

Fri. Sep 13, 2024

Poster presentation | T1: Comprehensive understanding of the crustal evolution and resource exploration in Asia (Symposium)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC | Entrance Hall Higashiyama Campus

T1: Comprehensive understanding of the crustal evolution and resource exploration in Asia (Symposium)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[T1-P-01] Syenitic veining at the northern Eastern Ghats Belt, India: Formation mechanism, fluid-rock interaction and a review of its economic mineral potential

*Kaushik DAS^{1,5}, Proloy Ganguly², Aparupa Banerjee³, Sankar Bose^{4,5} (1. Hiroshima University, 2. Kazi Nazrul University, 3. Shahid Matangini Hazra Government General Degree College, 4. Presidency University, 5. HiPER, Hiroshima University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[T1-P-02] Amphibole-bearing granitic rocks in the Ereendavaa block, NE Mongolia: Insights into multi-stage magmatic sources and crystallization conditions

*Munkhdelger Bold¹, Tatsuki Tsujimori¹, Yasuhito Osanai², Nobuhiko Nakano², Tatsuro Adachi², Otgonbayar Dandar¹, Fransiska Ayuni Catur Wahyuandari² (1. Tohoku Univ., 2. Kyushu Univ)

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

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC | Entrance Hall Higashiyama Campus

S2: Water Rock Interaction (Special Session)

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[S2-P-01] Scales of extensional-shear fracturing and magnitudes of seismicity induced by magma intrusions into lower crust: Scale comparisons of dike swarm in the high-grade metamorphic rocks and deep low-frequency earthquakes

「発表賞エントリー」

*Takumi Nara¹, Masaoki Uno¹, Tetsuo Kawakami², Fumiko Higashino², Tatsuro Adachi³, Noriyoshi Tsuchiya^{1,4} (1. TOHOKU Univ. Env., 2. Kyoto Univ. Sci., 3. Kyushu Univ. Soc., 4. Hachinohe Kosen)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[S2-P-02] Carbonation of serpentinite and formation process of listvenite from Urayama River, Shikokuchuo City, Ehime Prefecture, Japan

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

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[S2-P-03] Texture transition during serpentinization in Hodono, Ehime Prefecture

「発表賞エントリー」

*Hinano Wada¹, Enju Satomi¹ (1. Ehime Univ. S/E)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[S2-P-04] Water-rock interaction recorded in episyenites from Hakatajima Island, Ehime Prefecture

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*Tokio FUKUI¹, Kazuya SHIMOOKA², Toshiro TAKAHASHI³, Satoshi SAITO¹ (1. Ehime Univ., 2. Kwansai Gakuin Univ., 3. Niigata Univ.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[S2-P-05] Mechanisms of Reaction-Induced Fracturing in Serpentinite Carbonation; Insights from Hydrothermal Experiments and Geochemical Modeling

「発表賞エントリー」

*Taiki Taiki¹, Masaoki Uno¹, Atsushi Okamoto¹ (1. Tohoku University)

Poster presentation | R4: Mineral sciences of the Earth surface

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC | Entrance Hall Higashiyama Campus

R4: Mineral sciences of the Earth surface

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-01] Design and synthesis of aragonite particles as a reinforcement of plastic materials

*Hiroshi SAKUMA¹, Shigeru SUEHARA¹, Masumi KAMON¹, Kenji TAMURA¹ (1. NIMS)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-03] Experiments on the Inhibitory Effect of Polysaccharides on Cation Ordering of Dolomite During Dolomitization Reaction at 200°C: Preliminary Results

Hiromi KONISHI¹, *Yao Chen¹ (1. Niigata Univ. Sci.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-04] Formation Process of Carbonate Minerals in Non-aqueous Solvents: Consideration of the Effects of Different Hydration States of Cations

Naoki IWANE¹, *Jun KAWANO¹, Hiroyuki KAGI², Ayako SHINOZAKI¹, Takaya NAGAI¹ (1. Hokkaido Univ. Sci., 2. UTokyo Sci.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-05] Impact of evaporation on CO₂ mineralization during enhanced rock weathering*Naoki NISHIYAMA¹, Masao SORAI¹, Keisuke FUKUSHI², Yuto NISHIKI¹ (1. National Institute of Advanced Industrial Science and Technology (AIST), 2. Kanazawa University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-06] Framboidal pyrite in modern stromatolite from Fukiage-Jigoku, Onikobe Spring, Miyagi, Japan

「発表賞エントリー」

*Tatsuya Kamada¹, Hiroaki Ohfuji¹ (1. Tohoku Univ. Sci.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-07] Observations of nano-texture for amosite asbestos by using high-resolution STEM imaging

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

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

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC | Entrance Hall Higashiyama Campus

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

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-01] Ezochiite and placer deposit of platinum group minerals in northwestern Hokkaido, Japan

*Daisuke HAMANE¹, Katsuyuki Saito (1. The University of Tokyo)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-02] Review for Mineralogical Science: Mineral Resources, Heritage Stone, and SDGs

*Yuhei Takahashi¹ (1. NUE)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-03] Formation process of olivine with remarkable parting and apparently oblique extinction in the Iherzolite of Ochiai-Hokudo peridotite complex, Okayama Prefecture, Japan

*Terumi EJIMA¹, Takashima Chihiro², Arai Shoji³ (1. Shinshu University, 2. DAIYA SEIKI Co., Ltd., 3. Kanazawa University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-04] The effect of Na ion on carbonation reaction of forsterite

*Hiroki Hasegawa¹, Atsushi Kyono², Satoru Okada¹, Kosuke Yamaguchi¹ (1. Univ of Tsukuba, Grad. sch. of Life and Environmental. Sci, 2. Univ of Tsukuba, Life and Environmental Science)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-05] Mineralogical characteristics of Pothole Reef and Pseudo Merensky Reef at the western limb of the Bushveld Complex, South Africa

「発表賞エントリー」

*Amu Umesato¹, Takuya Echigo¹, Yasushi Watanabe¹ (1. Akita Univ. Int.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-06] High-Ti biotite in the alkali volcanic rock from the Akiyoshi Belt and its significance

*Kosuke Kimura¹, Kaushik Das², Yasutaka Hayasaka³ (1. Osaka Metro. Univ. Sci., 2. Hiroshima Univ., 3. Amakusa Mus. Goshoura Dinosaur Isl.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-07] Estimation of the origin of SDW in the Horoman peridotite complex by analysis of micro-inclusions in the olivine

「発表賞エントリー」

*Masaharu Aketa¹, Akira Miyake¹, Norikatsu Akizawa², Megumi Matsumoto³, Yohei Igami¹, Itaru Mitsukawa¹ (1. Kyoto University, 2. University of Tokyo, 3. Tohoku University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-08] Fe-Ni-S-As minerals in the Imono peridotite body, Besshi area, Niihama city, Ehime prefecture.

「発表賞エントリー」

*Masato Kuniyoshi¹, Satomi Enju¹ (1. Ehime Univ.Sci and Eng.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-09] Fluorite mineralization associated with alkaline metasomatism in the Jinmu-Mihara deposit, Hiroshima, Japan.

「発表賞エントリー」

*Masahiro SUNADA¹, Takuya Echigo¹, Yasushi Watanabe¹ (1. Akita Univ. IRS.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-10] Petrological study of ultramafic rocks from the Kiyama area, eastern Kumamoto City

Narumichi Nishio¹, *Satoko ISHIMARU² (1. Kumamoto Univ. Sci., 2. Kumamoto Univ. FAST)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-11] FLUID INCLUSION STUDIES IN QUARTZ VEINS WITH TIN MINERALIZATION IN THE KIBARAN INTRUSIVE ROCKS IN KALEHE (SOUTH KIVU, DR CONGO)

「発表賞エントリー」

*MUSA Moise-Kam's SAIDI¹, MADDHUSOODHAN Satish Kumar¹ (1. Niigata Univ.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-12] Depleted peridotite and melt reaction as recorded by layered dunite-harzburgite in the Horoman peridotite, Hidaka Metamorphic Belt, Hokkaido, Japan.

「発表賞エントリー」

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

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-13] Research and development for the exploration of unknown cosmic ray events using Paleo-Detector

*Yuki Ido¹, Tatsuhiko Naka², Shota Futamura³, Tohma Ori⁴, Takenori Kato⁵ (1. Nagoya Univ. Env., 2. Toho Univ. Sci, 3. Nagoya Univ. Sci., 4. N.I.T. Suzuka, 5. Nagoya Univ. ISEE)

Poster presentation | R8: Metamorphic rocks and tectonics

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC | Entrance Hall Higashiyama Campus

R8: Metamorphic rocks and tectonics

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[R8-P-01] Mineralogical characterization of serpentinite varieties in Sangun-Renge Belt exposed at Sasaguri, Fukuoka Prefecture, and their geological implications

「発表賞エントリー」

*Swarna ANNADURAI MUNUSAMY¹, Jun-ichi ANDO^{1,2}, Yuki IWASAKI³, Kaushik DAS^{1,2}, Dyuti Prakash SARKAR⁴, Seiichiro UEHARA⁵ (1. Hiroshima Univ., 2. HiPeR, Hiroshima, 3. NIPPON STEEL CORP., 4. JAMSTEC, 5. The Kyushu Univ. Museum)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-02] Metamorphic temperature structure of Sanbagawa Metamorphic Belt in the southern part of Shinshiro City, Aichi Prefecture, Japan

「発表賞エントリー」

*Akane Matsuzaki¹, Yui Kouketsu¹, Katsuyoshi Michibayashi¹ (1. Nagoya Univ. Env.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-03] Origin and pyrometamorphism of gneissose granitoid xenoliths from Mt. Daisen, Tottori Prefecture, SW Japan

「発表賞エントリー」

*Mizuki TAKAHASHI¹, Shunsuke Endo¹ (1. Shimane University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-04] Petrography of monazite in a metapelite in the eastern Nepal Himalaya and Development of Th-Pb dating method for monazite

「発表賞エントリー」

*Shumpei KUDO¹, Tetsuo Kawakami¹, Sota Niki², Toru Nakajima³, Takafumi Hirata⁴, Takeshi Imayama⁵ (1. Kyoto Univ. Sci., 2. Nagoya Univ. ISEE., 3. JAEA, 4. UTokyo. Sci., 5. Okayama Univ. of Sci.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-05] Petrological description of ultramafic rocks in the low-grade metamorphic zone of the Sanbagawa belt: A case study of the Ina area, Nagano Prefecture, central Japan

「発表賞エントリー」

*Kaho Nobuhara¹, Hiroshi Mori¹, Takayoshi Nagaya² (1. Shinshu Univ. , 2. Tokyo Gakugei Univ.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-06] Detrital zircon U–Pb dating and Raman spectral analysis of carbonaceous material in the boundary area of the Sanbagawa–Chichibu belts, central Kii Peninsula

*Hiroshi MORI¹, Kojiro USUI^{1,2}, Tetsuya Tokiwa¹, Kazuhiro Ozawa³ (1. Shinshu University, 2. Nippon Koei Co., Ltd., 3. Precision Forestry Measurement Ltd.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-07] New finding of wakefieldite from an amphibolite in the Horokanai area, Kamuikotan HP metamorphic belt, Hokkaido, Japan

*Taro Kato¹, Kosuke NAEMURA¹, Toru Takeshita² (1. Iwate University, 2. Pacific Consultants Co., Ltd.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-08] Thermal history and protolithic detritus provenance of a sillimanite–chrysoberyl-bearing gneiss from the Ashio mountains in the western part of Tochigi prefecture

*Ippei KITANO¹ (1. Hokkaido Univ. Mus.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-09] Petrological characterization and geochronology of metamorphic rocks from the Northern Subzone of the Maizuru Terrane

*Sota Muroi¹, Kaushik Das¹, Kenta Kawaguchi¹, Yasutaka Hayasaka² (1. Hiroshima University, 2. Amakusa Museum of Goshoura Dinosaur Island)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-10] The fate of organic carbon during subduction: Raman micro-spectroscopy and C-isotope geochemistry of carbonaceous materials in Sambagawa pelitic schists, central Shikoku, Japan

*Hironobu Harada¹, Tatsuki Tsujimori¹, Akizumi Ishida¹, Takeshi Kakegawa¹, Tetsumaru Itaya² (1. Tohoku Univ., 2. jGnet)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-11] Fluid inclusions of ophicarbonates in the Apennine Mountains, Italy

Hiroyuki Kaneko¹, *Tatsuhiko KAWAMOTO¹, Francesca Meneghini², Yosuke Osawa¹ (1. Shizuoka University, 2. Università di Pisa | UNIPI · Department of Earth Sciences)

Poster presentation | T1: Comprehensive understanding of the crustal evolution and resource exploration in Asia (Symposium)

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[T1-P-01] Syenitic veining at the northern Eastern Ghats Belt, India: Formation mechanism, fluid-rock interaction and a review of its economic mineral potential

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[T1-P-02] Amphibole-bearing granitic rocks in the Ereendavaa block, NE Mongolia: Insights into multi-stage magmatic sources and crystallization conditions

*Munkhdelger Bold¹, Tatsuki Tsujimori¹, Yasuhito Osanai², Nobuhiko Nakano², Tatsuro Adachi², Otgonbayar Dandar¹, Fransiska Ayuni Catur Wahyuandari² (1. Tohoku Univ., 2. Kyushu Univ)

Syenitic veining at the northern Eastern Ghats Belt, India: Formation mechanism, fluid-rock interaction and a review of its economic mineral potential

*Kaushik DAS^{1,5}, Proloy Ganguly², Aparupa Banerjee³, Sankar Bose^{4,5}

1. Hiroshima University, 2. Kazi Nazrul University, 3. Shahid Matangini Hazra Government General Degree College, 4. Presidency University, 5. HiPeR, Hiroshima University

Extensive development of meter-to-micrometer scale felsic bands and veins at the contact between the calc-silicate granulite (clinopyroxene-plagioclase-scapolite-wollastonite-calcite-grandite garnet-titanite-apatite-quartz), charnockite (plagioclase-K-feldspar-orthopyroxene-ilmenite-quartz± garnet), and mafic granulite (clinopyroxene-orthopyroxene-plagioclase±garnet-hornblende±quartz) is observed at a 50-60 km wide area near the northern boundary (south of Mahanadi shear zone) of the Eastern Ghats Province of the Eastern Ghats Belt, India. The calc-silicate and mafic granulites witnessed HT to UHT metamorphism at ca. 1000 Ma, and two pulses of charnockite magmatism between ca. 970 Ma and 950 Ma. Clinopyroxene-bearing syenitic (clinopyroxene-K-feldspar-titanite-REE-phases-minor quartz) bands and veins occur in these rocks sometimes at the rock interface and even as a vein network inside one of the preexisting rocks. Inside the veins close to their wall clinopyroxene (+titanite) formed at the expense of orthopyroxene (+ilmenite). Anorthitic patches and myrmekite intergrowth replaced the albitic plagioclase of the wall zone of charnockite. All these reactions suggest selective mobility of at least Ca and Si in the vein with a definite gradient of these from the interior to the wall. Primary and secondary fluid inclusions in the vein mineralogy are rich in CO₂. Compositional variation in apatite from the host rock to the vein also shows scavenging of REE and new profuse formation of REE-rich megacrystic allanite, titanite, apatite, and zircon inside the vein. The contact rocks of charnockite show reactions of monazite to allanite, apatite, and zircon.

It seems that veins were formed by carbo-fracturing followed by metasomatism post-dating the charnockite magmatism. The nature of the fluid was possibly slightly saline, but carbonic. From our own data and that in the existing literature, we also review the economic potential of these veins.

Keywords: Carbo-fracturing, Syenite veining, Trace element mobility, Metasomatism

Amphibole-bearing granitic rocks in the Ereendavaa block, NE Mongolia: Insights into multi-stage magmatic sources and crystallization conditions

*Munkhdelger Bold¹, Tatsuki Tsujimori¹, Yasuhito Osanai², Nobuhiko Nakano², Tatsuro Adachi², Otgonbayar Dandar¹, Fransiska Ayuni Catur Wahyuandari²

1. Tohoku Univ., 2. Kyushu Univ

The Ereendavaa block (EDB) is located along the southern part of the Mongol-Okhotsk Belt within the eastern Central Asian Orogenic Belt. The EDB has experienced multi-stage magmatism through tectonic cycles, including northward subduction of the Paleo-Asian Ocean during the early Paleozoic and southward subduction of the Mongol-Okhotsk Ocean during the early Mesozoic. However, melt evolution and magma crystallization conditions during magmatic pulses at 540, 470, and 220 Ma are poorly constrained. This study aims to elucidate magmatic crystallization conditions through mineral chemistry (EPMA) analysis of amphibole-bearing granitic rocks from these periods. The granitic rocks in the EDB typically comprise quartz, feldspar, amphibole, and mica, with accessory minerals like opaque. Compositional data for feldspar and hydrous mafic minerals (amphibole and biotite) reveal the following compositions: (1) **~540 Ma granodiorite**: orthoclase, oligoclase, pargasite, and Mg-rich biotite; (2) **~470 Ma granite**: orthoclase, oligoclase, ferro-pargasite, and Fe-rich biotite; (3) **~220 Ma granodiorite**: orthoclase, andesine-oligoclase, edenite, and Mg-rich biotite. The mineral chemistry indicates a sub-alkaline nature for the 540 and 220 Ma granodiorites, while the 470 Ma granite is alkaline. Temperature estimates, based on Ti-in-Ca amphibole geothermometer, range from 957–869°C (540 Ma) and 918–858°C (470 Ma), to 825–782°C (220 Ma). Based on Al-in-Ca amphibole geobarometer, pressure estimates suggest these rocks formed at ~8–6 kbar, ~9–7 kbar, and ~4–3 kbar, respectively. Average oxygen fugacity values are -14.11 (470 Ma granite), -11.82 (540 Ma granodiorite), and -13.04 (220 Ma granodiorite). In summary, the parental magmas for the 540 Ma and 220 Ma granodiorites evolved from orogenic, calc-alkaline to sub-alkaline magmas, emplaced at middle (~26 km) and upper (~12.5 km) crustal levels. They crystallized at high (up to 957°C) and lower temperatures (up to 825°C) under oxidizing conditions. The 470 Ma granitoid likely evolved from more alkaline magmas, emplaced at deep crustal levels (~29 km) approaching the lower crust, and crystallized at high temperatures (up to 918°C) under more reducing conditions than the 540 Ma and 220 Ma granodiorites.

Keywords: CAOB, geothermobarometer, EPMA

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

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S2: Water Rock Interaction (Special Session)

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*Takumi Nara¹, Masaoki Uno¹, Tetsuo Kawakami², Fumiko Higashino², Tatsuro Adachi³, Noriyoshi Tsuchiya^{1,4} (1. TOHOKU Univ. Env., 2. Kyoto Univ. Sci., 3. Kyushu Univ. Soc., 4. Hachinohe Kosen)

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[S2-P-02] Carbonation of serpentinite and formation process of listvenite from Urayama River, Shikokuchuo City, Ehime Prefecture, Japan

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[S2-P-03] Texture transition during serpentinization in Hodono, Ehime Prefecture

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*Hinano Wada¹, Enju Satomi¹ (1. Ehime Univ. S/E)

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[S2-P-04] Water-rock interaction recorded in episyenites from Hakatajima Island, Ehime Prefecture

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*Toko FUKUI¹, Kazuya SHIMOOKA², Toshiro TAKAHASHI³, Satoshi SAITO¹ (1. Ehime Univ., 2. Kwansei Gakuin Univ., 3. Niigata Univ.)

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*Taiki Taiki¹, Masaoki Uno¹, Atsushi Okamoto¹ (1. Tohoku University)

Scales of extensional-shear fracturing and magnitudes of seismicity induced by magma intrusions into lower crust: Scale comparisons of dike swarm in the high-grade metamorphic rocks and deep low-frequency earthquakes

*Takumi Nara¹, Masaoki Uno¹, Tetsuo Kawakami², Fumiko Higashino², Tatsuro Adachi³, Noriyoshi Tsuchiya^{1,4}

1. TOHOKU Univ. Env., 2. Kyoto Univ. Sci, 3. Kyushu Univ. Soc., 4. Hachinohe Kosen

Keywords: volcanic earthquakes, magma intrusion, Antarctica

Carbonation of serpentinite and formation process of listvenite from Urayama River, Shikokuchuo City, Ehime Prefecture, Japan

*Hikaru Takagaki¹, Yohei Shirose¹

1. Ehime Univ. Sci.&Egn.

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

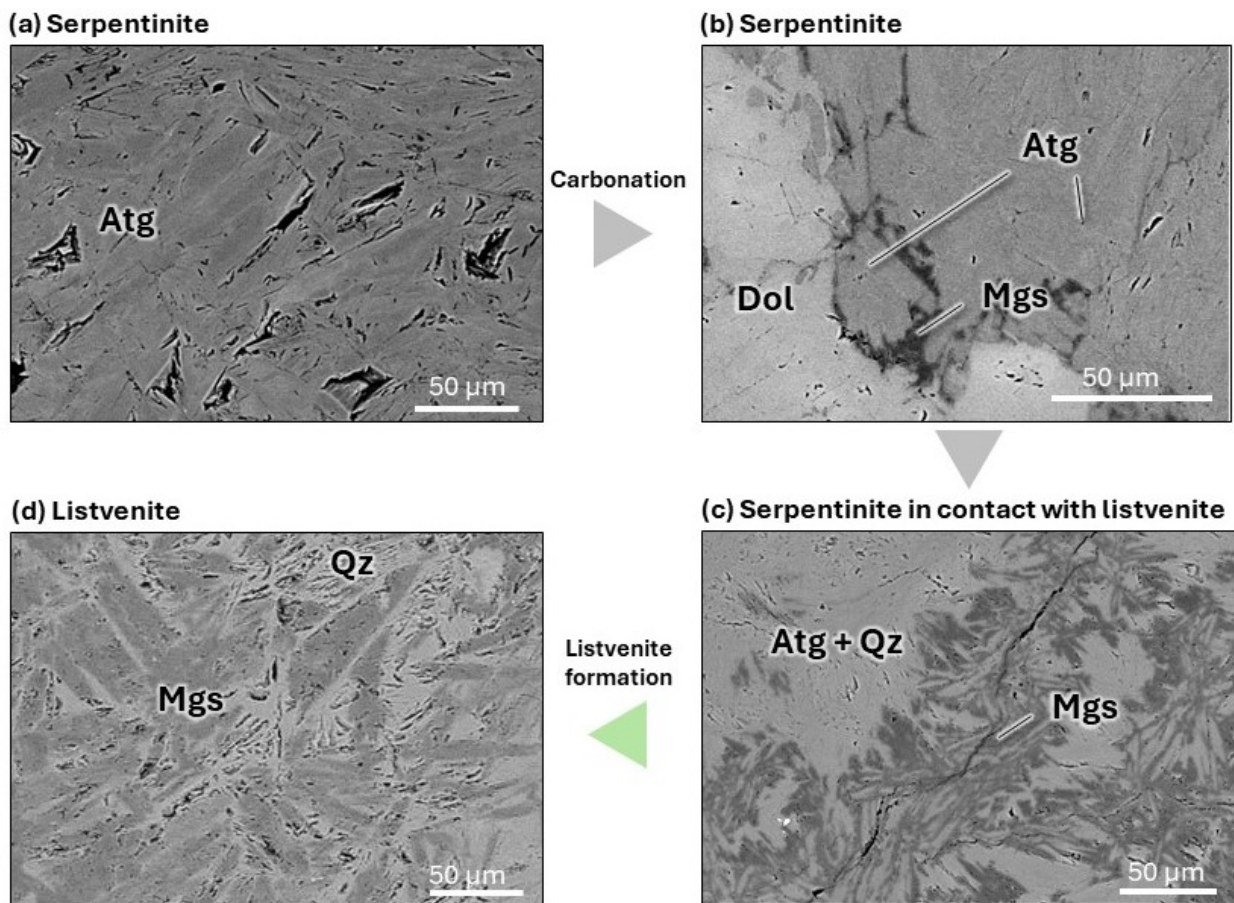


Figure. Carbonation and listvenite formation from serpentinite.

BSE images of (a) serpentinite, (b) carbonated serpentinite, (c) carbonated serpentinite in contact with listvenite, (d) listvenite.
Atg : antigorite, Qz : quartz, Mgs : magnesite, Dol : dolomite.

Texture transition during serpentinization in Hodono, Ehime Prefecture

*Hinano Wada¹, Enju Satomi¹

1. Ehime Univ. S/E

Keywords: peridotite, serpentinite, antigorite, Higashi-akaishi peridotite body

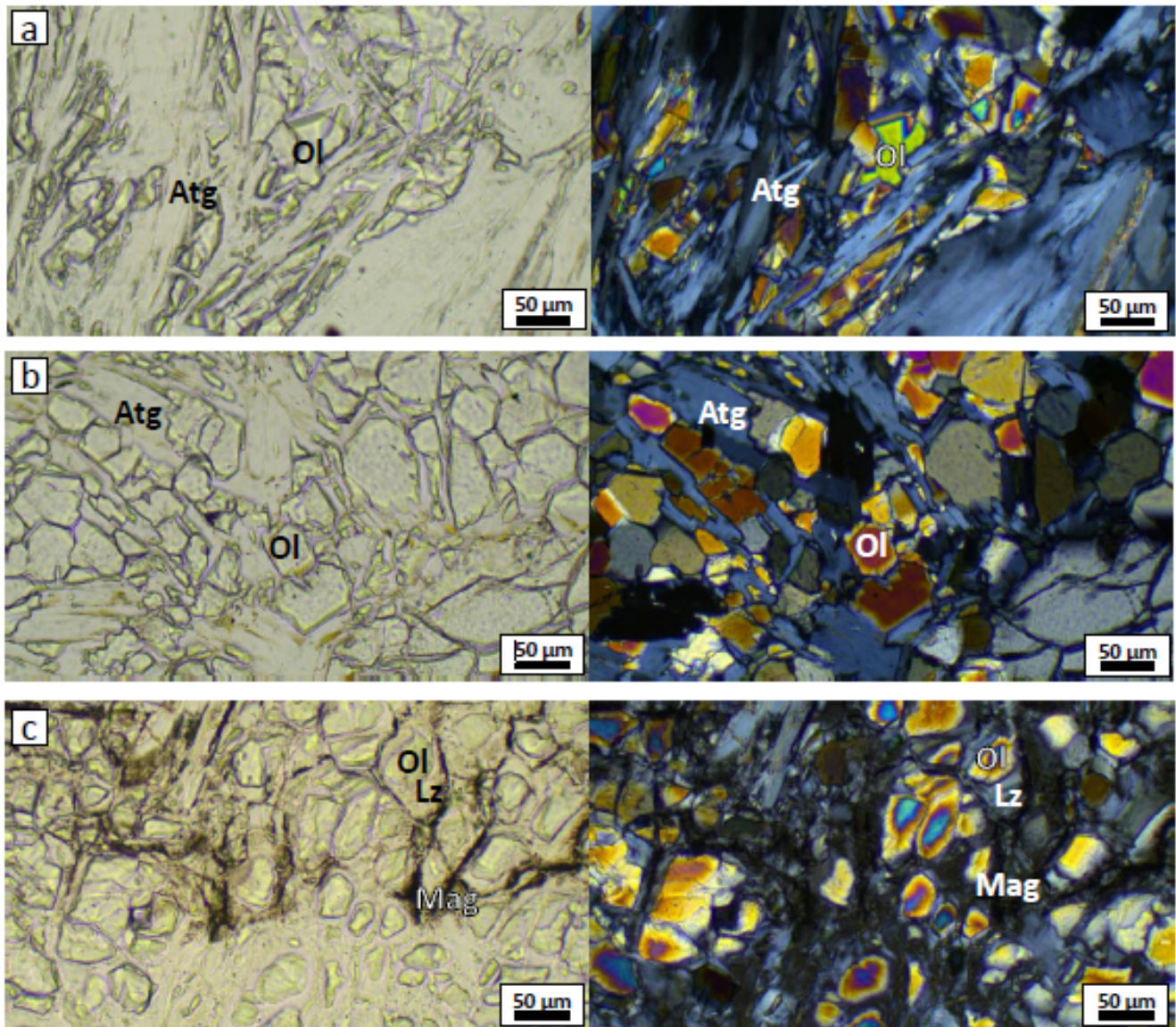


図1 : 試料中に含まれる蛇紋石とかんらん石の共存組織 (左 オープンニコル, 右 クロスニコル), (a)直線的な輪郭を持つくさび状-板状のかんらん石と短冊状アンチゴライト, (b)曲線的な輪郭を持つ粒状のかんらん石と短冊状アンチゴライト, (c)メッシュ組織のコアとして存在するかんらん石とリザーダイトリム

Ol : かんらん石, Atg : アンチゴライト, Lz : リザーダイト, Mag : 磁鉄鉱

Water-rock interaction recorded in episyenites from Hakatajima Island, Ehime Prefecture

*Toko FUKUI¹, Kazuya SHIMOOKA², Toshiro TAKAHASHI³, Satoshi SAITO¹

1. Ehime Univ., 2. Kwansei Gakuin Univ., 3. Niigata Univ.

Keywords: Episyenite, metasomatism, Hakatajima Island

Mechanisms of Reaction-Induced Fracturing in Serpentine Carbonation; Insights from Hydrothermal Experiments and Geochemical Modeling

*Taiki Taiki¹, Masaoki Uno¹, Atsushi Okamoto¹

1. Tohoku University

Keywords: Carbonation, Carbon Mineralization, Serpentine, Reaction-induced fracturing

Poster presentation | R4: Mineral sciences of the Earth surface

📅 Fri. Sep 13, 2024 12:30 PM - 2:00 PM JST | Fri. Sep 13, 2024 3:30 AM - 5:00 AM UTC | 🏢 Entrance Hall Higashiyama Campus

R4: Mineral sciences of the Earth surface

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-01] Design and synthesis of aragonite particles as a reinforcement of plastic materials

*Hiroshi SAKUMA¹, Shigeru SUEHARA¹, Masumi KAMON¹, Kenji TAMURA¹ (1. NIMS)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-03] Experiments on the Inhibitory Effect of Polysaccharides on Cation Ordering of Dolomite During Dolomitization Reaction at 200°C: Preliminary Results

Hiromi KONISHI¹, *Yao Chen¹ (1. Niigata Univ. Sci.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-04] Formation Process of Carbonate Minerals in Non-aqueous Solvents: Consideration of the Effects of Different Hydration States of Cations

Naoki IWANE¹, *Jun KAWANO¹, Hiroyuki KAGI², Ayako SHINOZAKI¹, Takaya NAGAI¹ (1. Hokkaido Univ. Sci., 2. UTokyo Sci.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-05] Impact of evaporation on CO₂ mineralization during enhanced rock weathering

*Naoki NISHIYAMA¹, Masao SORAI¹, Keisuke FUKUSHI², Yuto NISHIKI¹ (1. National Institute of Advanced Industrial Science and Technology (AIST), 2. Kanazawa University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-06] Framboidal pyrite in modern stromatolite from Fukiage-Jigoku, Onikobe Spring, Miyagi, Japan

「発表賞エントリー」

*Tatsuya Kamada¹, Hiroaki Ohfuji¹ (1. Tohoku Univ. Sci.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R4-P-07] Observations of nano-texture for amosite asbestos by using high-resolution STEM imaging

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

Design and synthesis of aragonite particles as a reinforcement of plastic materials

*Hiroshi SAKUMA¹, Shigeru SUEHARA¹, Masumi KAMON¹, Kenji TAMURA¹

1. NIMS

Keywords: Calcium carbonate, Elastic modulus, Aspect ratio, Carbon dioxide

Experiments on the Inhibitory Effect of Polysaccharides on Cation Ordering of Dolomite During Dolomitization Reaction at 200°C: Preliminary Results

Hiromi KONISHI¹, *Yao Chen¹

1. Niigata Univ. Sci.

Dolomite is a mineral that consists of calcium-magnesium carbonate, with the chemical formula $\text{CaMg}(\text{CO}_3)_2$. The "dolomite problem" pertains to the challenge of understanding the significant variability in dolomite production over geological time periods and the difficulty of replicating dolomite formation under lab conditions, even though it has been found in surface environments in the past (e.g., Warren 2000). Recent research has shown that polysaccharides such as carboxymethyl cellulose (CMC), agar, and biomass can promote the formation of disordered dolomite at room temperature (e.g., Zhang et al., 2015; 2021). However, Wei and Konishi (submitted) discovered that CMC and agar inhibit the dolomitization reaction at 200°C, although the impact on cation ordering was not clear.

In our study, we are examining the impact of CMC on cation ordering during the dolomitization reaction at 200°C. The experiment involved heating two sets of solutions for varying durations. Both sets had a fixed concentration of Mg and Ca cations at 0.5M and a carbonate ion concentration of 0.1M. One set included 0.2g/L CMC, while the other set did not for comparison. The pH of the solutions was adjusted to 8 before heating. We measured the change in the ratio of 015 peak intensity to 110 peak intensity with different heating durations, which serves as an ordering index indicating the Ca and Mg ordering state in the dolomite structure. In 13 durations of the experiment, 6 showed significantly lower ordering index values with CMC, 6 had similar values, and 1 was higher without CMC. Overall, the trend indicated that the presence of CMC resulted in a lower ordering index in dolomite, suggesting an inhibitory effect on cation ordering.

Keywords: dolomite, Polysaccharides, dolomitization, Inhibitory Effect

Formation Process of Carbonate Minerals in Non-aqueous Solvents: Consideration of the Effects of Different Hydration States of Cations

Naoki IWANE¹, *Jun KAWANO¹, Hiroyuki KAGI², Ayako SHINOZAKI¹, Takaya NAGAI¹

1. Hokkaido Univ. Sci., 2. UTokyo Sci.

Keywords: calcium carbonate, hydration, polymorph, amorphous

Impact of evaporation on CO₂ mineralization during enhanced rock weathering

*Naoki NISHIYAMA¹, Masao SORAI¹, Keisuke FUKUSHI², Yuto NISHIKI¹

1. National Institute of Advanced Industrial Science and Technology (AIST), 2. Kanazawa University

Keywords: Enhanced rock weathering, CO₂ mineralization, Evaporation, Mafic rock, Dissolution

Framboidal pyrite in modern stromatolite from Fukiage-Jigoku, Onikobe Spring, Miyagi, Japan

*Tatsuya Kamada¹, Hiroaki Ohfuji¹

1. Tohoku Univ. Sci.

Keywords: Framboidal pyrite, stromatolite

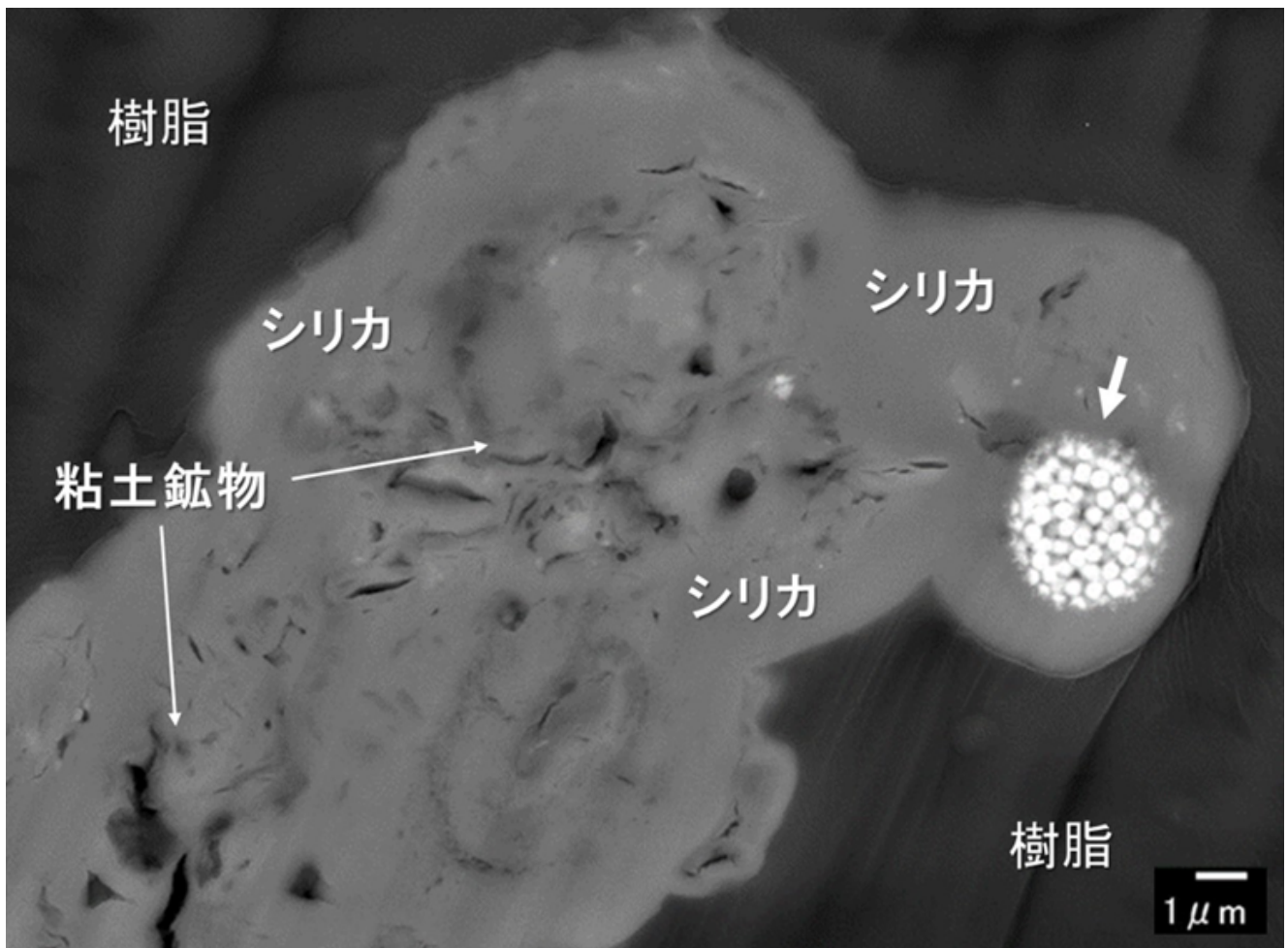


Figure. 1 Framboidal pyrite enclosed in amorphous silica (opal) in a modern stromatolite from Fukiage-onsen as indicated by the arrow

Observations of nano-texture for amosite asbestos by using high-resolution STEM imaging

*Hayato Miura¹, Ichiro Ohnishi¹

1. JEOL Ltd.

Keywords: Asbestos, TEM, STEM

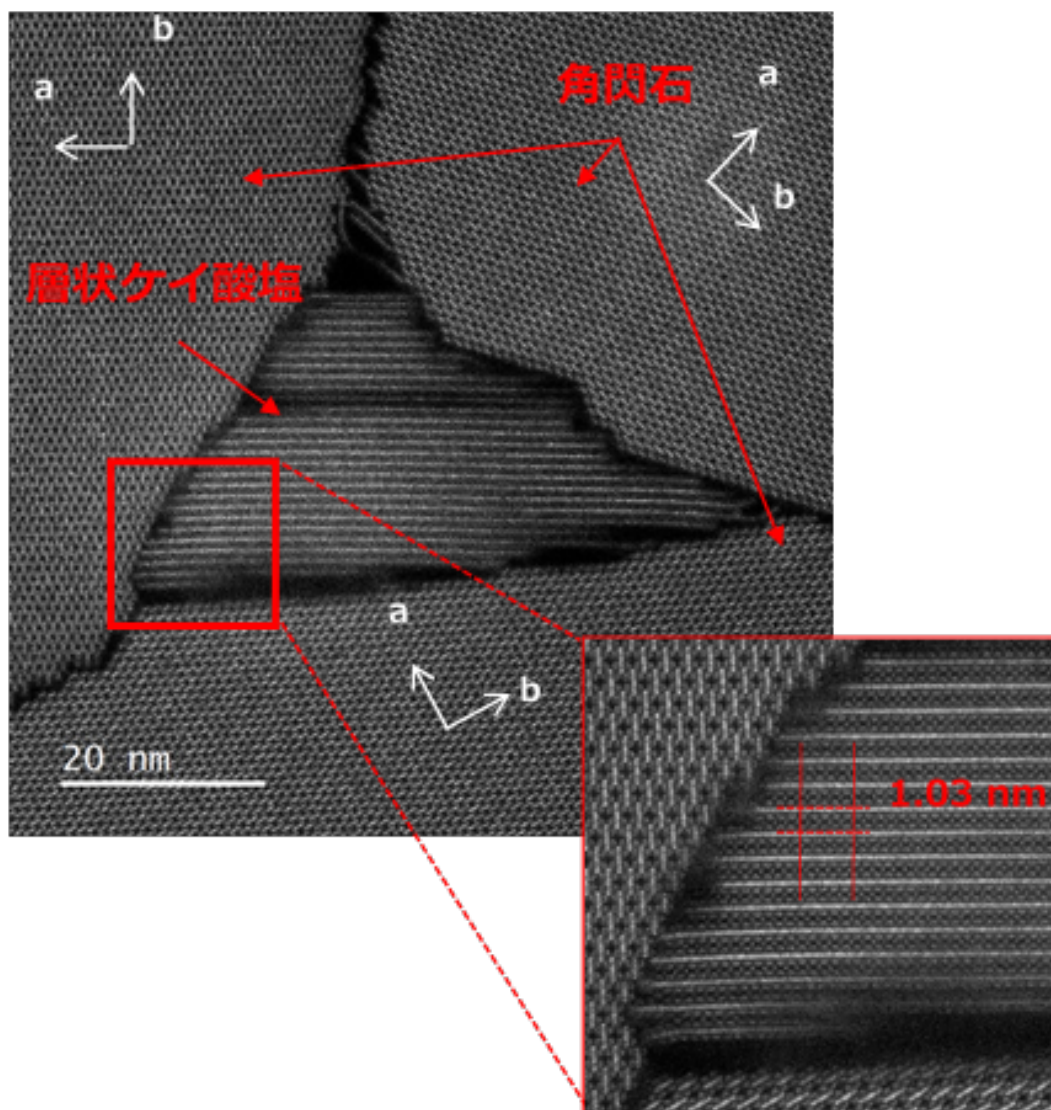


図 1 アモサイト石綿中に存在する層状ケイ酸塩の高分解能 ADF-STEM 像

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

📅 Fri. Sep 13, 2024 12:30 PM - 2:00 PM JST | Fri. Sep 13, 2024 3:30 AM - 5:00 AM UTC | 🏢 Entrance Hall Higashiyama Campus

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

岩石学，鉱物学，鉱床学，地球化学などの分野をはじめとして，地球・惑星物質科学全般にわたる岩石及び鉱物に関する研究発表を広く募集する。地球構成物質についての多様な研究成果の発表の場となることを期待する。

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-01] Ezochiite and placer deposit of platinum group minerals in northwestern Hokkaido, Japan

*Daisuke HAMANE¹, Katsuyuki Saito (1. The University of Tokyo)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-02] Review for Mineralogical Science: Mineral Resources, Heritage Stone, and SDGs

*Yuhei Takahashi¹ (1. NUE)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-03] Formation process of olivine with remarkable parting and apparently oblique extinction in the Iherzolite of Ochiai-Hokudo peridotite complex, Okayama Prefecture, Japan

*Terumi EJIMA¹, Takashima Chihiro², Arai Shoji³ (1. Shinshu University, 2. DAIYA SEIKI Co., Ltd., 3. Kanazawa University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-04] The effect of Na ion on carbonation reaction of forsterite

*Hiroki Hasegawa¹, Atsushi Kyono², Satoru Okada¹, Kosuke Yamaguchi¹ (1. Univ of Tsukuba, Grad. sch. of Life and Environmental. Sci, 2. Univ of Tsukuba, Life and Environmental Science)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-05] Mineralogical characteristics of Pothole Reef and Pseudo Merensky Reef at the western limb of the Bushveld Complex, South Africa

「発表賞エントリー」

*Amu Umesato¹, Takuya Echigo¹, Yasushi Watanabe¹ (1. Akita Univ. Int.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-06] High-Ti biotite in the alkali volcanic rock from the Akiyoshi Belt and its significance

*Kosuke Kimura¹, Kaushik Das², Yasutaka Hayasaka³ (1. Osaka Metro. Univ. Sci., 2. Hiroshima Univ., 3. Amakusa Mus. Goshoura Dinosaur Isl.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-07] Estimation of the origin of SDW in the Horoman peridotite complex by analysis of micro-inclusions in the olivine

「発表賞エントリー」

*Masaharu Aketa¹, Akira Miyake¹, Norikatsu Akizawa², Megumi Matsumoto³, Yohei Igami¹, Itaru Mitsukawa¹ (1. Kyoto University, 2. University of Tokyo, 3. Tohoku University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-08] Fe-Ni-S-As minerals in the Imono peridotite body, Besshi area, Niihama city, Ehime prefecture.

「発表賞エントリー」

*Masato Kuniyoshi¹, Satomi Enju¹ (1. Ehime Univ.Sci and Eng.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-09] Fluorite mineralization associated with alkaline metasomatism in the Jinmu-Mihara deposit, Hiroshima, Japan.

「発表賞エントリー」

*Masahiro SUNADA¹, Takuya Echigo¹, Yasushi Watanabe¹ (1. Akita Univ. IRS.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-10] Petrological study of ultramafic rocks from the Kiyama area, eastern Kumamoto City Narumichi Nishio¹, *Satoko ISHIMARU² (1. Kumamoto Univ. Sci., 2. Kumamoto Univ. FAST)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-11] FLUID INCLUSION STUDIES IN QUARTZ VEINS WITH TIN MINERALIZATION IN THE KIBARAN INTRUSIVE ROCKS IN KALEHE (SOUTH KIVU, DR CONGO)

「発表賞エントリー」

*MUSA Moise-Kam's SAIDI¹, MADDHUSOODHAN Satish Kumar¹ (1. Niigata Univ.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-12] Depleted peridotite and melt reaction as recorded by layered dunite-harzburgite in the Horoman peridotite, Hidaka Metamorphic Belt, Hokkaido, Japan.

「発表賞エントリー」

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

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R7-P-13] Research and development for the exploration of unknown cosmic ray events using Paleo-Detector

*Yuki Ido¹, Tatsuhiro Naka², Shota Futamura³, Tohma Ori⁴, Takenori Kato⁵ (1. Nagoya Univ. Env., 2. Toho Univ. Sci, 3. Nagoya Univ. Sci., 4. N.I.T. Suzuka, 5. Nagoya Univ. ISEE)

Ezochiite and placer deposit of platinum group minerals in northwestern Hokkaido, Japan

*Daisuke HAMANE¹, Katsuyuki Saito

1. The University of Tokyo

Placer deposits of platinum-group minerals (PGM) were once distributed along the central axis of Hokkaido, but due to overhunting during the war, it has become difficult to collect. On the other hand, the several PGM placer deposits have been discovered in northwestern Hokkaido. In this study, we report on the PGM placer deposits in northwestern Hokkaido and the new thiospinel group mineral ezochiite (IMA2022-101) discovered there. Most of placers consist of rutheniridosmine, osmium, iridium, and osmium, while small amount of isoferroplatinum is included. Isoferroplatinum-based grains contain a variety of inclusions, including ezochiite, which is included as a spherical aggregate with other sulfide minerals, suggesting that ezochiite crystallized from melt trapped by isoferroplatinum. The empirical formula of ezochiite is $(\text{Cu}^{+}_{0.85}\text{Fe}^{3+}_{0.15})(\text{Rh}^{3+}_{1.09}\text{Pt}^{4+}_{0.78}\text{Ir}^{3+}_{0.08}\text{Pt}^{2+}_{0.05})\text{S}_{4.00}$, ideally $\text{Cu}^{+}(\text{Rh}^{3+}\text{Pt}^{4+})\text{S}_4$. The unit cell parameter is $a = 9.8559(14) \text{ \AA}$ on Fd-3m space group. Ezochiite was confirmed in ophiolites, Ural-Alaskan intrusions, and orthomagmatic deposits, suggesting that ezochiite is a common mineral in PGM deposit.

Keywords: Platinum-group minerals (PGM), Placer PGM, Ezochiite

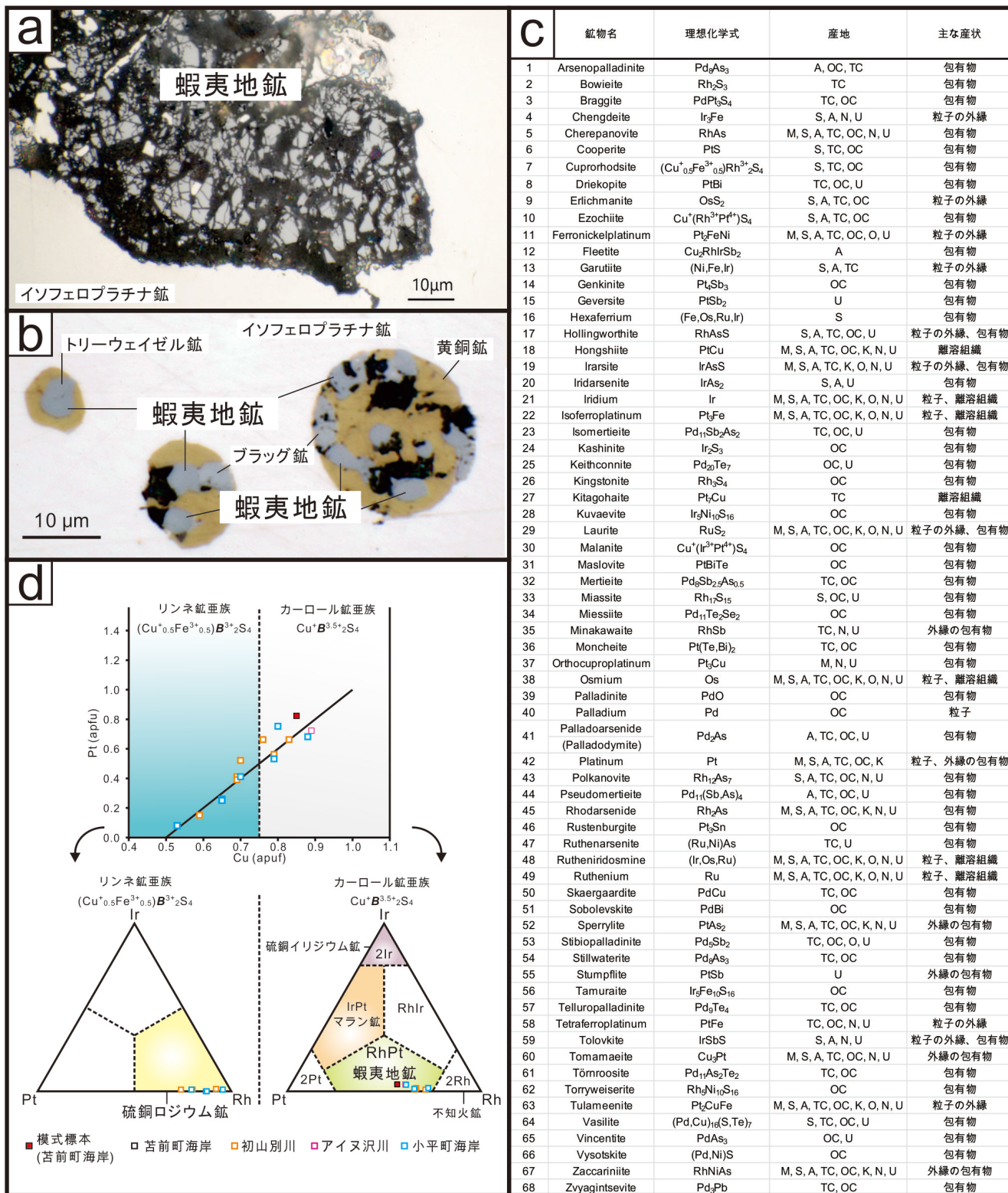


図1. 模式標本の蝦夷地鉱 (苫前町海岸) (a)、初山別川試料の蝦夷地鉱 (b)、これまでに確認された白金族鉱物と主な産状 (c)、北海道産試料の硫銅ロジウム鉱—蝦夷地鉱の組成分布と鉱物分類 (d)。産地：茂初山別川 (M)、初山別川 (S)、アイヌ沢川 (A)、苫前町海岸 (TC)、小平町海岸 (OC)、上記念別沢川 (K)、小平薬川 (O)、沼田ポン川 (N)、雨竜川 (U)

Review for Mineralogical Science: Mineral Resources, Heritage Stone, and SDGs

*Yuhei Takahashi¹

1. NUE

Keywords: Mineral Resources, Heritage Stone

Formation process of olivine with remarkable parting and apparently oblique extinction in the Iherzolite of Ochiai-Hokudo peridotite complex, Okayama Prefecture, Japan

*Terumi EJIMA¹, Takashima Chihiro², Arai Shoji³

1. Shinshu University, 2. DAIYA SEIKI Co., Ltd., 3. Kanazawa University

Keywords: Ochiai-Hokudo, peridotite complex, olivine

The effect of Na ion on carbonation reaction of forsterite

*Hiroki Hasegawa¹, Atsushi Kyono², Satoru Okada¹, Kosuke Yamaguchi¹

1. Univ of Tsukuba, Grad. sch. of Life and Environmental. Sci, 2. Univ of Tsukuba, Life and Environmental Science

Keywords: Forsterite, Magnesite, Carbonation, Geological Carbon Storage

Mineralogical characteristics of Pothole Reef and Pseudo Merensky Reef at the western limb of the Bushveld Complex, South Africa

*Amu Umesato¹, Takuya Echigo¹, Yasushi Watanabe¹

1. Akita Univ. Int.

Keywords: Bushveld Complex, Platinum Group Elements, Merensky Reef, Monosulfide Solid Solution, Intermediate Solid Solution

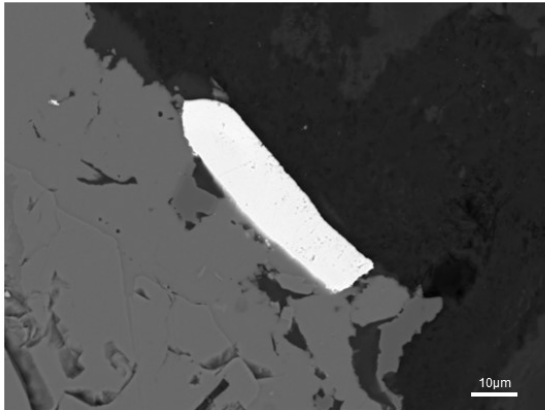


Fig. 1. Moncheite (white) formed on the rim of Nickel sulfide minerals (gray) in Pothole Reef. BSE image.

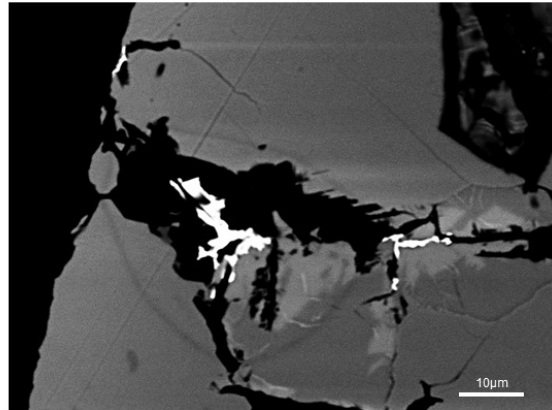


Fig. 2. Zvyagintsevite (white) formed on the rim of pentlandite (gray), in Pseudo Merensky Reef. BSE image.

High-Ti biotite in the alkali volcanic rock from the Akiyoshi Belt and its significance

*Kosuke Kimura¹, Kaushik Das², Yasutaka Hayasaka³

1. Osaka Metro. Univ. Sci., 2. Hiroshima Univ., 3. Amakusa Mus. Goshoura Dinosaur Isl.

Keywords: Akiyoshi Belt, Greenstone, Zircon U-Pb age, High titanium biotite

Estimation of the origin of SDW in the Horoman peridotite complex by analysis of micro-inclusions in the olivine

*Masaharu Aketa¹, Akira Miyake¹, Norikatsu Akizawa², Megumi Matsumoto³, Yohei Igami¹, Itaru Mitsukawa¹

1. Kyoto University, 2. University of Tokyo, 3. Tohoku University

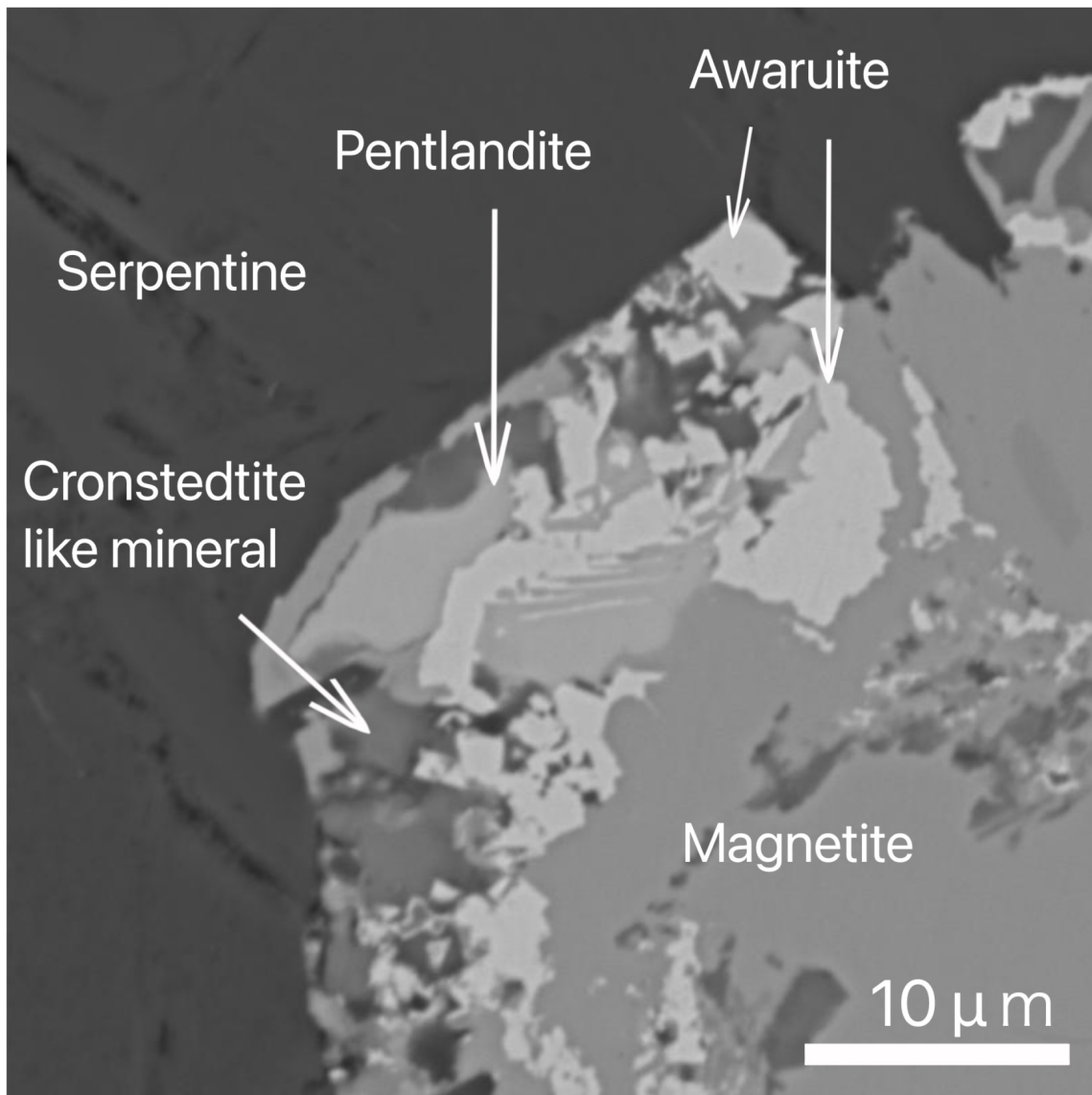
Keywords: Horoman peridotites, olivine, inclusion, Electron Microscope, XnCT

Fe-Ni-S-As minerals in the Imono peridotite body, Besshi area, Niihama city, Ehime prefecture.

*Masato Kuniyoshi¹, Satomi Enju¹

1. Ehime Univ.Sci and Eng.

Keywords: Fe-Ni-S-As mineral, Serpentinite, Peridotite, Imono peridotite body



図：蛇紋岩中の磁鉄鉱，ペントランド鉱，アワルワ鉱，クロンステッドタイト様鉱物の共生組織

Fluorite mineralization associated with alkaline metasomatism in the Jinmu-Mihara deposit, Hiroshima, Japan.

*Masahiro SUNADA¹, Takuya Echigo¹, Yasushi Watanabe¹

1. Akita Univ. IRS.

Keywords: Fluorite, Alkali (Na-K) metasomatism, Jinmu-Mihara deposit

Petrological study of ultramafic rocks from the Kiyama area, eastern Kumamoto City

Narumichi Nishio¹, *Satoko ISHIMARU²

1. Kumamoto Univ. Sci., 2. Kumamoto Univ. FAST

Keywords: Serpentinite, Dunite, Chromian spinel, Kiyama metamorphic rock

FLUID INCLUSION STUDIES IN QUARTZ VEINS WITH TIN MINERALIZATION IN THE KIBARAN INTRUSIVE ROCKS IN KALEHE (SOUTH KIVU, DR CONGO)

*MUSA Moise-Kam's SAIDI¹, MADDHUSOODHAN Satish Kumar¹

1. Niigata Univ.

The Mesoproterozoic Kibaran granitoid formations host numerous mineral resources which are highly demanded in new technology industries, mineral such as Sn-W, Nb, Ta and Au. This mobile belt is formed by collision of the Western Congo with the Eastern Tanzanian, Bangwelu and Zimbabwe cratons, producing four generations of granite. These ore deposits are hosted in granite pegmatite (Nb, Ta) and Sn-W in quartz veins.

Fluid inclusions were studied in quartz vein samples in order to unravel the evolution of the mineralizing fluid controlling the ore deposits in Kalehe(DR Congo). In the study area the field and petrographic studies indicate that major rocks constitute of a variety of metapelites including sericite schists, micas schists, quartzites and igneous rocks such as granites, greisens and pegmatites. The quartz veins crosscutting the metapelite show a NE-SW trending, whereas the pegmatitic vein trend in a NW-SE direction crosscutting the Kibaran metasediments.

Fluid inclusions are abundant in quartz veins and metallic mineralized quartz veins. Primary, secondary and pseudo secondary inclusion are observed, in which the biphasic inclusions are most common. The mineralizing fluids of the quartz-vein in the sericite schist have a heterogeneous nature at the time of trapping. The temperature of homogenization(T_h) and salinities of the fluid inclusions were determined; some were having high T_h with high salinity, others were with high T_h but with low salinity, whereas another group have low T_h with moderate salinity. The biphasic Inclusions homogenization temperature range is 17.7- 303°C and the salinity range is 0.88-16.24°Wt%. The temperature of first ice melting(T_{mice}) values obtained so far from fluid inclusion microthermometry indicate various fluid compositions mainly CO₂, CO₂ + H₂O rich, CO₂+H₂O+/-CH₄. These phases were confirmed by Raman spectroscopy and consistent with T_{mice} as well as the freezing point depression indicating the presence of salt (NaCl or other salts).

The mineralizing fluids trapped as fluid inclusions in the metallic quartz veins crosscutting shale formations can also be categorized as primary, secondary and pseudo secondary, these fluids were multiphase fluid inclusion (solid, liquid and vapor). Detailed studies on these inclusions are being carried out and will be presented.

Keywords: Fluid inclusion, microthermotry, Kibaran mobile belt, Tin, Raman spectroscopy

Depleted peridotite and melt reaction as recorded by layered dunite-harzburgite in the Horoman peridotite, Hidaka Metamorphic Belt, Hokkaido, 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, Horoman, banded dunite-harzburgite, melt-rock reaction, chemical composition

Research and development for the exploration of unknown cosmic ray events using Paleo-Detector

*Yuki Ido¹, Tatsuhiro Naka², Shota Futamura³, Tohma Ori⁴, Takenori Kato⁵

1. Nagoya Univ. Env., 2. Toho Univ. Sci, 3. Nagoya Univ. Sci., 4. N.I.T. Suzuka, 5. Nagoya Univ. ISEE

Keywords: Muscovite, Olivine, Particle physics

Poster presentation | R8: Metamorphic rocks and tectonics

📅 Fri. Sep 13, 2024 12:30 PM - 2:00 PM JST | Fri. Sep 13, 2024 3:30 AM - 5:00 AM UTC | 🏢 Entrance Hall Higashiyama Campus

R8: Metamorphic rocks and tectonics

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-01] Mineralogical characterization of serpentinite varieties in Sangun-Renge Belt exposed at Sasaguri, Fukuoka Prefecture, and their geological implications

「発表賞エントリー」

*Swarnaa ANNADURAI MUNUSAMY¹, Jun-ichi ANDO^{1,2}, Yuki IWASAKI³, Kaushik DAS^{1,2}, Dyuti Prakash SARKAR⁴, Seiichiro UEHARA⁵ (1. Hiroshima Univ., 2. HiPeR, Hiroshima, 3. NIPPON STEEL CORP., 4. JAMSTEC, 5. The Kyushu Univ. Museum)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-02] Metamorphic temperature structure of Sanbagawa Metamorphic Belt in the southern part of Shinshiro City, Aichi Prefecture, Japan

「発表賞エントリー」

*Akane Matsuzaki¹, Yui Kouketsu¹, Katsuyoshi Michibayashi¹ (1. Nagoya Univ. Env.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-03] Origin and pyrometamorphism of gneissose granitoid xenoliths from Mt. Daisen, Tottori Prefecture, SW Japan

「発表賞エントリー」

*Mizuki TAKAHASHI¹, Shunsuke Endo¹ (1. Shimane University)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-04] Petrography of monazite in a metapelite in the eastern Nepal Himalaya and Development of Th-Pb dating method for monazite

「発表賞エントリー」

*Shumpei KUDO¹, Tetsuo Kawakami¹, Sota Niki², Toru Nakajima³, Takafumi Hirata⁴, Takeshi Imayama⁵ (1. Kyoto Univ. Sci., 2. Nagoya Univ. ISEE., 3. JAEA, 4. UTokyo. Sci., 5. Okayama Univ. of Sci.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-05] Petrological description of ultramafic rocks in the low-grade metamorphic zone of the Sanbagawa belt: A case study of the Ina area, Nagano Prefecture, central Japan

「発表賞エントリー」

*Kaho Nobuhara¹, Hiroshi Mori¹, Takayoshi Nagaya² (1. Shinshu Univ. , 2. Tokyo Gakugei Univ.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-06] Detrital zircon U–Pb dating and Raman spectral analysis of carbonaceous material in the boundary area of the Sanbagawa–Chichibu belts, central Kii Peninsula

*Hiroshi MORI¹, Kojiro USUI^{1,2}, Tetsuya Tokiwa¹, Kazuhiro Ozawa³ (1. Shinshu University, 2. Nippon Koei Co., Ltd., 3. Precision Forestry Measurement Ltd.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-07] New finding of wakefieldite from an amphibolite in the Horokanai area, Kamuikotan HP metamorphic belt, Hokkaido, Japan

*Taro Kato¹, Kosuke NAEMURA¹, Toru Takeshita² (1. Iwate University, 2. Pacific Consultants Co., Ltd.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-08] Thermal history and protolithic detritus provenance of a sillimanite–chrysoberyl-bearing gneiss from the Ashio mountains in the western part of Tochigi prefecture

*Ippei KITANO¹ (1. Hokkaido Univ. Mus.)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-09] Petrological characterization and geochronology of metamorphic rocks from the Northern Subzone of the Maizuru Terrane

*Sota Muroi¹, Kaushik Das¹, Kenta Kawaguchi¹, Yasutaka Hayasaka² (1. Hiroshima University, 2. Amakusa Museum of Goshoura Dinosaur Island)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-10] The fate of organic carbon during subduction: Raman micro-spectroscopy and C-isotope geochemistry of carbonaceous materials in Sambagawa pelitic schists, central Shikoku, Japan

*Hironobu Harada¹, Tatsuki Tsujimori¹, Akizumi Ishida¹, Takeshi Kakegawa¹, Tetsumaru Itaya² (1. Tohoku Univ., 2. jGnet)

12:30 PM - 2:00 PM JST | 3:30 AM - 5:00 AM UTC

[R8-P-11] Fluid inclusions of ophicarbonates in the Apennine Mountains, Italy

Hiroyuki Kaneko¹, *Tatsuhiko KAWAMOTO¹, Francesca Meneghini², Yosuke Osawa¹ (1. Shizuoka University, 2. Università di Pisa | UNIPI · Department of Earth Sciences)

Mineralogical characterization of serpentinite varieties in Sangun-Renge Belt exposed at Sasaguri, Fukuoka Prefecture, and their geological implications

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Serpentinite (serp) of Sangun-Renge Belt are widely exposed around the Narubuchi dam in Sasaguri area, Fukuoka Prefecture. The purpose of this study is to investigate the mineralogical characteristics of different types of serp in this region in order to understand the tectonic and metamorphic history of the Sangun-Renge Belt serp. Optical microscopy reveals the petrographic characteristics, EPMA is used to measure the composition of Cr-spinel, and Raman spectroscopy is utilized to distinguish serpentine polymorphs. The serp in the Sasaguri area primarily consists of serpentine group minerals, with minor amounts of magnetite, calcite, chlorite, talc, and Cr-spinel. Three types are identified on the basis of their dominant serpentine polymorph. Type 1: Lizardite serp, showing the hourglass textures with chrysotile veins. Type 2: Lizardite-Chrysotile serp, dominated by a mesh texture where the core and rim minerals are lizardite and chrysotile, and lizardite, respectively. And the antigorite (atg) veins are observed. Type 3: Atg serp, exposed to the north and south of the study area. Their microstructures are different. The serp in the north is composed of atg a few mm in grain size, showing undulose extinction and dynamic recrystallization, but no CPO. The serp in the south is composed of atg less than 200 μm in size, with atg veins. At the north, the mylonitized zones can be identified where the atg grain size is less than 100 μm , with (001) and [010] oriented parallel to foliation and lineation, respectively. The chemical composition of the Cr-spinel in the north serp indicates a forearc peridotite origin. The ferritchromite rim in the Cr-spinel suggests that the peridotite is re-equilibrated at greenschist to amphibolite temperatures (400-700°C). A magnetite overgrowth around the ferritchromite rim indicates the serpentinization after ferritchromitization, which occurs at 250-400°C. Based on the above results, the geological implications of the identified serpentine polymorphs and associated mineral assemblages for understanding the tectonic and metamorphic history of the Sangun-Renge Belt serp will be discussed in our presentation.

Keywords: Serpentinization, Antigorite, Serpentine polymorphs, Cr-spinel

Metamorphic temperature structure of Sanbagawa Metamorphic Belt in the southern part of Shinshiro City, Aichi Prefecture, Japan

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Keywords: Quartz, Raman carbonaceous material geothermometer, Sanbagawa Metamorphic Belt

Origin and pyrometamorphism of gneissose granitoid xenoliths from Mt. Daisen, Tottori Prefecture, SW Japan

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Keywords: Mt. Daisen, xenolith, pyrometamorphism

Petrography of monazite in a metapelite in the eastern Nepal Himalaya and Development of Th-Pb dating method for monazite

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Keywords: Monazite, Th-Pb dating method, Higher Himalayan Crystallines

Petrological description of ultramafic rocks in the low-grade metamorphic zone of the Sanbagawa belt: A case study of the Ina area, Nagano Prefecture, central Japan

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Keywords: Sanbagawa (Sambagawa) belt, ultramafic rock, chlorite zone, Ina area

Detrital zircon U–Pb dating and Raman spectral analysis of carbonaceous material in the boundary area of the Sanbagawa–Chichibu belts, central Kii Peninsula

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Keywords: Sanbagawa Belt, Chichibu Belt, detrital zircon U–Pb dating, Raman spectral analysis, carbonaceous material

New finding of wakefieldite from an amphibolite in the Horokanai area, Kamuikotan HP metamorphic belt, Hokkaido, Japan

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Kamuikotan amphibolite exposed at the Horokanai area experienced transformation from amphibolite to blueschist facies metamorphism. Similar occurrences are found throughout the world, and it is generally regarded as a result of an isobaric cooling (counterclockwise) pathway. In other words, amphibolite is thought to have remained at depth and experienced cooling. To address this issue, we studied an epidote amphibolite exposed at the Horokanai hill. The rock displays a foliation consisting of hornblende/actinolite, epidote, plagioclase, rutile, white mica (Si=3.3-3.5 apfu, O=11) ±chlorite, and these primary minerals are more or less replaced by secondary blueschist facies minerals along pull apart fractures and rims of primary minerals. The latter consists of glaucophane, chlorite, titanite, epidote, pumpellyite, and white mica (Si=3.5-3.8 apfu, O=11). Yttrium vanadate (wakefieldite) grains occur along pull apart fractures of epidote and hornblende, and the remaining fractures were filled by phengite rich white mica. This suggests wakefieldite was formed before or during blueschist facies metamorphism. According to previous studies, wakefieldite could be stable under ultraoxidation conditions at shallow depths. Following this idea, it is unlikely that the Kamuikotan amphibolite was transformed into blueschist by isobaric cooling at depth, but rather once exhumed to shallow depth and sunk back to the depth.

Keywords: Kamuikotan metamorphic belt, yttrium vanadate, wakefieldite-(Y), P-T-t path

Thermal history and protolithic detritus provenance of a
sillimanite–chrysoberyl-bearing gneiss from the Ashio mountains in the
western part of Tochigi prefecture

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Keywords: sillimanite–chrysoberyl-bearing gneiss, andalusite-bearing granite, thermal history, detritus
provenance, Ashio mountains

Petrological characterization and geochronology of metamorphic rocks from the Northern Subzone of the Maizuru Terrane

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Keywords: Maizuru Terrane, Northern Subzone, Komori-Kuwagai metamorphic rocks, P-T estimates, CHIME age of monazite

The fate of organic carbon during subduction: Raman micro-spectroscopy and C-isotope geochemistry of carbonaceous materials in Sambagawa pelitic schists, central Shikoku, Japan

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Keywords: carbonaceous materials, carbon isotope, Raman micro-spectroscopy, Sambagawa Belt, pelitic schist

Fluid inclusions of ophicarbonates in the Apennine Mountains, Italy

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The Bracco ophicarbonate from the Apennines, Italy, is studied for petrography and microthermometry of fluid inclusions in the calcite. The studied serpentinite body is a part of an ophiolite that has undergone relatively low grade metamorphism, considered to be pumpellyite facies, and retains hydrothermal metamorphic vein textures and seafloor depositional textures that may record interactions with Jurassic seawater and mantle peridotite/ serpentinite (Cannao et al., 2020, in Chemical Geology).

Raman spectroscopy and micro-XRF analysis indicate that the rocks are mainly composed of antigorite, lizardite, and calcite. We performed microthermometry of saline fluid inclusions in relatively large crystals of calcite veins. Other fine-grained calcite crystals also exist, but microthermometry of their fluid inclusions has been difficult up to now. We also have sedimentary ophicarbonate (Cannao et al., 2020) in the same outcrop, and we would like to obtain data on these fluid inclusions in the future.

Microthermometry results show that the salinity estimated from freezing point depression is 5.0 ± 1.8 NaCl wt% (n=9) and the homogenization temperature between gas and liquid phases is $179 \pm 16^\circ\text{C}$ (n=9). The salinity varies from 1 to 8 NaCl wt% within a thin section, and even within a crystal there are 3 NaCl wt% variations, indicating that saline fluids with such degrees of variation existed during the carbonation of the serpentinite.

We would like to discuss the carbonation process of serpentinite at the seafloor by comparing the salinity and homogenization temperature of fluid inclusions in calcite in ophiolites from low grade metamorphic regions in the Western Alps reported by Inukai et al. (2023, Mineralogical Society Abstracts) and other previous studies.

Keywords: fluid inclusions, serpentinite, seawater, carbon dioxide, ophicarbonate

