. Kyoto University, 3. Tohoku University

Keywords: Vanadium, Zinc, metasedimentary rock, Sør Rondane Mountains, East Antarctica

Unraveling the Link Between Deformation, Metamorphism, and Fluid Flow in the Archean Dharwar Craton, Southern India

*Sreehari LAKSHMANAN¹, Kiran Sasidharan², Satish-Kumar Madusoodhan², Tsuyoshi Toyoshima²

1. Shimane Uni., 2. Niigata Uni.

The Dharwar Craton (DC) is the largest Archean (3500 to 2500 Ma) craton in the Indian Shield. The DC is divided into three main regions: the Western Dharwar Craton (WDC), the Central Dharwar Craton (CDC), and the Eastern Dharwar Craton (EDC). In this presentation, we aim to discuss the metamorphic history of the WDC and its interplay with deformation and fluid flow. We will present detailed petrological data from the eastern part of the WDC, specifically focusing on the southern section of the Chitradurga Schist Belt (CSB). The CSB consists of various rock formations, including the Sargur Group and Dharwar Supergroup. Through our detailed structural analysis, we have identified five major deformation events in the WDC. Among these, D2 (NNW-SSE trending reverse faults and upright folds) and D3 (strike-slip sinistral shear) are the regional-scale deformation events. Due to the limited availability of mineral assemblages suitable for geothermometry, we have employed carbonaceous material thermometry (CM) in metapelitic rocks from each formation. We have selected 15-samples containing CM from different Groups. Using Raman spectroscopy, we have identified differences in metamorphic temperatures among the Groups. The Bababudan and Chitradurga Groups exhibit metamorphic temperatures ranging from 500°–550°C, whereas the Hiriya and Sargur Groups exhibit temperatures between 450°–400°C. We interpret these differences in metamorphic temperatures as being associated with the spatial relation to the D₃ strike-slip shear zones within the study area. The fluid flow along these shear zones may have influenced the properties of the carbonaceous material, thereby affecting the observed temperatures. Additionally, based on the metamorphic mineral assemblage, the presence of Chlorite+Muscovite association is prominent in the D₃ shear zones, indicating fluid flow processes during the D₃ deformation. Moreover, microscopic observations reveal that Garnet-Biotite assemblages in the D2 shear zone are cross-cut by Fe-rich fluid veins, suggesting fluid flow processes following the D2 deformation. We interpret these fluid flow associated with the D3 deformation, which is directly connected to the regional-scale collision and associated strike-slip deformation processes that occurred throughout the entire DC.

Keywords: Dharwar Craton, Tectonics, Metamorphism, Deformation