Sat. Sep 14, 2024

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

9:00 AM - 12:00 PM JST | 12:00 AM - 3:00 AM UTC | ES Hall Higashiyama Campus

R6: Plutonic rocks, volcanic rocks and subduction factory

Chairperson:Tatsuhiko Kawamoto(Shizuoka University), Takashi Yuguchi, Atsushi Kamei

9:00 AM - 9:15 AM JST | 12:00 AM - 12:15 AM UTC

[R6-01] Compositional evolution of slab-derived fluids during ascent and origin of subduction-zone primary magmas: Implications from trace-element partition between hydrous melts and Cl-free or Cl-rich aqueous fluids

*Hajime TANIUCHI[1], Tatsuhiko KAWAMOTO[2], Takayuki NAKATANI[1], Osamu ISHIZUKA[1], Toshihiro SUZUKI[1], Akihiko Tomiya[1] (1. GSJ, AIST, 2. Shizuoka Univ.)

9:15 AM - 9:30 AM JST | 12:15 AM - 12:30 AM UTC

[R6-02] New crust and mantle physical properties research from the development of rock synthesis methods

「招待講演」

*Sanae Koizumi[1] (1. The University of Tokyo)

9:30 AM - 9:45 AM JST | 12:30 AM - 12:45 AM UTC

[R6-03] The use of contact metamorphism to identify plutons associated with major contemporaneous eruption and estimate magma flux

*Simon R WALLIS[1], Ken Yamaoka[2], Akira Miyake[3], Catherine Annen[4] (1. The University of Tokyo, 2. AIST, 3. Aichi University of Education, 4. Institute of Geophysics, Czech Academy of Sciences)

9:45 AM - 10:00 AM JST | 12:45 AM - 1:00 AM UTC

[R6-04] Petrography and geochronology of the Kuki granite, Kitakami Mountains, northeastern Japan: Shallow crustal intrusion and emplacement processes of granitic magma

*Satoshi SUZUKI[1], Takashi YUGUCHI[2], Keito ISHIGURO[1], Kyoka ENDO[1], Asuka KATO[1], Kosuke YOKOYAMA[1], Yasuhiro OGITA[3], Tatsunori YOKOYAMA[3], Shuhei SAKATA[4], Takeshi OHNO[5], Eiji SASAO[3] (1. Yamagata University, 2. Kumamoto University, 3. Japan Atomic Energy Agency, 4. University of Tokyo, 5. Gakushuin University)

10:00 AM - 10:15 AM JST | 1:00 AM - 1:15 AM UTC

[R6-05] Zircon U-Pb dating of granitoids in the Hobenzan area, western Yamaguchi Prefecture, southwest Japan

*Yukiyasu TSUTSUMI[1], Kenichiro TANI[1] (1. National Museum of Nature and Science)

10:15 AM - 10:30 AM JST | 1:15 AM - 1:30 AM UTC

[R6-06] Estimation of temperature and pressure conditions of granitoids in the eastern part of Shimane Prefecture, San'in Belt.

*Kai Nakahashi[1], Satoshi SAITO[1] (1. Ehime University Graduate School of Science and Engineering, Earth Science Division)

10:30 AM - 10:45 AM JST | 1:30 AM - 1:45 AM UTC

[R6-07] Primary magma of Cretaceous Northern Kyushu batholith: New approach from Cumulus rocks

*Keisuke ESHIMA[1], Masaaki OWADA[1], Atsushi KAMEI[2] (1. Yamaguchi Univ. Sci. , 2. Shimane Univ.)

10:45 AM - 11:00 AM JST | 1:45 AM - 2:00 AM UTC

[R6-08] Origin of the Cretaceous ignimbrite flare-up in SW Japan

*Ken Yamaoka[1], Tokiyuki Morohoshi[2], Daisuke Sato[1], Kazuto Mikuni[1] (1. AIST, 2. Univ. Tokyo. Sci.)

11:00 AM - 11:15 AM JST | 2:00 AM - 2:15 AM UTC

[3Lecture-101-11-9add] 休憩

11:15 AM - 11:30 AM JST | 2:15 AM - 2:30 AM UTC

[R6-09] The genesis of garnet in the Quaternary rhyolite of Hime-shima volcanic group, EEast Kyushu, Southwest Japan Arc.

*Takehiro HIRAYAMA[1,2], Tomoyuki SHIBATA[2], Masako YOSHIKAWA[2] (1. Tokyo University, 2. Hiroshima University)

11:30 AM - 11:45 AM JST | 2:30 AM - 2:45 AM UTC

[R6-10] K–Ar ages and geochemical compositions of Early Pleistocene andesites from southern Kyushu, Japan

*Raiki YAMADA[1], Masakazu Niwa[1], Koji Umeda[2], Koshi Yagi[3], Taisei Fujiwara[3], Ikuo Okada[3], Fukuka Kida[1] (1. Japan Atomic Energy Agency, 2. Hirosaki University, 3. Hiruzen Institute for Geology and Geochronology)

11:45 AM - 12:00 PM JST | 2:45 AM - 3:00 AM UTC

[R6-11] Thermal history of pluton formation from Sr diffusion in plagioclase: implications for magma flux estimation and identification of plutons associated with major eruptions

「発表賞エントリー」

*Tokiyuki Morohoshi[1], Simon Richard Wallis[1] (1. The University of Tokyo)

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

9:00 AM - 12:00 PM JST | 12:00 AM - 3:00 AM UTC | ES024 Higashiyama Campus

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

Chairperson:Fumiya Noritake, Mariko Nagashima, Makoto Tokuda

9:00 AM - 9:20 AM JST | 12:00 AM - 12:20 AM UTC

[R2-01] Changes of physical and structural properties of hydrous minerals induced by dehydration of coordinated water molecules

「招待講演」

*Ryo YAMANE[1] (1. Tohoku University)

9:20 AM - 9:35 AM JST | 12:20 AM - 12:35 AM UTC

[R2-02] Phase change of priceite $Ca_2B_5O_7(OH)_5 \cdot H_2O$ during thermal decomposition

*Atsushi KYONO[1], Kosuke Yamaguchi[1], Satoru Okada[1], Hiroki Hasegawa[1] (1. Life & Environmental Sciences, University of Tsukuba)

9:35 AM - 9:50 AM JST | 12:35 AM - 12:50 AM UTC

[R2-03] The incorporation mechanisms of water in aluminous orthoenstatite clarified via comprehensive NMR measurements and first-principles calculations

*Xianyu XUE[1], Masami Kanzaki[1], Rongzhang Yin[2] (1. Okayama University, 2. Peking University)

9:50 AM - 10:05 AM JST | 12:50 AM - 1:05 AM UTC

[R2-04] Evaluation of the influence of polishing condition on hydrogen diffusion in fluorapatite and estimation of the diffusion mechanism

「発表賞エントリー」

*Chikashi Yoshimoto[1], Isao Sakaguchi[2], Shoichi Itoh[1] (1. Kyoto University, 2. NIMS)

10:05 AM - 10:20 AM JST | 1:05 AM - 1:20 AM UTC

[R2-05] Evaporation kinetics of forsterite in low-pressure H_2-H_2O atmosphere

「発表賞エントリー」

*Shiori Inada[1], Shogo Tachibana[1] (1. The University of Tokyo)

10:20 AM - 10:30 AM JST | 1:20 AM - 1:30 AM UTC

[3Lecture-201-11-6add] 休憩

10:30 AM - 10:45 AM JST | 1:30 AM - 1:45 AM UTC

[R2-06] Origine of framboidal goethite in sandstone in the Saiki Subgroup of the Lower Shimanto Group

*Hiroaki OHFUJI[1], Seira Konishi[1], Hiroshi Yamamoto[2] (1. Tohoku Univ. Sci, 2. Kagoshima Univ. Sci)

10:45 AM - 11:00 AM JST | 1:45 AM - 2:00 AM UTC

[R2-07] Precursor phenomenon of ultrananolite crystallization: liquid immiscibility in the volcanic glass

*Mayumi Mujin[1], Keiko Matsumoto[2], Akira Miyake[3], Yohei Igami[3], Michihiko Nakamura[1], Akihiko Yokoo[3], Mitsuhiro Yoshimoto[4] (1. Tohoku University, 2. National Institute of Advanced Industrial Science and Technology (AIST), 3. Kyoto University, 4. Mount Fuji Research Institute, Yamanashi Prefectural Government)

11:00 AM - 11:15 AM JST | 2:00 AM - 2:15 AM UTC

[R2-08] Calorimetric constraint of cation disordering enthalpy in $MgAl_2O_4$ spinel

*Hiroshi KOJITANI[1], Ryuji Matsuki[1], Yuta Nishimura[1], Itaru Ohira[1] (1. Gakushuin University)

11:15 AM - 11:30 AM JST | 2:15 AM - 2:30 AM UTC

[R2-09] Solid solubilities of Na^+ and K^+ in perovskite type $SrTiO_3$

Ryogo KITAI[2], *Takaya NAGAI[1], Jun KAWANO[1], Ayako Shinozaki[1] (1. Hokkaido Univ. Faculty SCi., 2. Hokkaido Univ. School SCi.)

11:30 AM - 11:45 AM JST | 2:30 AM - 2:45 AM UTC

[R2-10] Study on the consistency of Li conductivity measurements of (Li,La)TiO_3 with perovskite structure and Li migration during SIMS measurements

*Isao SAKAGUCHI[1], Tsuyoshi Onishi[1] (1. National Institute for Materials Science)

11:45 AM - 12:00 PM JST | 2:45 AM - 3:00 AM UTC

[R2-11] Structure transition mechanism under high pressure of Fe-Ti-0 system phases

*Takamitsu YAMANAKA[1,2], Takanori Hattori[3], Ho-kwang Mao[1] (1. Center for High Pressure Science and Technology Advanced Research, 2. Graduate School of Science Osaka University, 3. J-PARC)

Oral presentation | R5: Extraterrestrial materials

9:00 AM - 12:00 PM JST | 12:00 AM - 3:00 AM UTC | ES025 Higashiyama Campus

R5: Extraterrestrial materials

Chairperson:Megumi Matsumoto, Daiki Yamamoto, Yusuke Seto, Toru Matsumoto(Kyoto University)

9:00 AM - 9:15 AM JST | 12:00 AM - 12:15 AM UTC

[R5-01] Revealing Chemical Compositional Variety of Amorphous Silicate Dust around AGB Stars by Condensation Experiment and Spectroscopic Analysis

「発表賞エントリー」

*Hanako Enomoto[1], Aki Takigawa[1], Hiroki Chihara[2], Chiyoe Koike[2] (1. UTokyo, 2. Osaka Sangyo univ.)

9:15 AM - 9:30 AM JST | 12:15 AM - 12:30 AM UTC

[R5-02] Formation process of circumstellar dust studied from presolar oxides in carbonaceous chondrite DOM 08006.

「発表賞エントリー」

*Hiroyuki Hashizume[1], Aki Takigawa[1] (1. UTokyo EPSS)

9:30 AM - 9:45 AM JST | 12:30 AM - 12:45 AM UTC

[R5-03] Progress of irreversible chemical reactions on dust moving in a protoplanetary disk

*Lily Ishizaki[1], Shogo Tachibana[1] (1. UT EPS)

9:45 AM - 10:00 AM JST | 12:45 AM - 1:00 AM UTC

[R5-04] Experimental study of the effect of evaporation during temperature rise on type B CAI formation

「発表賞エントリー」

*Yasuaki Tsuruoka[1], Shogo Tachibana[1] (1. UTokyo Sci.)

10:00 AM - 10:20 AM JST | 1:00 AM - 1:20 AM UTC

[R5-05] Chondrule formation by collisions of planetesimals containing volatiles

「招待講演」

*Sin-iti Sirono[1] (1. Navoya Univ.)

10:20 AM - 10:35 AM JST | 1:20 AM - 1:35 AM UTC

[3Lecture-301-10-6add] 休憩

10:35 AM - 10:55 AM JST | 1:35 AM - 1:55 AM UTC

[R5-06] Constraining the true timescale of chondrule formation through chondrule mineral chemistry

「招待講演」

*Kohei Fukuda[1], Noriko T Kita[2], Makoto Kimura[3] (1. Osaka Univ. Sci., 2. UW-Madison, 3. NIPR)

10:55 AM - 11:10 AM JST | 1:55 AM - 2:10 AM UTC

[R5-07] Reproduction Experiments of Radial Pyroxene Chondrules Using a Gas-jet Levitation System under Reducing Conditions

「発表賞エントリー」

*Kana Watanabe[1], Tomoki Nakamura[1], Tomoyo Morita[1] (1. Tohoku Univ. Sci.)

11:10 AM - 11:25 AM JST | 2:10 AM - 2:25 AM UTC

[R5-08] Stratigraphy of poikilitic shergottite parent body(ies) as deduced from their textural and mineral compositional diversities

「発表賞エントリー」

*Sojiro Yamazaki[1], Akira Yamaguchi[2], Takashi Mikouchi[3] (1. Fac. Sci., Univ. Tokyo, 2. Natl. Inst. Polar Res., 3. Univ. Museum, Univ. Tokyo)

11:25 AM - 11:40 AM JST | 2:25 AM - 2:40 AM UTC

[R5-09] High pressure phase transition of Ti-Cr-rich spinel in Asuka 12325 Martian meteorite

*Atsushi TAKENOUCHI[1], Yohei Igami[2], Takashi Mikouchi[3], Akira Miyake[2], Akira Yamaguchi[4] (1. The Kyoto Univ. Museum, 2. Kyoto Univ. Sci., 3. The Univ. Museum, The Univ. of Tokyo, 4. NIPR)

11:40 AM - 11:55 AM JST | 2:40 AM - 2:55 AM UTC

[R5-10] Estimation of thermal history using silica minerals in mesosiderites

*Haruka OONO[1], Atsushi Takenouchi[2], Takashi Mikouchi[3], Akira Yamaguchi[4], Naoji Sugiura[5], Akira Miyake[1] (1. Kyoto Univ., 2. Museum of Kyoto Univ., 3. Museum of Univ. Tokyo, 4. NiPR, 5. Chiba Int. Tech.)

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

2:00 PM - 3:00 PM JST | 5:00 AM - 6:00 AM UTC | ES Hall Higashiyama Campus

R6: Plutonic rocks, volcanic rocks and subduction factory

Chairperson:Takashi Hoshide(Akita University)

2:00 PM - 2:20 PM JST | 5:00 AM - 5:20 AM UTC

[R6-12] Zirconium minerals in ultramafic rocks

「招待講演」

*Hikaru Sawada[1,2], Ryosuke Oyanagi[3,2] (1. University of Toyama, 2. JAMSTEC, 3. Kokushikan University)

2:20 PM - 2:35 PM JST | 5:20 AM - 5:35 AM UTC

[R6-13] Estimation of physical conditions during granitic magma crystallization process using melt inclusions in zircon

*Yuka TANIWAKI[1], Satoshi SAITO[2] (1. Ciatec.,Co LTD, 2. Ehime Univ.)

2:35 PM - 2:50 PM JST | 5:35 AM - 5:50 AM UTC

[R6-14] Estimation of TiO_2 activity for accurate determination of quartz crystallization temperature

*Yasuhiro OGITA[1], Takenori Kato[2], Takashi Yuguchi[3] (1. Yamagata Univ., 2. Nagoya Univ., 3. Kumamoto Univ.)

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

2:00 PM - 3:30 PM JST | 5:00 AM - 6:30 AM UTC | ES024 Higashiyama Campus

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

Chairperson:Kazuki 小松 Komatsu

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

[R2-12] Structural stabilization of pyrite-type compounds and chemical bonds of anions.

「招待講演」

*Akira YOSHIASA[1], Makoto Tokuda[1], Ginga Kitahara[1], Akihiko Nakatsuka[2], Kazumasa Sugiyama[3] (1. Kumamoto University, 2. Yomaguchi University, 3. Tohoku University)

2:30 PM - 2:45 PM JST | 5:30 AM - 5:45 AM UTC

[R2-13] Formation of Fundamental Building Blocks Composed of Calcium Borate Minerals

「発表賞エントリー」

*Kosuke Yamaguchi[1], Atsushi Kyono[2], Satoru Okada[1], Hiroki Hasegawa[1] (1. Univ of Tsukuba. Grad. Sch. of Life and Env., Sci, 2. Univ of Tsukuba. Life and Environmental Science)

2:45 PM - 3:00 PM JST | 5:45 AM - 6:00 AM UTC

[R2-14] Crystal structures of kimuraite-(Y) and lokkaite-(Y)

*Ritsuro Miyawaki[1], Koichi Momma[1] (1. National Museum of Nature and Science)

3:00 PM - 3:15 PM JST | 6:00 AM - 6:15 AM UTC

[R2-15] Thermal Vibration of Oxygen atoms in Keatite Crystal

*Fumiya NORITAKE[1] (1. University of Yamanashi)

3:15 PM - 3:30 PM JST | 6:15 AM - 6:30 AM UTC

[R2-16] Development of a simulation method for electron back-scattered diffraction based on dynamical theory and its application to mineralogy

*Yusuke SETO[1], Masahiro Ohtsuka[2] (1. Osaka Metropolitan Univ. Sci., 2. Nagoya Univ. Sci. IMaSS.)

Oral presentation | R5: Extraterrestrial materials

2:00 PM - 3:30 PM JST | 5:00 AM - 6:30 AM UTC | ES025 Higashiyama Campus

R5: Extraterrestrial materials

Chairperson:Megumi Matsumoto, Daiki Yamamoto, Yusuke Seto, Toru Matsumoto(Kyoto University)

2:00 PM - 2:15 PM JST | 5:00 AM - 5:15 AM UTC

[R5-11] Mineralogy of micrometeoroids captured in silica aerogel aboard the ISS by the Dandelion Project

*Takaaki NOGUCHI[1], Akira MIYAKE[1], Hikaru Yabuta[2], Yoko Kebukawa[3], Daiki Suga[4], Makoto Tabata[5], Kyoko Okudaira[6], Akihiko Yamagishi[7], Hajime Yano[8] (1. Kyoto University, 2. Hiroshima University, 3. Tokyo Institute of Technology, 4. JASRI, 5. Chiba University, 6. University of Aizu, 7. Tokyo University of Pharmacy and Life Sciences, 8. JAXA)

2:15 PM - 2:30 PM JST | 5:15 AM - 5:30 AM UTC

[R5-12] STEM analysis of sodium-rich grains recovered from asteroid Ryugu

*Toru MATSUMOTO[1], Takaaki Noguchi[1], Toru Araki[2], Hayato Yuzawa[2], Akira Miyake[1] (1. Kyoto University, 2. UVSOR)

2:30 PM - 2:45 PM JST | 5:30 AM - 5:45 AM UTC

[R5-13] Important occurrence of amorphous hydrated Na-bearing Mg phosphate in Asteroid Ryugu samples and CI chondrites

*Takashi MIKOUCHI[1], Hideto Yoshida[2], Satoru Hayashi[2], Minami Masuda[2], Hiroyuki Kagi[2], Kazumasa Sugiyama[3], Tomoki Nakamura[4], Michael Zolensky[5] (1. Univ. Museum, Univ. of Tokyo, 2. Fac. of Sci., Univ. of Tokyo, 3. Inst. Mat. Res., Tohoku Univ., 4. Fac. of Sci., Tohoku Univ., 5. NASA-JSC)

2:45 PM - 3:00 PM JST | 5:45 AM - 6:00 AM UTC

[R5-14] On the relationship between lithological classification and degree of aqueous alteration in Asteroid Ryugu samples

*Minami Masuda[1], Takashi Mikouchi[2], Hideto Yoshida[1], Tomoki Nakamura[3], Michael Zolensky[4] (1. Univ. Tokyo, Sci., 2. Univ. Tokyo, Univ. Museum, 3. Tohoku Univ., Sci., 4. NASA-JSC)

3:00 PM - 3:15 PM JST | 6:00 AM - 6:15 AM UTC

[R5-15] Highly primitive clasts with GEMS-like grains in Ryugu C0002 sample

*Megumi MATSUMOTO[1], Akira Tsuchiyama[2,3], Masahiro Yasutake[4], Tomoki Nakamura[1] (1. Tohoku Univ., 2. Ritsumeikan Univ., 3. GIG, 4. JASRI/SPring-8)

3:15 PM - 3:30 PM JST | 6:15 AM - 6:30 AM UTC

[R5-16] Aqueous alteration experiments using GEMS simulant particles

*Akira TSUCHIYAMA[1,2], Satomi Enju[3], Haiyang Xian[1], Mingqi Sun[1], Ding Xing[1], Yuanyuan Wang[4], Zhaolu He[1], Jing Du[1], Shan Li[1], Jiaxin Xi[1], Xiaoju Lin[1], Jian Di[1], Yuto Imura[5] (1. Guangzhou Inst. Geochem., 2. Ritsumeikan Univ., 3. Ehime Univ. Sci, 4. Tokyo Univ. Sci., 5. Kyoto Univ. Sci.)

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

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

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

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

[R2-P-01] Advanced four-circle goniometer system for single-crystal diffraction measurements at BL-10A, PF: anomalous X-ray scattering method & in situ high-pressure experiments

*Takahiro KURIBAYASHI[1], Ryo Yamane[2], Keita Harada[1], Toshiro Nagase[3], Kazumasa Sugiyama[2] (1. Tohoku University (Sci), 2. Tohoku University (IMR), 3. Tohoku University (Mus))

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

[R2-P-02] Fine Structural Analysis using Single-Crystal Anomalous X-ray Scattering in KEK Photon Factory BL-6C

*Makoto TOKUDA[1], Takumi Ichimura[2], Koichi Momma[6], Ritsuro Miyawaki[6], Takashi Mikouchi[4], Akira Yoshiasa[3], Kazumasa Sugiyama[5] (1. IINa, Kumamoto Univ., 2. Tohoku Univ. Eng, 3. Kumamoto Univ. Sci, 4. Univ. of Tokyo UMUT , 5. IMR, Tohoku Univ., 6. Nat'l. Mus. Nat. Sci.)

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

[R2-P-03] Evaluation of Fe K-edge XANES anisotropy and accurate determination of micro-area Fe^{2+}/Fe^{3+} in clinopyroxene using multivariate analysis

「発表賞エントリー」

*Taisuke Ito[1], Simon Richard Wallis[1], Yoshio Takahashi[1] (1. The Univ. of Tokyo, EPS)

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

[R2-P-04] Fine structural analysis of Diopside (Violan) containing Mn and Fe

「発表賞エントリー」

*Hayato Chiba[1], Kazumasa Sugiyama[2], Makoto Tokuda[3], Takashi Mikouchi[4] (1. Tohoku Univ. Eng., 2. Tohoku Univ. IMR, 3. Kumamoto Univ. IINa, 4. UMUT)

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

[R2-P-05] Single-crystal X-ray diffraction study of a largely Cs-exchanged natural Ca-chabazite: crystal-chemical factors for its excellent Cs-exchange ability

Naomi KAWATA[1], Ryo FURUHASHI[1], Keiko FUJIWARA[1], Makio OHKAWA[2], *Akihiko NAKATSUKA[1] (1. Yamaguchi Univ. Sci. Tech. Innov., 2. Hiroshima Univ. Adv. Sci. Eng.)

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

[R2-P-06] Distribution of Mn^{3+} and Mn^{4+} studied by X anomalous scattering: the details of 3×4 tunneled structure formed by MnO_6 octahedron in woodruffite

「発表賞エントリー」

*Christopher Miyazaki[1], Ryo Yamane[2], Kazumasa Sugiyama[2], Makoto Tokuda[3], Takeshi Mikouchi[4] (1. Tohoku Univ. Eng., 2. Tohoku Univ. IMR, 3. Kumamoto Univ. IINa, 4. UMUT)

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

[R2-P-07] Mg^{2+} and Ba^{2+} ion-exchange of GTS-type Na titanosilicate and its structural characterization

*Keiko FUJIWARA[1], Naomi Kawata[1], Akihiko Nakatsuka [1] (1. Yamaguchi Univ. Sci. Tech. Innov.)

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

[R2-P-08] Distribution of Fe^{3+} among tetrahedral sites and crystal structural change of gehlenite-Fe^{3+} gehlenite

*Maki HAMADA[1], Mariko Nagashima[2] (1. Kanazawa University, 2. Yamaguchi University)

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

[R2-P-09] Crystallographic site preference of impurity elements in olivine by ALCHEMI method

*Yohei IGAMI[1], Akira MIYAKE[1], Ryo WAKABAYASHI[1], Norikatsu AKIZAWA[2] (1. Kyoto University, 2. The University of Tokyo)

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

[R2-P-10] Precipitated structures of pyroxene lamellar with various directions

*Shoichi TOH[1] (1. Fukuoka University)

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

[R2-P-11] Crystal chemistry of bridgmanite with Al/Fe contents expected in MORB component

*Akihiko NAKATSUKA[1], Hiroshi FUKUI[2], Seiji KAMADA[3], Naohisa HIRAO[2], Makio OHKAWA[4], Kazumasa SUGIYAMA[5], Takashi YOSHINO[6] (1. Yamaguchi Univ. Sci. Tech. Innov., 2. JASRI, 3. AD Science Inc., 4. Hiroshima Univ. Adv. Sci. Eng., 5. Tohoku Univ. IMR, 6. Okayama Univ. IPM)

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

[R2-P-12] Mechanism of the pressure-induced crystallization of amorphous calcium carbonate

*Chiho Morita[1], Hiroki Kobayashi[1], Hiroyuki Kagi[1] (1. UTokyo. Sci.)

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

[R2-P-13] Differences in the effects of Li and Cs on the calcitization of vaterite.

*Noboru FURUKAWA[1], Ami Kinoda[2] (1. Chiba University, 2. NIWAKA)

Poster presentation | R5: Extraterrestrial materials

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

R5: Extraterrestrial materials

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

[R5-P-01] Dehydration of Newberyite($MgHPO_4.3H_2O$) under low pressures

*Yukako Matsumoto[1], Shogo Tachibana[1] (1. UTokyo)

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

[R5-P-02] Experimental simulation of oxygen isotope exchange between chondrule melt and low-pressure water vapor

*Daiki YAMAMOTO[1], Noriyuki Kawasaki[2] (1. Kyushu University, 2. Hokkaido University)

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

[R5-P-03] Early impact events recorded in anomalous eucrites

*Akira YAMAGUCHI[1] (1. National Institute of Polar Research)

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

[R5-P-04] Internal Structure Analaysis of Carbonaceous Material in Yamato 8448 Ureilite

*Masahiro YASUTAKE[1], Megumi Matsumoto[2], Akira Tsuchiyama[3,4], Kentaro Uesugi[1], Akihisa Takeuchi[1], Akira Yamaguchi[5] (1. JASRI, 2. Tohoku Univ., 3. Ritsumeikan Univ., 4. CAS/GIG, 5. NIPR)

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

[R5-P-05] Effects of initial porosity on shock deformation microstructures in rutile

*Yuhei Umeda[1,2], Yuma Nagai[1,2], Naotaka Tomioka[3], Toshimori Sekine[4], Masashi Miyakawa[5], Takamichi Kobayashi[5], Hitoshi Yusa[5], Takuo Okuchi[1,2] (1. KURNS, 2. Kyoto Univ. Eng., 3. JAMSTEC, 4. HPSTAR, 5. NIMS)

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

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

R6: Plutonic rocks, volcanic rocks and subduction factory

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

[R6-P-01] Orthopyroxene cumulates from a serpentinite mud-volcano in the mariana forearc: constituent rocks of the forearc Moho transition zone

*Pia Ataka[1], Yuji Ichiyama[1], Shun Takamizawa[1], Akihiro Tamura[2], Tomoaki Motishita[2] (1. Chiba University, 2. Kanazawa University)

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

[R6-P-02] Formation processes of high-Mg andesite associated with ophiolitic rocks in the Setogawa belt

*Tsumugi Kato[1], Yuji Ichiyama[1], Akihiro Tamura[2], Tomoaki Morishita[2] (1. Chiba Univ., 2. Kanazawa Univ.)

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

[R6-P-03] Petrological and geochemical study of volcanics from Kuju volcanic group, Kyushu Island, Southwest Japan Arc.

「発表賞エントリー」

*Soma Yamanaka[1], Tomoyuki Shibata[1], Ryotaro Fujihara[1], Masako Yoshikawa[1], Tomo Shibata[2] (1. Hiroshima Univ. Sci. & Tech, 2. Fukuoka Univ. Sci.)

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

[R6-P-04] Petrological study of intrusive rocks and their crustal xenoliths in the Suzu area, Atsumi district, Yamagata

*Kazuhiro Tojo[1], Takashi Hoshide[1] (1. Akita Univ.)

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

[R6-P-05] Crystallization conditions of zircon and its crystallization relationship with surrounding minerals in the Tono plutonic complex, Kitakami mountains

*Yasuhiro OGITA[1,2], Shuhei Sakata[3], Takeshi Ohno[4], Tatsunori Yokoyama[2], Satoshi Suzuki[1], Kyoka Endo[1], Takashi Yuguchi[5] (1. Yamagata Univ., 2. JAEA, Tono Geoscience Center, 3. The Univ. Tokyo, Earthquake Research Inst., 4. Gakushuin Univ., 5. Kumamoto Univ.)

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

[R6-P-06] Petrography and magmatic processes of a diorite body distributed in the Kawakami region, Yamaguchi Prefecture, Japan

「発表賞エントリー」

*Ryosei Sugiura[1], Keisuke Eshima[1] (1. Yamaguchi University)

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

[R6-P-07] Sr–Nd–Hf isotopic systematics for the Habu granodiorite, eastern part of Yamaguchi Prefecture

*Masaaki OWADA[1], Yusaku Akimoto[2], Mariko Nagashima[1], Keisuke Eshima[1], Atsushi Kamei[3], Nobuhisko Nakano[4], Kenta Kawaguchi[5], Yasuhito Osanai[4] (1. Yamaguchi Univ., 2. YON-C, 3. Shimane Uni., 4. Kyushu Univ., 5. Hiroshima Univ.)

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

[R6-P-08] Rare earth element compositions and U-Pb zircon age of granodiorite porphyrites in the Noko Island, western part of northern Kyushu

*Masaki YUHARA[1], Yoshinobu KAWANO[2], Kazuhiro TSUKADA[3], Purevdulam SUKHBAATAR[4] (1. Fukuoka Univ. Sci., 2. Rissho Univ. Env. Sci., 3. Nagoya Univ. Mus., 4. Nagoya Univ. Env. St.)

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

[R6-P-09] Compositional changes and growth processes of the Asakura granodiorite, Northern Kyushu, Japan.

「発表賞エントリー」

*Yudai HAMANO[1], Keisuke ESHIMA[1] (1. Yamaguchi Uni. Sci)

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

[R6-P-10] Intrusive relationship and lithofacies classification of Granite–Granodiorite in Eastern Fukuoka Prefecture

「発表賞エントリー」

*Ryo Nakamura[1], Keisuke Eshima[1] (1. Yamaguchi University)

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

[R6-P-11] Crystallization processes of quartz in a granitic magma: Implications for the magma chamber processes of Okueyama granite, Kyushu, Japan

*Takashi YUGUCHI[1], Takenori Kato[4], Yasuhiro Ogita[2], Minori Watanabe[6], Asuka Kato[6], Daichi Itoh[6], Tatsunori Yokoyama[2], Shuhei Sakata[3], Takeshi Ohno[5] (1. Kumamoto University, 2. JAEA, 3. Uni. Tokyo ERI, 4. Nagoya University, 5. Gakushuin University, 6. Yamagata University)

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

[R6-P-13] Differentiation Processes of Granitic Magma Chamber Recorded in 'Oshima-ishi' Distributed in Oshima, Geiyo islands, Ehime Prefecture

*Kazuya SHIMOOKA[1,2], Soichiro AONO[2], Takahito ONISHI[2], Toko FUKUI[2], Motohiro TSUBOI[1], Toshiro TAKAHASHI[3], Satoshi SAITO[2] (1. Kwansei Gakuin Univ., 2. Ehime Univ., 3. Niigata Univ.)

"Mineralogy 2022"General Outreach lecture

3:30 PM - 5:00 PM JST | 6:30 AM - 8:00 AM UTC | ES Hall Higashiyama Campus

General Outreach lecture

3:30 PM - 5:00 PM JST | 6:30 AM - 8:00 AM UTC

[3Lecture-1-1530-1add] 一般普及講演

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

Sat. Sep 14, 2024 9:00 AM - 12:00 PM JST | Sat. Sep 14, 2024 12:00 AM - 3:00 AM UTC | ES Hall Higashiyama Campus

R6: Plutonic rocks, volcanic rocks and subduction factory

Chairperson:Tatsuhiko Kawamoto(Shizuoka University), Takashi Yuguchi, Atsushi Kamei

9:00 AM - 9:15 AM JST | 12:00 AM - 12:15 AM UTC

[R6-01] Compositional evolution of slab-derived fluids during ascent and origin of subduction-zone primary magmas: Implications from trace-element partition between hydrous melts and Cl-free or Cl-rich aqueous fluids

*Hajime TANIUCHI[1], Tatsuhiko KAWAMOTO[2], Takayuki NAKATANI[1], Osamu ISHIZUKA[1], Toshihiro SUZUKI[1], Akihiko Tomiya[1] (1. GSJ, AIST, 2. Shizuoka Univ.)

9:15 AM - 9:30 AM JST | 12:15 AM - 12:30 AM UTC

[R6-02] New crust and mantle physical properties research from the development of rock synthesis methods

「招待講演」

*Sanae Koizumi[1] (1. The University of Tokyo)

9:30 AM - 9:45 AM JST | 12:30 AM - 12:45 AM UTC

[R6-03] The use of contact metamorphism to identify plutons associated with major contemporaneous eruption and estimate magma flux

*Simon R WALLIS[1], Ken Yamaoka[2], Akira Miyake[3], Catherine Annen[4] (1. The University of Tokyo, 2. AIST, 3. Aichi University of Education, 4. Institute of Geophysics, Czech Academy of Sciences)

9:45 AM - 10:00 AM JST | 12:45 AM - 1:00 AM UTC

[R6-04] Petrography and geochronology of the Kuki granite, Kitakami Mountains, northeastern Japan: Shallow crustal intrusion and emplacement processes of granitic magma

*Satoshi SUZUKI[1], Takashi YUGUCHI[2], Keito ISHIGURO[1], Kyoka ENDO[1], Asuka KATO[1], Kosuke YOKOYAMA[1], Yasuhiro OGITA[3], Tatsunori YOKOYAMA[3], Shuhei SAKATA[4], Takeshi OHNO[5], Eiji SASAO[3] (1. Yamagata University, 2. Kumamoto University, 3. Japan Atomic Energy Agency, 4. University of Tokyo, 5. Gakushuin University)

10:00 AM - 10:15 AM JST | 1:00 AM - 1:15 AM UTC

[R6-05] Zircon U-Pb dating of granitoids in the Hobenzan area, western Yamaguchi Prefecture, southwest Japan

*Yukiyasu TSUTSUMI[1], Kenichiro TANI[1] (1. National Museum of Nature and Science)

10:15 AM - 10:30 AM JST | 1:15 AM - 1:30 AM UTC

[R6-06] Estimation of temperature and pressure conditions of granitoids in the eastern part of Shimane Prefecture, San'in Belt.

*Kai Nakahashi[1], Satoshi SAITO[1] (1. Ehime University Graduate School of Science and Engineering, Earth Science Division)

10:30 AM - 10:45 AM JST | 1:30 AM - 1:45 AM UTC

[R6-07] Primary magma of Cretaceous Northern Kyushu batholith: New approach from Cumulus rocks

*Keisuke ESHIMA[1], Masaaki OWADA[1], Atsushi KAMEI[2] (1. Yamaguchi Univ. Sci. , 2. Shimane Univ.)

10:45 AM - 11:00 AM JST | 1:45 AM - 2:00 AM UTC

[R6-08] Origin of the Cretaceous ignimbrite flare-up in SW Japan

*Ken Yamaoka[1], Tokiyuki Morohoshi[2], Daisuke Sato[1], Kazuto Mikuni[1] (1. AIST, 2. Univ. Tokyo. Sci.)

11:00 AM - 11:15 AM JST | 2:00 AM - 2:15 AM UTC

[3Lecture-101-11-9add] 休憩

11:15 AM - 11:30 AM JST | 2:15 AM - 2:30 AM UTC

[R6-09] The genesis of garnet in the Quaternary rhyolite of Hime-shima volcanic group, EEast Kyushu, Southwest Japan Arc.

*Takehiro HIRAYAMA[1,2], Tomoyuki SHIBATA[2], Masako YOSHIKAWA[2] (1. Tokyo University, 2. Hiroshima University)

11:30 AM - 11:45 AM JST | 2:30 AM - 2:45 AM UTC

[R6-10] K–Ar ages and geochemical compositions of Early Pleistocene andesites from southern Kyushu, Japan

*Raiki YAMADA[1], Masakazu Niwa[1], Koji Umeda[2], Koshi Yagi[3], Taisei Fujiwara[3], Ikuo Okada[3], Fukuka Kida[1] (1. Japan Atomic Energy Agency, 2. Hirosaki University, 3. Hiruzen Institute for Geology and Geochronology)

11:45 AM - 12:00 PM JST | 2:45 AM - 3:00 AM UTC

[R6-11] Thermal history of pluton formation from Sr diffusion in plagioclase: implications for magma flux estimation and identification of plutons associated with major eruptions

「発表賞エントリー」

*Tokiyuki Morohoshi[1], Simon Richard Wallis[1] (1. The University of Tokyo)

Compositional evolution of slab-derived fluids during ascent and origin of subduction-zone primary magmas: Implications from trace-element partition between hydrous melts and Cl-free or Cl-rich aqueous fluids

*Hajime TANIUCHI[1], Tatsuhiko KAWAMOTO[2], Takayuki NAKATANI[1], Osamu ISHIZUKA[1], Toshihiro SUZUKI[1], Akihiko Tomiya[1]

1. GSJ, AIST, 2. Shizuoka Univ.

Keywords: Primary magma, Slab-derived fluid, Partition coefficient, High-pressure and high-temperature experiment

New crust and mantle physical properties research from the development of rock synthesis methods

*Sanae Koizumi[1]

1. The University of Tokyo

Keywords: Olivine, Mantle, Crust, Sample synthesis

The use of contact metamorphism to identify plutons associated with major contemporaneous eruption and estimate magma flux

*Simon R WALLIS[1], Ken Yamaoka[2], Akira Miyake[3], Catherine Annen[4]

1. The University of Tokyo, 2. AIST, 3. Aichi University of Education, 4. Institute of Geophysics, Czech Academy of Sciences

Magmatic flux is an important factor controlling the heat and material transport in the continental crust; it is also thought to be a major control on the potential for any mamga to erupt, and duration of eruption and time scale between major events. Plutons are a clear record of magma input into the earth’ s crust and volume estimates combined with geochronological studies have been used to estimate past magma flux rates. However, areas suitable for such studies are limited and this approach cannot asses possible loss of magma through associated volcanic eruption. Contact metamorphic aureoles developed around plutons record the thermal effects of magma input into the crust and their study provides a potential way to use the geological record to estimate ancient magma flux rates even if material has been lost from the system by eruption.

A compilation of aureoles surrounding silicic plutons around the world shows that there is a wide variation in normalized thicknesses. Comparison with thermal modelling shows some aureoles are compatible with rapid input of the entire volume of magma recorded in the pluton whereas other aureoles are very narrow and imply slow rates of magma input. There are also numerous examples of aureoles broader than can be explained easily by either instantaneous intrusion models or incremental growth of plutons. Such broad aureoles may be explained by 1) unusually high crustal temperatures just before intrusion and 2) the contribution of magma that has subsequently been lost from the pluton system due to eruption.

The Shinshiro tonalite and the Busetsu granite are two plutons formed in the same Hongusan area and have similar zircon U–Pb ages. Although the Busetsu granite has a larger volume, it is associated with a much narrower aureole than the Shinshiro tonalite. Because the intrusions formed at the same time in the same area, the difference in aureole widths cannot be explained by contrasting background crustal temperatures. Thermal modeling shows that only eruptive loss of magma can adequately account for the characteristics of the Shinshiro tonalite aureole. Combining petrological studies of metamorphic aureoles with thermal modeling can identify plutons that developed in association with major volcanic eruptions and constrain ancient magma flux.

Keywords: Magma flux, Pluton, Contact metamorphism

Petrography and geochronology of the Kuki granite, Kitakami Mountains, northeastern Japan: Shallow crustal intrusion and emplacement processes of granitic magma

*Satoshi SUZUKI[1], Takashi YUGUCHI[2], Keito ISHIGURO[1], Kyoka ENDO[1], Asuka KATO[1], Kosuke YOKOYAMA[1], Yasuhiro OGITA[3], Tatsunori YOKOYAMA[3], Shuhei SAKATA[4], Takeshi OHNO[5], Eiji SASAO[3]

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

Keywords: Flare-up, Non-adakitic magma, Fractional crystallization, P-T history, t-T history

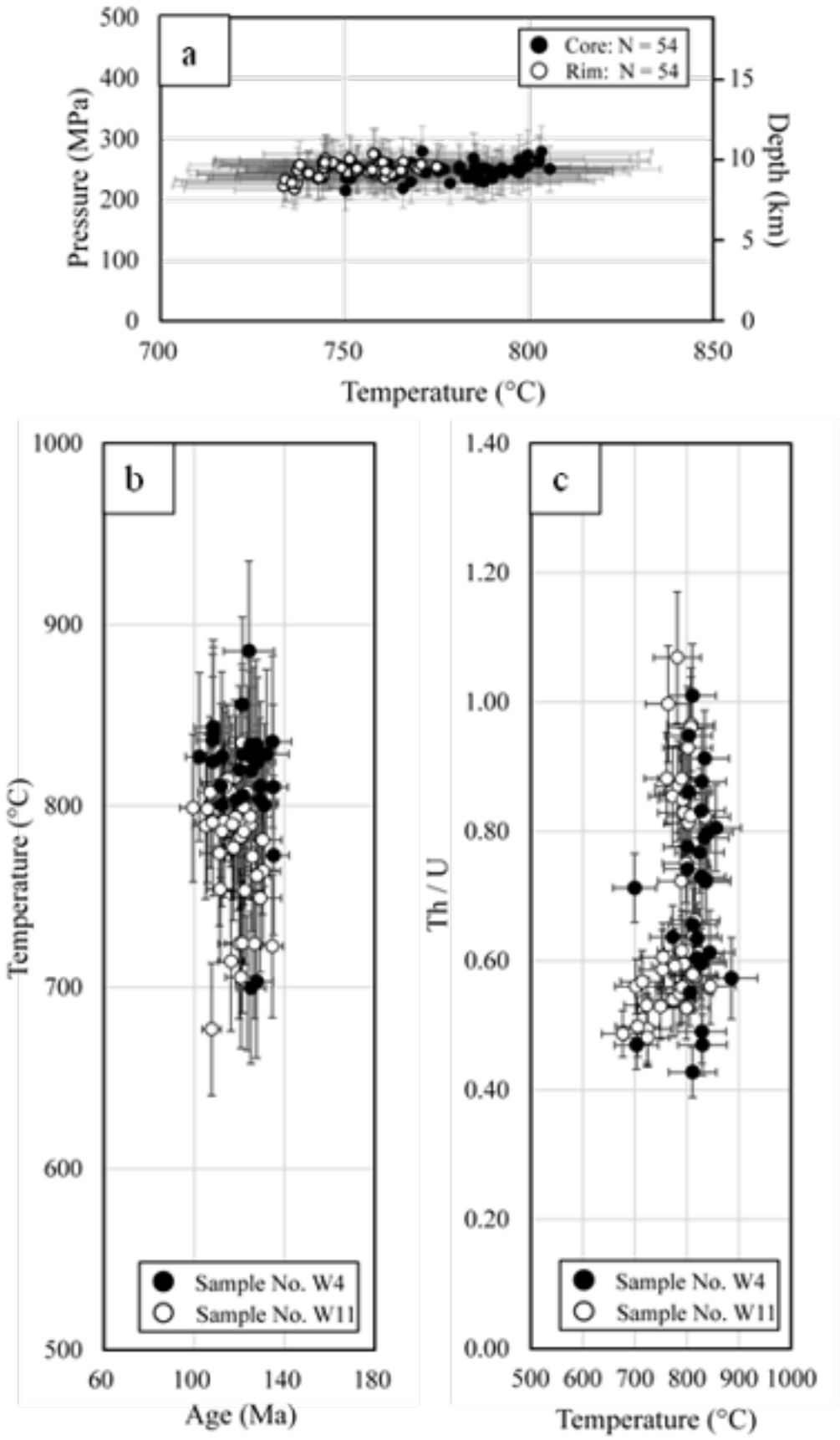


図 1 久喜花崗岩体のホルンブレンドから導出した温度と圧力（深度）の関係（a）．ジルコン U-Pb 年代・Ti 濃度・Th/U 比の同時測定による *t-T* 履歴（b）と Th/U 比と温度の関係（c）．

Zircon U-Pb dating of granitoids in the Hobenzan area, western Yamaguchi Prefecture, southwest Japan

*Yukiyasu TSUTSUMI[1], Kenichiro TANI[1]

1. National Museum of Nature and Science

Zircons U-Pb ages were obtained from granitoids in the Hobenzan area, western Yamaguchi Prefecture, southwest Japan. Granitoid bodies in the area consist of granodiorite and granite. The 5 granodioritic samples indicate 95.4 ±0.7 Ma, 96.3 ±1.0 Ma, 96.3 ±0.8 Ma, 96.2 ±0.6 Ma and 97.1 ±0.7 Ma whereas the 2 granitic samples indicate 93.9 ±0.7 Ma and 90.2 ±0.8 Ma. Errors are 95% confidence intervals. These ages are equivalent of the granitoids in northern Kyushu, but there is no report for granitoid which age is more than 95 Ma from eastern Chugoku District. Additional research is necessary to verify the chronological continuation of granitoids in SW Japan.

Keywords: SW Japan, San-yo Province, Cretaceous, granitoid, zircon U-Pb age

Estimation of temperature and pressure conditions of granitoids in the eastern part of Shimane Prefecture, San'in Belt.

*Kai Nakahashi[1], Satoshi SAITO[1]

1. Ehime University Graduate School of Science and Engineering, Earth Science Division

Keywords: granitoids, Amphibole only geothermobarometer, San-in granitoids

Primary magma of Cretaceous Northern Kyushu batholith: New approach from Cumulus rocks

*Keisuke ESHIMA[1], Masaaki OWADA[1], Atsushi KAMEI[2]

1. Yamaguchi Univ. Sci. , 2. Shimane Univ.

The Jurassic to Cretaceous igneous rocks associated with the subduction of the Izanagi Plate are widely developed in the Northeast Asian continental margin and have been intensively studied for their igneous activity and tectonics (Kim et al., 2016, *Lithos*262, 88–106; Yu et al. et al., 2021, *Int. Geol. Rev.*, 1881920). It is clear that the igneous rocks in the Japanese Islands, as well as the continental side (Northeastern Chin and Korean Peninsula), are related to the subduction (200–50 Ma) of the Izanagi Plate into Eurasia (Seton et al., 2015, *Geophys. Res. Lett.* 42, 1732–1740), and approximately 30% of Japan archipelago is occupied by plutons, typically granitoid. In addition, large-scale granitic complexes with an area of more than 100 km^2, known as batholiths, are exposed throughout the Japanese island and compose the major part of this island arc crust. Furthermore, about 80% of the granitoids exposed in Japan are concentrated in the geochnological age range 50–130 Ma (mainly Cretaceous to Paleogene). These continental-scale periodic large-scale igneous events are called Magmatic flare-ups and are very important for the mechanism of generation of large amounts of silicic magma and the evolution of crustal growth processes (Ducea, 2001, *GSA Today,* 11, 4–10). In this presentation, we discuss a comprehensive study of the Cretaceous Northern Kyushu Batholith, including magma generation mechanisms, especially the formation process and generation mechanisms of source magmas of the granitoids that form the batholith-scaled pluton. In addition, the source magmas will be examined using the Cumulus rocks from the Kita-Taku mafic complex associated with the Cretaceous Northern Kyushu batholith. We believe that the use of the cumulus minerals from the primary magma and the tracing of the characteristics of the primary magma is the best approach in the Northern Kyushu batholith, where there are very few exposures of coeval volcanic rocks (i.e., it is difficult to determine the melt composition from volcanic rocks).

Keywords: Cretaceous Northern Kyushu Batholith, Kita-taku mafic complex, Cumulate, Primary magma, Sanukitic HMA

Origin of the Cretaceous ignimbrite flare-up in SW Japan

*Ken Yamaoka[1], Tokiyuki Morohoshi[2], Daisuke Sato[1], Kazuto Mikuni[1]

1. AIST, 2. Univ. Tokyo. Sci.

Keywords: Cretaceous, flare-up, isotope ratio, magma, southwest Japan

Oral presentation

R6: Plutonic rocks, volcanic rocks and subduction factory

Chairperson:Tatsuhiko Kawamoto(Shizuoka University), Takashi Yuguchi, Atsushi Kamei

Sat. Sep 14, 2024 9:00 AM - 12:00 PM ES Hall (Higashiyama Campus)

11:00 AM - 11:15 AM

[3Lecture-101-11-9add]休憩

The genesis of garnet in the Quaternary rhyolite of Hime-shima volcanic group, EEast Kyushu, Southwest Japan Arc.

*Takehiro HIRAYAMA[1,2], Tomoyuki SHIBATA[2], Masako YOSHIKAWA[2]

1. Tokyo University, 2. Hiroshima University

Keywords: Garnet, Rhyolite, Xenocryst, Hime-shima volcanic group

K–Ar ages and geochemical compositions of Early Pleistocene andesites from southern Kyushu, Japan

*Raiki YAMADA[1], Masakazu Niwa[1], Koji Umeda[2], Koshi Yagi[3], Taisei Fujiwara[3], Ikuo Okada[3], Fukuka Kida[1]

1. Japan Atomic Energy Agency, 2. Hirosaki University, 3. Hiruzen Institute for Geology and Geochronology

Keywords: Kyushu, Early Pleistocene, Volcanic front, Andesite

Thermal history of pluton formation from Sr diffusion in plagioclase: implications for magma flux estimation and identification of plutons associated with major eruptions

*Tokiyuki Morohoshi[1], Simon Richard Wallis[1]

1. The University of Tokyo

Keywords: pluton formation, chemical diffusion, magma flux, Ryoke plutonic rocks

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

Sat. Sep 14, 2024 9:00 AM - 12:00 PM JST | Sat. Sep 14, 2024 12:00 AM - 3:00 AM UTC | ES024 Higashiyama Campus

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

Chairperson:Fumiya Noritake, Mariko Nagashima, Makoto Tokuda

9:00 AM - 9:20 AM JST | 12:00 AM - 12:20 AM UTC

[R2-01] Changes of physical and structural properties of hydrous minerals induced by dehydration of coordinated water molecules

「招待講演」

*Ryo YAMANE[1] (1. Tohoku University)

9:20 AM - 9:35 AM JST | 12:20 AM - 12:35 AM UTC

[R2-02] Phase change of priceite $Ca_2B_5O_7(OH)_5 \cdot H_2O$ during thermal decomposition

*Atsushi KYONO[1], Kosuke Yamaguchi[1], Satoru Okada[1], Hiroki Hasegawa[1] (1. Life & Environmental Sciences, University of Tsukuba)

9:35 AM - 9:50 AM JST | 12:35 AM - 12:50 AM UTC

[R2-03] The incorporation mechanisms of water in aluminous orthoenstatite clarified via comprehensive NMR measurements and first-principles calculations

*Xianyu XUE[1], Masami Kanzaki[1], Rongzhang Yin[2] (1. Okayama University, 2. Peking University)

9:50 AM - 10:05 AM JST | 12:50 AM - 1:05 AM UTC

[R2-04] Evaluation of the influence of polishing condition on hydrogen diffusion in fluorapatite and estimation of the diffusion mechanism

「発表賞エントリー」

*Chikashi Yoshimoto[1], Isao Sakaguchi[2], Shoichi Itoh[1] (1. Kyoto University, 2. NIMS)

10:05 AM - 10:20 AM JST | 1:05 AM - 1:20 AM UTC

[R2-05] Evaporation kinetics of forsterite in low-pressure H_2-H_2O atmosphere

「発表賞エントリー」

*Shiori Inada[1], Shogo Tachibana[1] (1. The University of Tokyo)

10:20 AM - 10:30 AM JST | 1:20 AM - 1:30 AM UTC

[3Lecture-201-11-6add] 休憩

10:30 AM - 10:45 AM JST | 1:30 AM - 1:45 AM UTC

[R2-06] Origine of framboidal goethite in sandstone in the Saiki Subgroup of the Lower Shimanto Group

*Hiroaki OHFUJI[1], Seira Konishi[1], Hiroshi Yamamoto[2] (1. Tohoku Univ. Sci, 2. Kagoshima Univ. Sci)

10:45 AM - 11:00 AM JST | 1:45 AM - 2:00 AM UTC

[R2-07] Precursor phenomenon of ultrananolite crystallization: liquid immiscibility in the volcanic glass

*Mayumi Mujin[1], Keiko Matsumoto[2], Akira Miyake[3], Yohei Igami[3], Michihiko Nakamura[1], Akihiko Yokoo[3], Mitsuhiro Yoshimoto[4] (1. Tohoku University, 2. National Institute of Advanced Industrial Science and Technology (AIST), 3. Kyoto University, 4. Mount Fuji Research Institute, Yamanashi Prefectural Government)

11:00 AM - 11:15 AM JST | 2:00 AM - 2:15 AM UTC

[R2-08] Calorimetric constraint of cation disordering enthalpy in $MgAl_2O_4$ spinel

*Hiroshi KOJITANI[1], Ryuji Matsuki[1], Yuta Nishimura[1], Itaru Ohira[1] (1. Gakushuin University)

11:15 AM - 11:30 AM JST | 2:15 AM - 2:30 AM UTC

[R2-09] Solid solubilities of Na^+ and K^+ in perovskite type $SrTiO_3$

Ryogo KITAI[2], *Takaya NAGAI[1], Jun KAWANO[1], Ayako Shinozaki[1] (1. Hokkaido Univ. Faculty SCi., 2. Hokkaido Univ. School SCi.)

11:30 AM - 11:45 AM JST | 2:30 AM - 2:45 AM UTC

[R2-10] Study on the consistency of Li conductivity measurements of $(Li,La)TiO_3$ with perovskite structure and Li migration during SIMS measurements

*Isao SAKAGUCHI[1], Tsuyoshi Onishi[1] (1. National Institute for Materials Science)

11:45 AM - 12:00 PM JST | 2:45 AM - 3:00 AM UTC

[R2-11] Structure transition mechanism under high pressure of Fe-Ti-0 system phases

*Takamitsu YAMANAKA[1,2], Takanori Hattori[3], Ho-kwang Mao[1] (1. Center for High Pressure Science and Technology Advanced Research, 2. Graduate School of Science Osaka University, 3. J-PARC)

Changes of physical and structural properties of hydrous minerals induced by dehydration of coordinated water molecules

*Ryo YAMANE[1]

1. Tohoku University

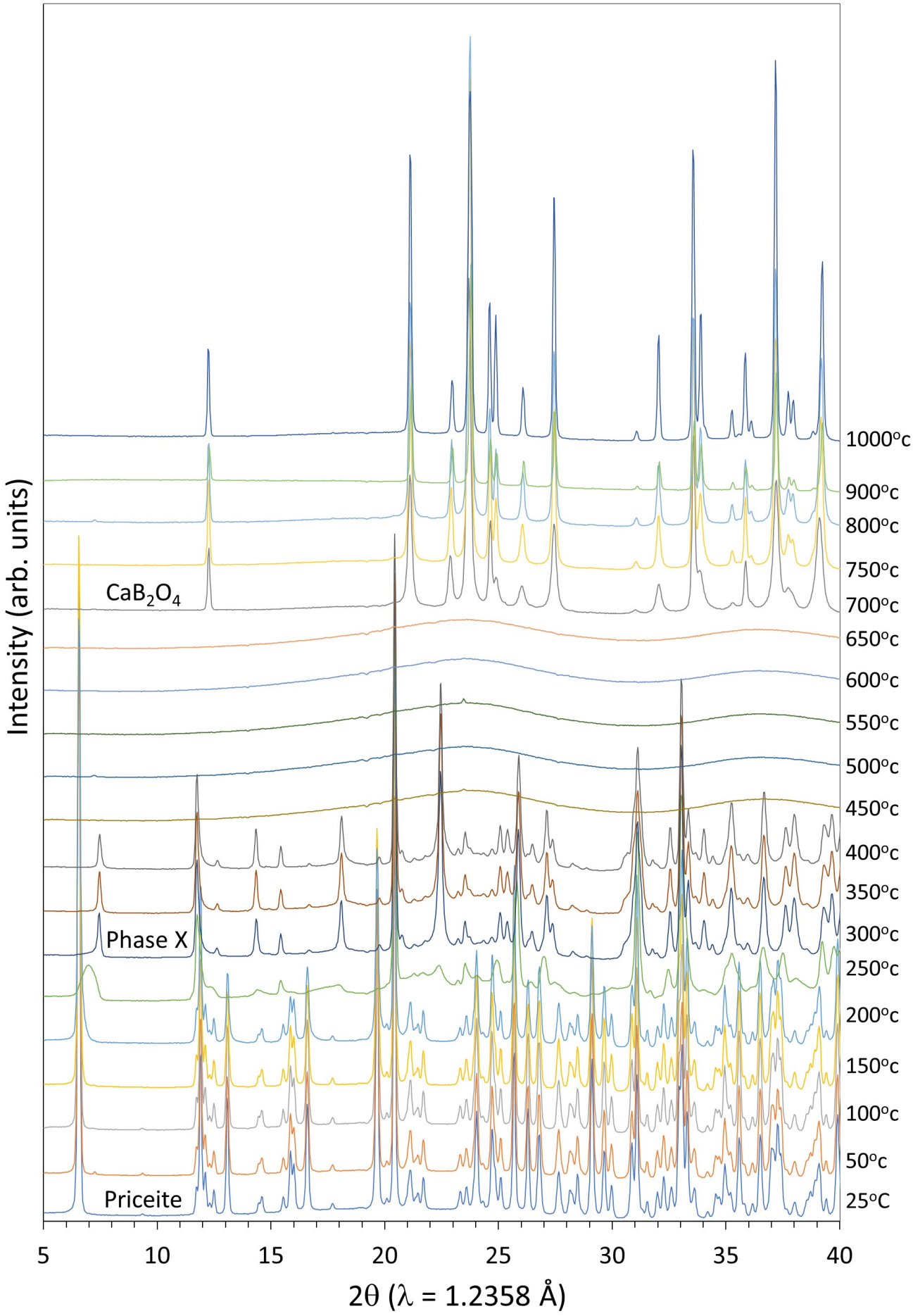
Keywords: hydrous mineral, dehydration, vivianite, coordinated water molecule

Phase change of priceite $Ca_2B_5O_7(OH)_5 \cdot H_2O$ during thermal decomposition

*Atsushi KYONO[1], Kosuke Yamaguchi[1], Satoru Okada[1], Hiroki Hasegawa[1]

1. Life & Environmental Sciences, University of Tsukuba

Keywords: Priceite, Borate mineral, Thermal decomposition, Synchrotron X-ray Diffraction


Intensity (arb. units)
1000°c
900°c
800°c
750°c
700°c
650°c
600°c
550°c
500°c
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400°c
350°c
300°c
250°c
200°c
150°c
100°c
50°c
25°C
CaB2O4
Phase X
Priceite
5
10
15
20
25
30
35
40
2θ (λ = 1.2358 Å)

The incorporation mechanisms of water in aluminous orthoenstatite clarified via comprehensive NMR measurements and first-principles calculations

*Xianyu XUE[1], Masami Kanzaki[1], Rongzhang Yin[2]

1. Okayama University, 2. Peking University

Aluminum is an important minor element in natural orthopyroxene, which has been shown to significantly enhance its water incorporation capacity. However, the incorporation mechanisms remain speculative. We performed a comprehensive one- and two-dimensional ^{1}H, ^{29}Si and ^{27}Al NMR measurements on hydrous aluminous orthoenstatite (OEn) samples containing 4 to 8 wt% Al_2O_3 synthesized at 1.5 GPa and 900˚C, and first-principles calculations on the energy, and NMR and polarized infrared spectra for anhydrous and hydrous aluminous OEn models to clarify the issue. The combined ^{1}H MAS and static NMR, ^{1}H double-quantum and triple-quantum MAS NMR, and ^{27}Al-^{1}H CP MAS NMR and HETCOR results, along with first-principles calculation results, unambiguously revealed that a large part of the incorporated water are present as proton pairs in Mg vacancies adjacent to Al, with one proton of each pair exhibiting significantly weaker hydrogen bonding, and accordingly smaller ^{1}H chemical shifts and higher OH stretching frequencies, than those in Al-free OEn, as a result of interaction with Al (see Figure). Proton pairs in Mg vacancies remote from Al are minor or absent. Coupled substitutions of Al + H for 1Si and 2Mg (both with weak hydrogen bonding) were also detected, but are less abundant than hitherto considered. Thus, the enhancement of water solubility by Al is achieved dominantly through the modification of the hydrogen bonding of protons in Mg vacancies. Such a mechanism may also be important in other nominally anhydrous mantle minerals. The obtained polarized IR spectral characteristics from our first-principles calculations also allow us to decipher the incorporation mechanisms of water in synthetic OEn of lower Al concentrations and natural orthopyroxenes of diverse origins from the polarized infrared data reported thus far.

Keywords: orthopyroxene, water, aluminum, NMR, first-principles calculation

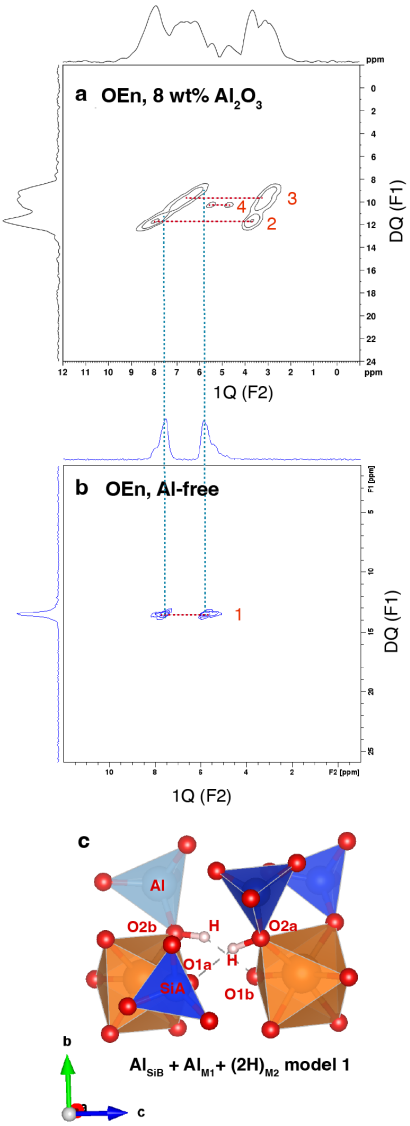


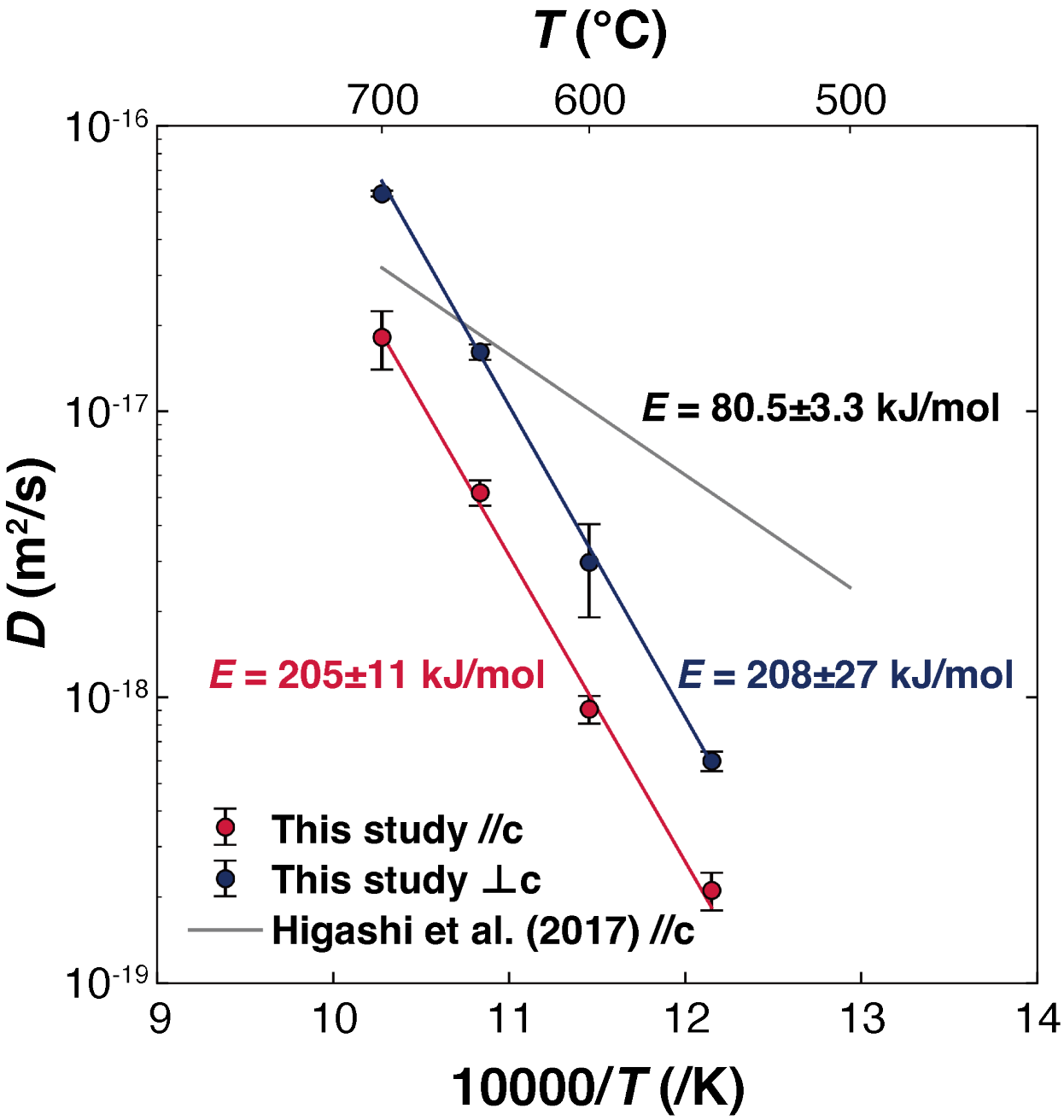
Figure. ^{1}H double-quantum (DQ)-single quantum (1Q) correlation MAS NMR spectrum for hydrous aluminous OEn with 8 wt% Al_2O_3 synthesized at 1.5 GPa and 900˚C (a), compared with that for a hydrous $MgSiO_3$ OEn synthesized at 7 GPa and 1200˚C (b). The horizontal dashed lines connect the observed proton pairs (labelled pair 1 to 4). Vertical lines are guides for the proton pair 1. Also shown in (c) is an example of energetically favorable 2H in an M2 vacancy ($(2H)_{M2}$) model for aluminous OEn from first-principles calculation. The Al^{IV}-O2b-H···O1b linkage yields smaller ^{1}H chemical shift and higher OH stretching frequency than $(2H)_{M2}$ defects in Al-free OEn.

Evaluation of the influence of polishing condition on hydrogen diffusion in fluorapatite and estimation of the diffusion mechanism

*Chikashi Yoshimoto[1], Isao Sakaguchi[2], Shoichi Itoh[1]

1. Kyoto University, 2. NIMS

Keywords: apatite, hydrogen, diffusion, Secondary Ion Mass Spectrometry



Evaporation kinetics of forsterite in low-pressure H_2-H_2O atmosphere

*Shiori Inada[1], Shogo Tachibana[1]

1. The University of Tokyo

Keywords: forsterite, evaporation, kinetics

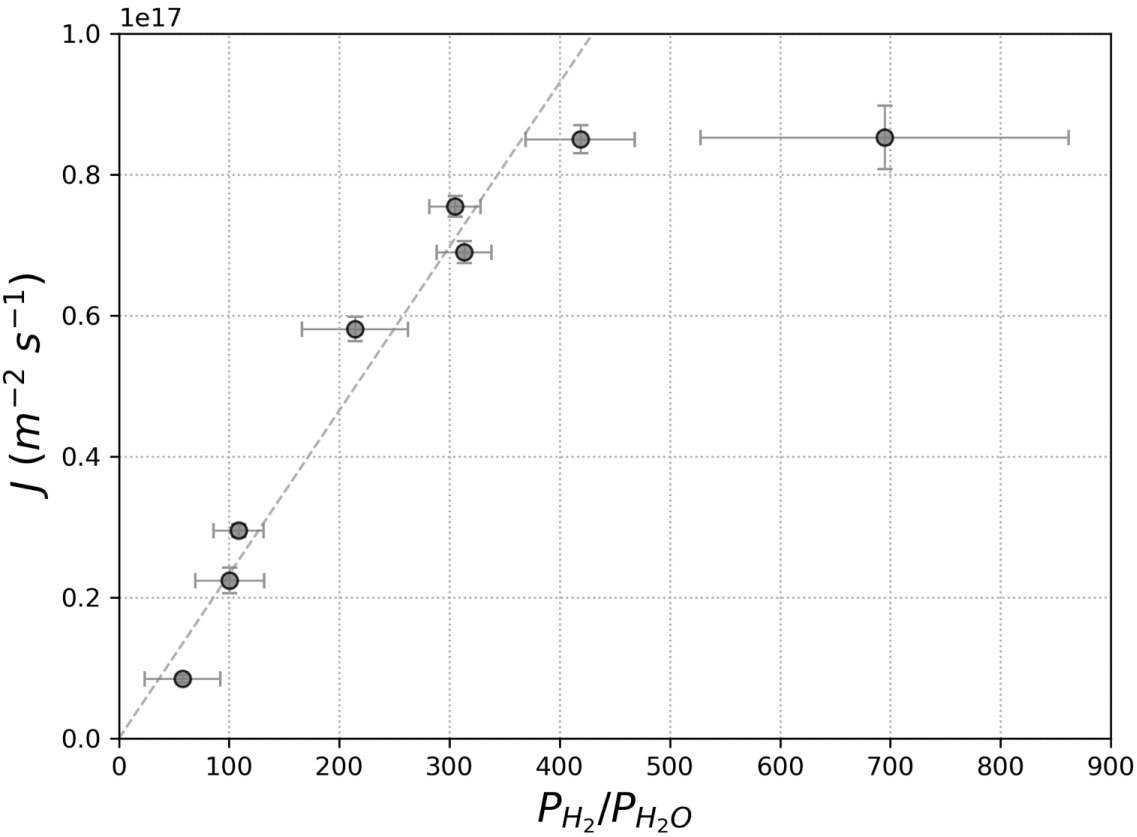


Fig. 1. 単位面積あたりの蒸発速度 J (m^{-2} s^{-1}) と雰囲気ガス組成 P_{H2}/P_{H2O} の関係（全圧 1 Pa, 温度 1400 K）.

Oral presentation

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

Chairperson:Fumiya Noritake, Mariko Nagashima, Makoto Tokuda
Sat. Sep 14, 2024 9:00 AM - 12:00 PM ES024 (Higashiyama Campus)

10:20 AM - 10:30 AM

[3Lecture-201-11-6add]休憩

Origine of framboidal goethite in sandstone in the Saiki Subgroup of the Lower Shimanto Group

*Hiroaki OHFUJI[1], Seira Konishi[1], Hiroshi Yamamoto[2]

1. Tohoku Univ. Sci, 2. Kagoshima Univ. Sci

The raspberry-like framboidal aggregate is a unique crystallization texture that can be frequently seen in microscopic pyrite in sedimentary rocks and modern sediments. In this study, we conducted micro- and nano-scale analyses using SEM and TEM on iron oxide framboids, which were recently found by Egami et al. (2021) in sandstones of the Saiki Subgroup of the Lower Shimanto Group distributed in western Kagoshima, Japan, to understand their origin. The results show that framboidal aggregate are distributed locally in the sandstone and often form clusters and/or infilled textures. Framboids are mostly surrounded by clay minerals produced by hydrothermal alteration, but no sulfur-containing minerals such as pyrite and sulfate minerals were observed. TEM observation on thin foils prepared by FIB showed that microcrystals that constitute framboids are not single crystals, but are filled by assemblages of nano-sized crystals with a concentric layer pattern, which consists of several alternating layers of goethite nanocrystals and a mixture of clay minerals and amorphous silica. The goethite nanocrystals grew inward from the microcrystal outline, indicating that they were formed by alternation (replacement) of pyrite microcrystals. These observations suggest goethite framboids are pseudomorphs after pyrite framboids, which formed in the interstitial spaces in the formation during diagenesis.

Keywords: Framboida goethite, Framboidal pyrite, Clay mineral, Alteration

Precursor phenomenon of ultrananolite crystallization: liquid immiscibility in the volcanic glass

*Mayumi Mujin[1], Keiko Matsumoto[2], Akira Miyake[3], Yohei Igami[3], Michihiko Nakamura[1], Akihiko Yokoo[3], Mitsuhiro Yoshimoto[4]

1. Tohoku University, 2. National Institute of Advanced Industrial Science and Technology (AIST), 3. Kyoto University, 4. Mount Fuji Research Institute, Yamanashi Prefectural Government

Keywords: liquid immiscibility, ultrananolite, nanocrystal, volcanic glass

Calorimetric constraint of cation disordering enthalpy in $MgAl_2O_4$ spinel

*Hiroshi KOJITANI[1], Ryuji Matsuki[1], Yuta Nishimura[1], Itaru Ohira[1]

1. Gakushuin University

Keywords: spinel, cation disorder, calorimetry, enthalpy of disordering, thermodynamics

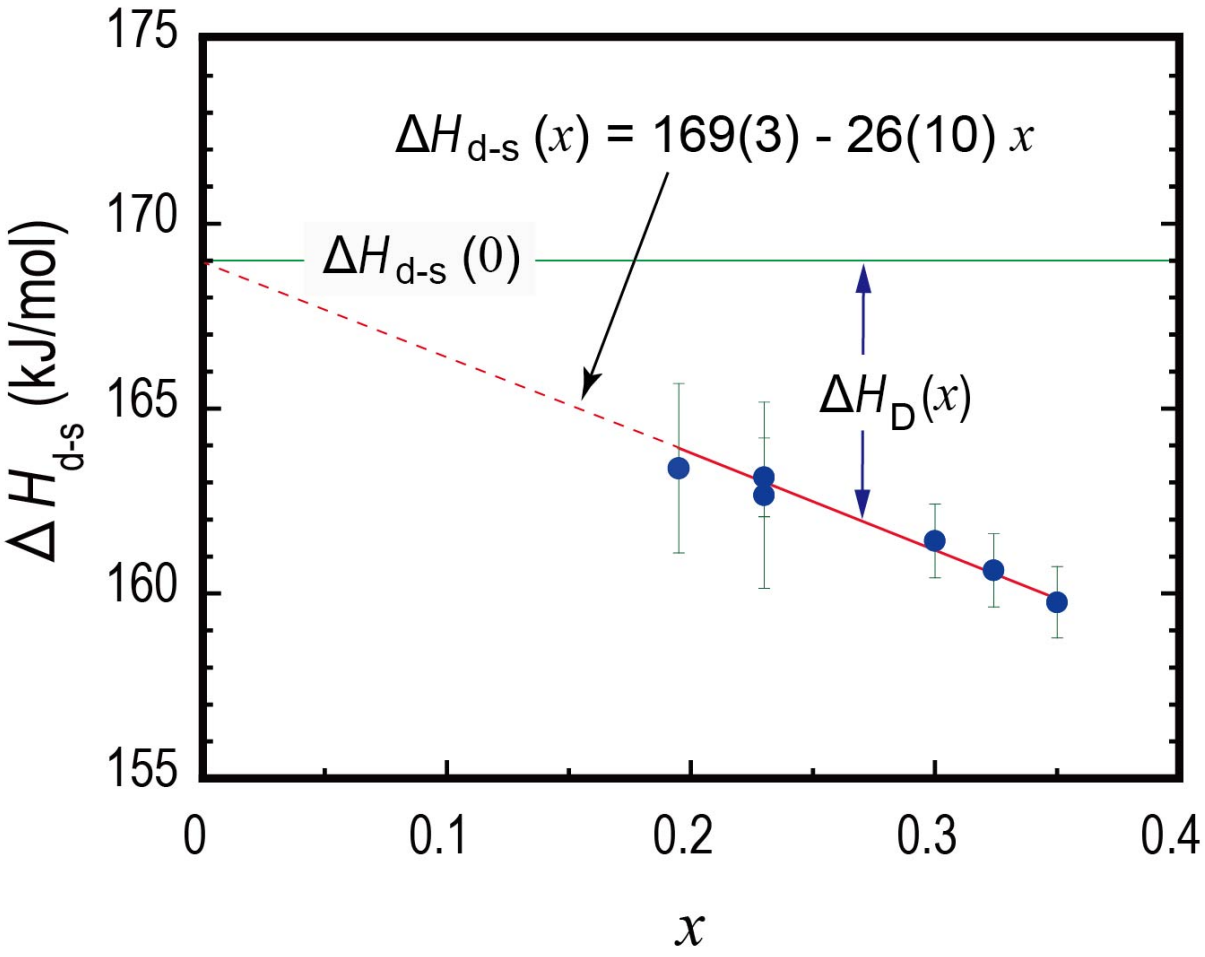


Fig. 1. 様々な陽イオン無秩序化の程度を持つ $MgAl_2O_4$ スピネルの落下溶解エンタルピー測定結果

Solid solubilities of Na^+ and K^+ in perovskite type $SrTiO_3$

Ryogo KITAI[2], *Takaya NAGAI[1], Jun KAWANO[1], Ayako Shinozaki[1]

1. Hokkaido Univ. Faculty SCi., 2. Hokkaido Univ. School SCi.

In this study, we report the results of synthetic experiments investigating the solid solubilities of Na^+ and K^+ in perovskite-type $SrTiO_3$. According to Shannon (1976), the ionic radii of Na^+ and K^+ at a 6-coordinate site are significantly larger than that of Ti^{4+}, while their ionic radii at a 12-coordinate site are comparable to that of Sr^{2+}. Assuming that Na^+ and K^+ only exchange with Sr^{2+}, this solid solution mechanism would result in the formation of oxygen vacancies.

Keywords: perovskite structure, SrTiO3, Na, K, oxygen vacancy

Study on the consistency of Li conductivity measurements of (Li,La)TiO_3 with perovskite structure and Li migration during SIMS measurements

*Isao SAKAGUCHI[1], Tsuyoshi Onishi[1]

1. National Institute for Materials Science

Introduction

Research and development for carbon neutrality is widely conducted. Among of these, many resources are devoted to these regarding all-solid-state lithium secondary batteries. Many oxides are proposed as electrolytes for all-solid-state lithium batteries. Among of these, we focus on (Li,La)TiO_3 with perovskite structure. Secondary ion mass spectrometry, which is advantageous for light element analysis, is impossible to analyze Li in this material at room temperature. This time, we tried a method to Li battery electrolytes.

Experiment

(Li,La)TIO_3 (hereinafter referred to as LLT) can be purchased in plates, disks, powder, etc. from Toho Titanium Co., Ltd. At this time, we used a plate shape as a standard sample. A comparative sample for this was newly synthesized. The analysis used SIMS (CAMECA, IMS-4f) equipped with NIMS, and O^- as primary ions was used and positive secondary ions were detected.

Results and Discussion

Figure 1 shows the analysis results of the purchased LLT. Figure 1(a) is Li image immediately after primary ion irradiation, and Li showed the uniform intensity, and some precipitates with high intensity were observed. Figure 1(b) is Li image after continuous irradiation with O^-. Obvious non-uniformity of Li was observed in the image. Considering this, the Li intensity distribution in Figure 1(b) reflects the micro-structure within the sample. When primary ions, O^-, are irradiated during analysis, the irradiated area becomes negative charge, and then Li with positive charge moves to compensate for its charge. The region where Li has changed to a high intensity is a large grain, and the Li conductivity reaches $1x10^{-3}$ S/cm. It is thought that because the current density of primary ions is small, Li that has migrated to the surface reacts with oxygen and generates LiO_x. it is considered that such non-uniform Li intensity was generated because the amount of Li movement within the disk was small.

Summary

In materials such as the electrolyte in Li batteries, Li moves through the material at room temperature. This research revealed that Li can be moved by changing the charge state on the surface through primary ion irradiation, and that the migration path of Li is the same as that of movement known by electrical measurements.

Keywords: Perovskite structure

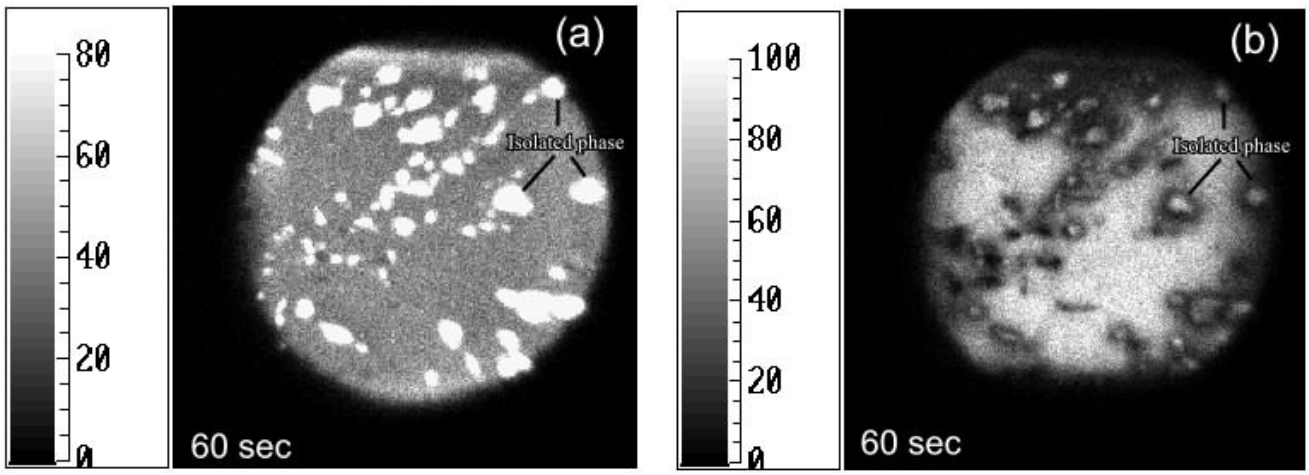


Fig. 1. Li images obtained by SIMS. (a) is the first image by O- irradiatation. (b) is the image obtained after about 1.5 hours.

Structure transition mechanism under high pressure of Fe-Ti-0 system phases

*Takamitsu YAMANAKA[1,2], Takanori Hattori[3], Ho-kwang Mao[1]

1. Center for High Pressure Science and Technology Advanced Research, 2. Graduate School of Science Osaka University, 3. J-PARC

Keywords: ulvöspinel, ilmenite, pseudobrookite

Oral presentation | R5: Extraterrestrial materials

Sat. Sep 14, 2024 9:00 AM - 12:00 PM JST | Sat. Sep 14, 2024 12:00 AM - 3:00 AM UTC | ES025 Higashiyama Campus

R5: Extraterrestrial materials

Chairperson:Megumi Matsumoto, Daiki Yamamoto, Yusuke Seto, Toru Matsumoto(Kyoto University)

9:00 AM - 9:15 AM JST | 12:00 AM - 12:15 AM UTC

[R5-01] Revealing Chemical Compositional Variety of Amorphous Silicate Dust around AGB Stars by Condensation Experiment and Spectroscopic Analysis

「発表賞エントリー」

*Hanako Enomoto[1], Aki Takigawa[1], Hiroki Chihara[2], Chiyoe Koike[2] (1. UTokyo, 2. Osaka Sangyo univ.)

9:15 AM - 9:30 AM JST | 12:15 AM - 12:30 AM UTC

[R5-02] Formation process of circumstellar dust studied from presolar oxides in carbonaceous chondrite DOM 08006.

「発表賞エントリー」

*Hiroyuki Hashizume[1], Aki Takigawa[1] (1. UTokyo EPSS)

9:30 AM - 9:45 AM JST | 12:30 AM - 12:45 AM UTC

[R5-03] Progress of irreversible chemical reactions on dust moving in a protoplanetary disk

*Lily Ishizaki[1], Shogo Tachibana[1] (1. UT EPS)

9:45 AM - 10:00 AM JST | 12:45 AM - 1:00 AM UTC

[R5-04] Experimental study of the effect of evaporation during temperature rise on type B CAI formation

「発表賞エントリー」

*Yasuaki Tsuruoka[1], Shogo Tachibana[1] (1. UTokyo Sci.)

10:00 AM - 10:20 AM JST | 1:00 AM - 1:20 AM UTC

[R5-05] Chondrule formation by collisions of planetesimals containing volatiles

「招待講演」

*Sin-iti Sirono[1] (1. Navoya Univ.)

10:20 AM - 10:35 AM JST | 1:20 AM - 1:35 AM UTC

[3Lecture-301-10-6add] 休憩

10:35 AM - 10:55 AM JST | 1:35 AM - 1:55 AM UTC

[R5-06] Constraining the true timescale of chondrule formation through chondrule mineral chemistry

「招待講演」

*Kohei Fukuda[1], Noriko T Kita[2], Makoto Kimura[3] (1. Osaka Univ. Sci., 2. UW-Madison, 3. NIPR)

10:55 AM - 11:10 AM JST | 1:55 AM - 2:10 AM UTC

[R5-07] Reproduction Experiments of Radial Pyroxene Chondrules Using a Gas-jet Levitation System under Reducing Conditions

「発表賞エントリー」

*Kana Watanabe[1], Tomoki Nakamura[1], Tomoyo Morita[1] (1. Tohoku Univ. Sci.)

11:10 AM - 11:25 AM JST | 2:10 AM - 2:25 AM UTC

[R5-08] Stratigraphy of poikilitic shergottite parent body(ies) as deduced from their textural and mineral compositional diversities

「発表賞エントリー」

*Sojiro Yamazaki[1], Akira Yamaguchi[2], Takashi Mikouchi[3] (1. Fac. Sci., Univ. Tokyo, 2. Natl. Inst. Polar Res., 3. Univ. Museum, Univ. Tokyo)

11:25 AM - 11:40 AM JST | 2:25 AM - 2:40 AM UTC

[R5-09] High pressure phase transition of Ti-Cr-rich spinel in Asuka 12325 Martian meteorite

*Atsushi TAKENOUCHI[1], Yohei Igami[2], Takashi Mikouchi[3], Akira Miyake[2], Akira Yamaguchi[4] (1. The Kyoto Univ. Museum, 2. Kyoto Univ. Sci., 3. The Univ. Museum, The Univ. of Tokyo, 4. NIPR)

11:40 AM - 11:55 AM JST | 2:40 AM - 2:55 AM UTC

[R5-10] Estimation of thermal history using silica minerals in mesosiderites

*Haruka OONO[1], Atsushi Takenouchi[2], Takashi Mikouchi[3], Akira Yamaguchi[4], Naoji Sugiura[5], Akira Miyake[1] (1. Kyoto Univ., 2. Museum of Kyoto Univ., 3. Museum of Univ. Tokyo, 4. NiPR, 5. Chiba Int. Tech.)

11:55 AM - 12:00 PM JST | 2:55 AM - 3:00 AM UTC

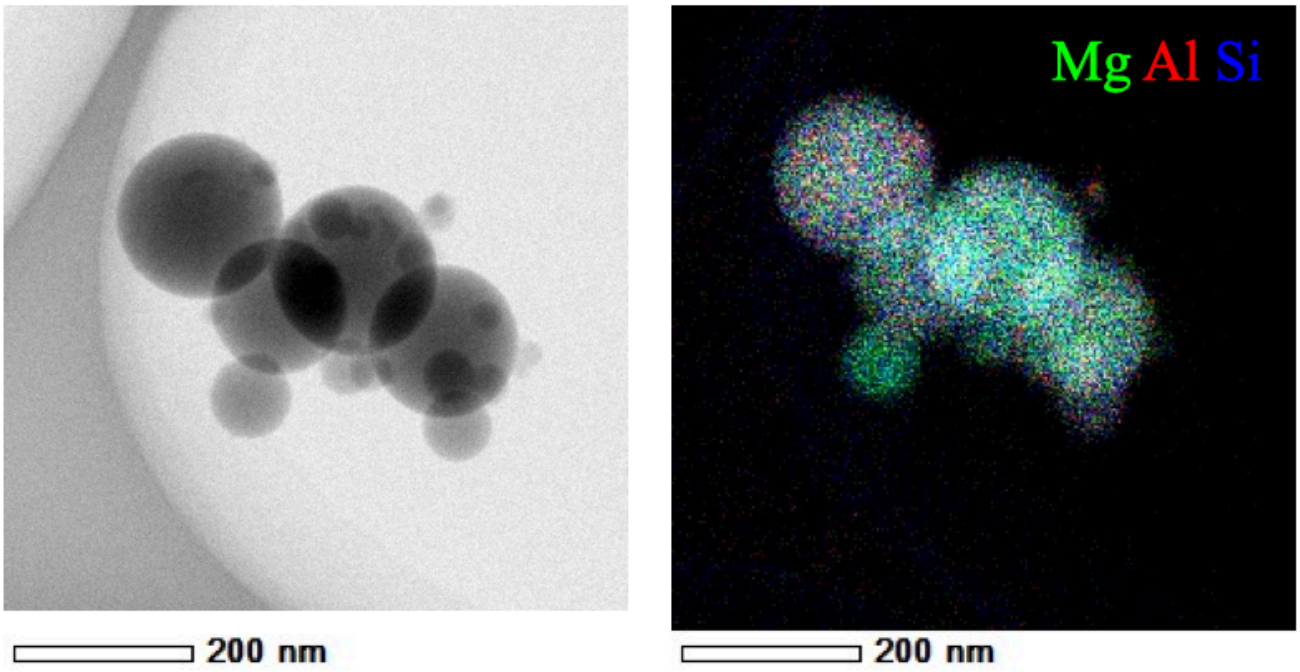
調整

Revealing Chemical Compositional Variety of Amorphous Silicate Dust around AGB Stars by Condensation Experiment and Spectroscopic Analysis

*Hanako Enomoto[1], Aki Takigawa[1], Hiroki Chihara[2], Chiyoe Koike[2]

1. UTokyo, 2. Osaka Sangyo univ.

Keywords: circumstellar dust, amorphous silicate, presolar grain, experiment, spectroscopy



実験で生成した非晶質ナノ粒子のSTEM-BF像(左)とSTEM-EDS元素マップ(右)

Formation process of circumstellar dust studied from presolar oxides in carbonaceous chondrite DOM 08006.

*Hiroyuki Hashizume[1], Aki Takigawa[1]

1. UTokyo EPSS

Keywords: Presolar grains, meteorite, spinel, circumstellar dust, oxides

Progress of irreversible chemical reactions on dust moving in a protoplanetary disk

*Lily Ishizaki[1], Shogo Tachibana[1]

1. UT EPS

Keywords: protoplanetary disk, protosolar disk, dust, Monte Carlo simulation

Experimental study of the effect of evaporation during temperature rise on type B CAI formation

*Yasuaki Tsuruoka[1], Shogo Tachibana[1]

1. UTokyo Sci.

Keywords: CAIs, melting, evaporation, crystal growth, protosolar disk

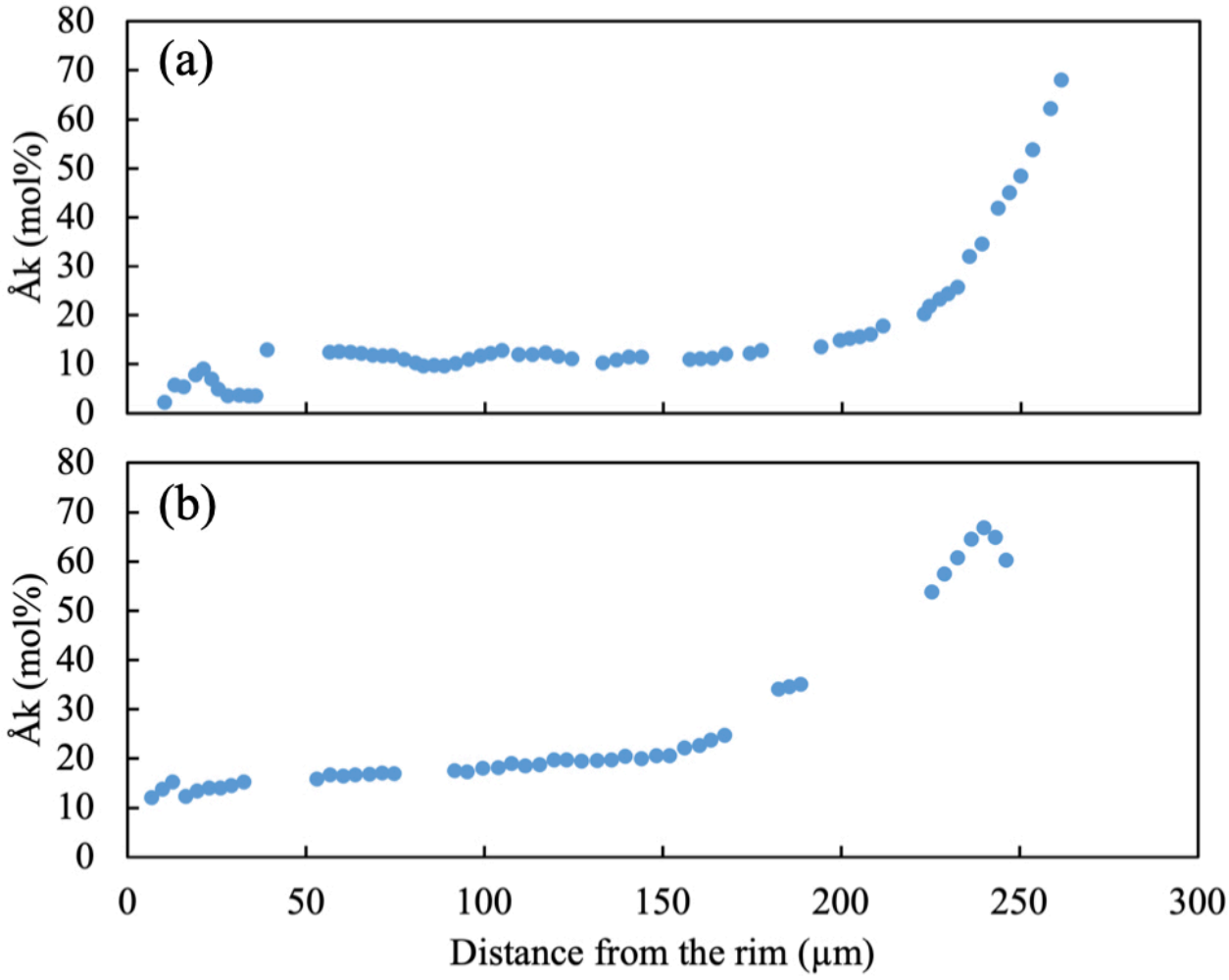


図１．メリライトマントルの組成ゾーニング．最高温度からの冷却過程のみ水素を導入した試料 (a) では，組成がほぼ一定の部分が見られる一方，昇温時から水素を導入した試料 (b) では，試料中心に向かって緩やかにオケルマナイト (Åk) 成分の割合が上昇している．

Chondrule formation by collisions of planetesimals containing volatiles

*Sin-iti Sirono[1]

1. Navoya Univ.

Keywords: chondrule, planetesimal, collision

Oral presentation

R5: Extraterrestrial materials

Chairperson:Megumi Matsumoto, Daiki Yamamoto, Yusuke Seto, Toru Matsumoto(Kyoto University)
Sat. Sep 14, 2024 9:00 AM - 12:00 PM ES025 (Higashiyama Campus)

10:20 AM - 10:35 AM

[3Lecture-301-10-6add]休憩

Constraining the true timescale of chondrule formation through chondrule mineral chemistry

*Kohei Fukuda[1], Noriko T Kita[2], Makoto Kimura[3]

1. Osaka Univ. Sci., 2. UW-Madison, 3. NIPR

Keywords: chondrule, Al-Mg chronology, plagioclase, excess Si

Reproduction Experiments of Radial Pyroxene Chondrules Using a Gas-jet Levitation System under Reducing Conditions

*Kana Watanabe[1], Tomoki Nakamura[1], Tomoyo Morita[1]

1. Tohoku Univ. Sci.

Keywords: chondrule, pyroxene, levitation experiment, partition coefficients, reduction reaction

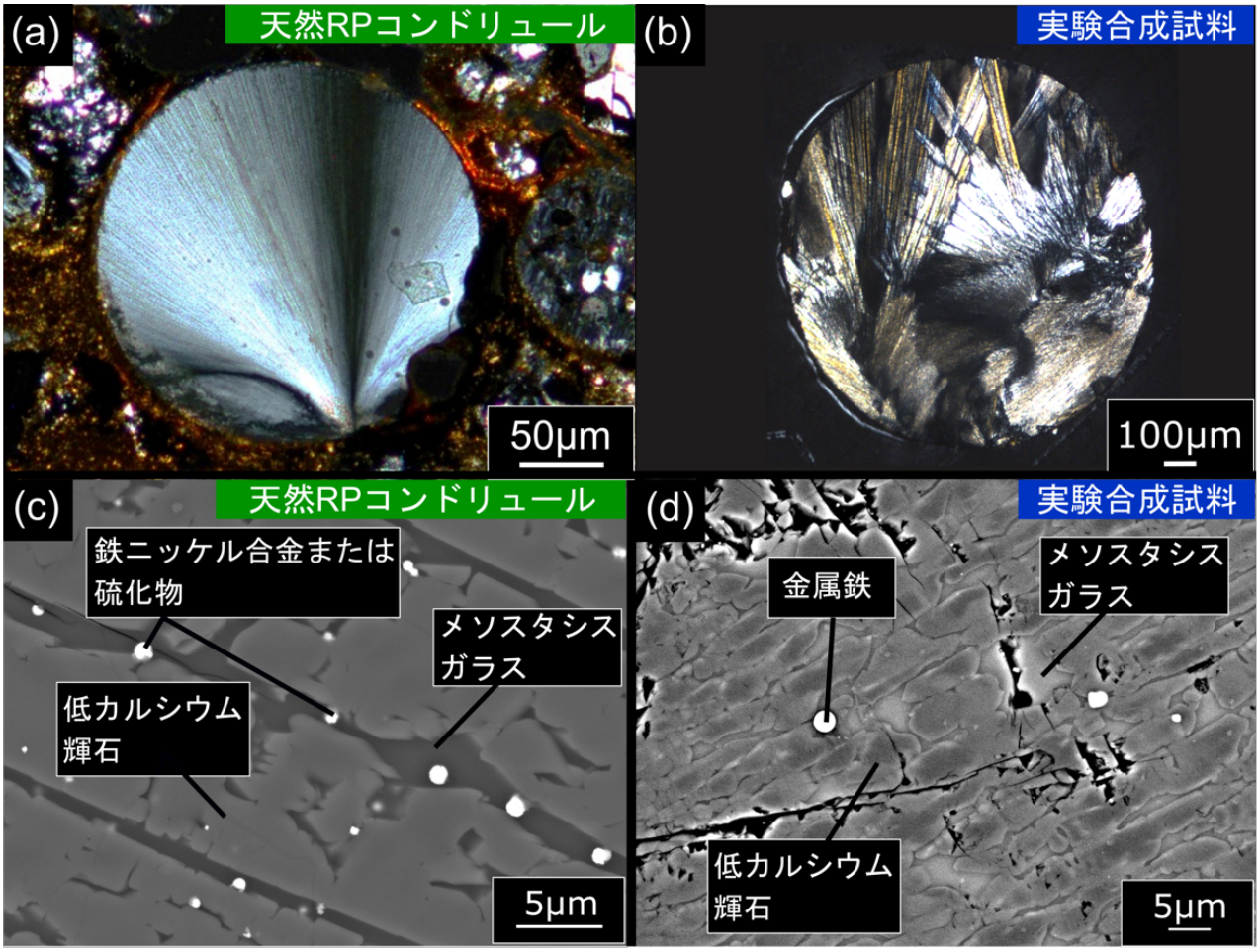


図１．天然RPコンドリュールと実験合成試料の比較。(a)-(b)偏光顕微鏡による観察像(クロスニコル像)、(c)-(d)SEM-BSE像。(d)の実験合成試料は1536℃で3600秒間温度保持した。

Stratigraphy of poikilitic shergottite parent body(ies) as deduced from their textural and mineral compositional diversities

*Sojiro Yamazaki[1], Akira Yamaguchi[2], Takashi Mikouchi[3]

1. Fac. Sci., Univ. Tokyo, 2. Natl. Inst. Polar Res., 3. Univ. Museum, Univ. Tokyo

Keywords: Poikilitic shergottite, Olivine, Pyroxene, Intrusion, Cooling rate

High pressure phase transition of Ti-Cr-rich spinel in Asuka 12325 Martian meteorite

*Atsushi TAKENOUCHI[1], Yohei Igami[2], Takashi Mikouchi[3], Akira Miyake[2], Akira Yamaguchi[4]

1. The Kyoto Univ. Museum, 2. Kyoto Univ. Sci., 3. The Univ. Museum, The Univ. of Tokyo, 4. NIPR

Keywords: Chromite, Martian meteorite, shock metamorphism, high-pressure phase transition

Estimation of thermal history using silica minerals in mesosiderites

*Haruka OONO[1], Atsushi Takenouchi[2], Takashi Mikouchi[3], Akira Yamaguchi[4], Naoji Sugiura[5], Akira Miyake[1]

1. Kyoto Univ., 2. Museum of Kyoto Univ., 3. Museum of Univ. Tokyo, 4. NiPR, 5. Chiba Int. Tech.

Keywords: Mesosiderite, Silica minerals, Tridymite, Cristobalite, Meteorites

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

Sat. Sep 14, 2024 2:00 PM - 3:00 PM JST | Sat. Sep 14, 2024 5:00 AM - 6:00 AM UTC | ES Hall Higashiyama Campus

R6: Plutonic rocks, volcanic rocks and subduction factory

Chairperson:Takashi Hoshide(Akita University)

2:00 PM - 2:20 PM JST | 5:00 AM - 5:20 AM UTC

[R6-12] Zirconium minerals in ultramafic rocks

「招待講演」

*Hikaru Sawada[1,2], Ryosuke Oyanagi[3,2] (1. University of Toyama, 2. JAMSTEC, 3. Kokushikan University)

2:20 PM - 2:35 PM JST | 5:20 AM - 5:35 AM UTC

[R6-13] Estimation of physical conditions during granitic magma crystallization process using melt inclusions in zircon

*Yuka TANIWAKI[1], Satoshi SAITO[2] (1. Ciatec.,Co LTD, 2. Ehime Univ.)

2:35 PM - 2:50 PM JST | 5:35 AM - 5:50 AM UTC

[R6-14] Estimation of TiO_2 activity for accurate determination of quartz crystallization temperature

*Yasuhiro OGITA[1], Takenori Kato[2], Takashi Yuguchi[3] (1. Yamagata Univ., 2. Nagoya Univ., 3. Kumamoto Univ.)

2:50 PM - 3:00 PM JST | 5:50 AM - 6:00 AM UTC

調整

Zirconium minerals in ultramafic rocks

*Hikaru Sawada[1,2], Ryosuke Oyanagi[3,2]

1. University of Toyama, 2. JAMSTEC, 3. Kokushikan University

Keywords: Serpentinite, Peridotite, Zircon, Baddeleyite

Estimation of physical conditions during granitic magma crystallization process using melt inclusions in zircon

*Yuka TANIWAKI[1], Satoshi SAITO[2]

1. Ciatec.,Co LTD, 2. Ehime Univ.

Keywords: melt inclusion, granite, zircon, physical conditions

Estimation of TiO_2 activity for accurate determination of quartz crystallization temperature

*Yasuhiro OGITA[1], Takenori Kato[2], Takashi Yuguchi[3]

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

No abstract in English.

Keywords: Quartz, Cathodoluminescence pattern, Ti concentration, TiO2 activity, Tono Plutonic Complex

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

Sat. Sep 14, 2024 2:00 PM - 3:30 PM JST | Sat. Sep 14, 2024 5:00 AM - 6:30 AM UTC | ES024 Higashiyama Campus

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

Chairperson:Kazuki 小松 Komatsu

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

[R2-12] Structural stabilization of pyrite-type compounds and chemical bonds of anions.

「招待講演」

*Akira YOSHIASA[1], Makoto Tokuda[1], Ginga Kitahara[1], Akihiko Nakatsuka[2], Kazumasa Sugiyama[3] (1. Kumamoto University, 2. Yomaguchi University, 3. Tohoku University)

2:30 PM - 2:45 PM JST | 5:30 AM - 5:45 AM UTC

[R2-13] Formation of Fundamental Building Blocks Composed of Calcium Borate Minerals

「発表賞エントリー」

*Kosuke Yamaguchi[1], Atsushi Kyono[2], Satoru Okada[1], Hiroki Hasegawa[1] (1. Univ of Tsukuba. Grad. Sch. of Life and Env., Sci, 2. Univ of Tsukuba. Life and Environmental Science)

2:45 PM - 3:00 PM JST | 5:45 AM - 6:00 AM UTC

[R2-14] Crystal structures of kimuraite-(Y) and lokkaite-(Y)

*Ritsuro Miyawaki[1], Koichi Momma[1] (1. National Museum of Nature and Science)

3:00 PM - 3:15 PM JST | 6:00 AM - 6:15 AM UTC

[R2-15] Thermal Vibration of Oxygen atoms in Keatite Crystal

*Fumiya NORITAKE[1] (1. University of Yamanashi)

3:15 PM - 3:30 PM JST | 6:15 AM - 6:30 AM UTC

[R2-16] Development of a simulation method for electron back-scattered diffraction based on dynamical theory and its application to mineralogy

*Yusuke SETO[1], Masahiro Ohtsuka[2] (1. Osaka Metropolitan Univ. Sci., 2. Nagoya Univ. Sci. IMaSS.)

Structural stabilization of pyrite-type compounds and chemical bonds of anions.

*Akira YOSHIASA[1], Makoto Tokuda[1], Ginga Kitahara[1], Akihiko Nakatsuka[2], Kazumasa Sugiyama[3]

1. Kumamoto University, 2. Yomaguchi University, 3. Tohoku University

Precise structural analyses of various compounds with pyrite-type structure were performed by selecting single crystals from synthetic and natural mineral crystals. The measurements of Debye temperatures of the compounds will be reported as one of the usefulness of single crystal diffraction method. Certain regularities regarding structural stabilization and physical properties are found in pyrite-type compounds.

Keywords: AuSb2, RuS2, pyrite-type compounds, single crystal diffraction, Debye temperature

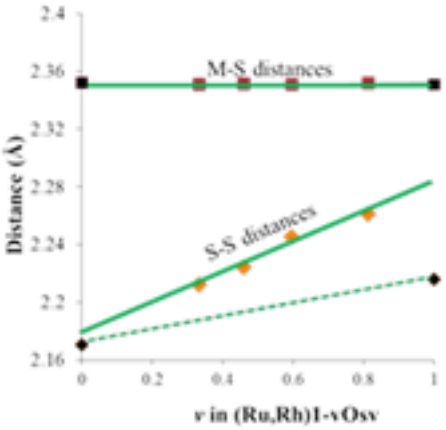


Fig. 1. Compositional dependences in M-S and S-S bonding distances with respect to Os content in the erlichmanite - laurite solid solutions (Os1-x-yRuxRhyS2) (y=0.07–0.10)[3].

Formation of Fundamental Building Blocks Composed of Calcium Borate Minerals

*Kosuke Yamaguchi[1], Atsushi Kyono[2], Satoru Okada[1], Hiroki Hasegawa[1]

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

Keywords: hydrothermal method, dissolution-reprecipitation, gowerite, priceite, nobleite

Crystal structures of kimuraite-(Y) and lokkaite-(Y)

*Ritsuro Miyawaki[1], Koichi Momma[1]

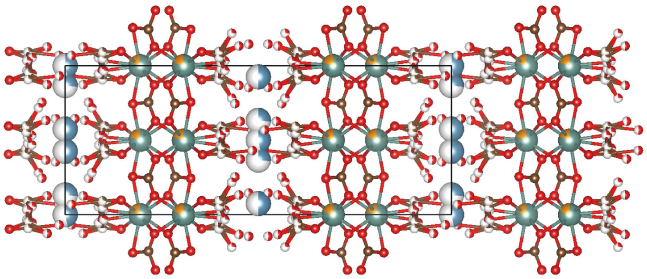
1. National Museum of Nature and Science

The crystal structures of kimuraite-(Y) and lokkaite-(Y) were re-examined by means of the twining and statistical ordering models with the space groups following to the individual extinction rules in their single crystal XRD data. The crystal structure of kimuraite-(Y) determined with the space group *I*222 is harmonic with that previously determined with the space group *I*2*cb*. The crystal structure of lokkaite-(Y) was analyzed with the monoclinic space group *Cm* to determine the mean structure in the *C*222. Each crystal structure of kimuraite-(Y) and lokkaite-(Y) consists of two types of layers: a flat calcium layer and a corrugated rare earth layer (Figure). The rare earth atoms are coordinated to 9 oxygen atoms. The 9-coordinated polyhedra are connected with the wedging triangle of carbonate anion to form the corrugated rare earth layer, as those in the crystal structure of tengerite-(Y). Calcium atoms statistically order into the Ca sites at the middle of the flat calcium layer. The C and O atoms neighboring to the Ca atoms should be shifted with the statistical occupancies. The crystal structures of kimuraite-(Y) and lokkaite-(Y) differ from each other in the sequence of stacking layers corresponding to the ratio of calcium and rare earths atoms.

Keywords: kimuraite-(Y), lokkaite-(Y), crystal structure

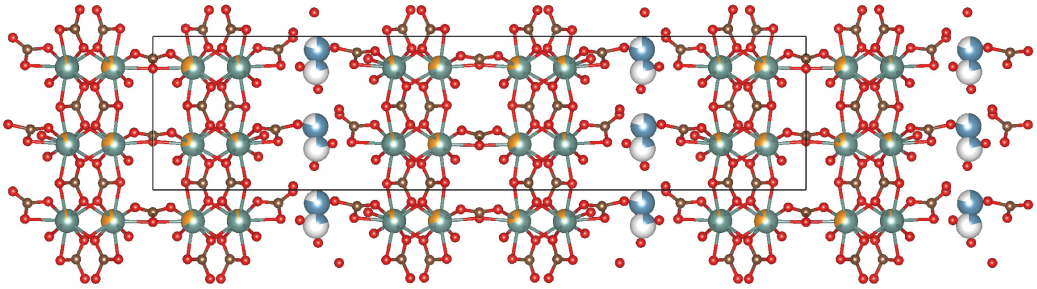
Kimuraite-(Y)

a **= 9.2673(7)**
b **= 24.0435(2)**
c = 6.0537(2)



Lokkaite-(Y)

a **= 9.242(4)**
b **= 39.328(18)**
c = 6.110(2)



Tengerite-(Y)

a **= 9.157(2)**
b **= 15.114((6)**
c = 6.078(4)

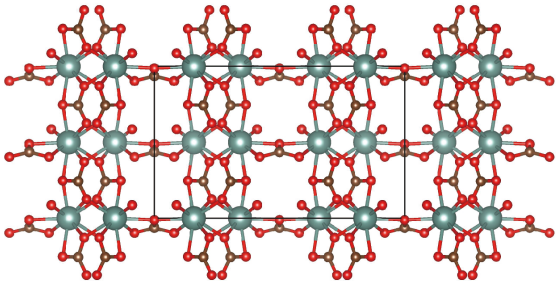


図　木村石、ロッカ石、テンゲル石の結晶構造

Thermal Vibration of Oxygen atoms in Keatite Crystal

*Fumiya NORITAKE[1]

1. University of Yamanashi

Keywords: Keatite, Negative Thermal Expansion, Molecular Dynamics Simulation

Development of a simulation method for electron back-scattered diffraction based on dynamical theory and its application to mineralogy

*Yusuke SETO[1], Masahiro Ohtsuka[2]

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

Keywords: Electron back-scattered diffraction, Bloch wave, Dynamical theory

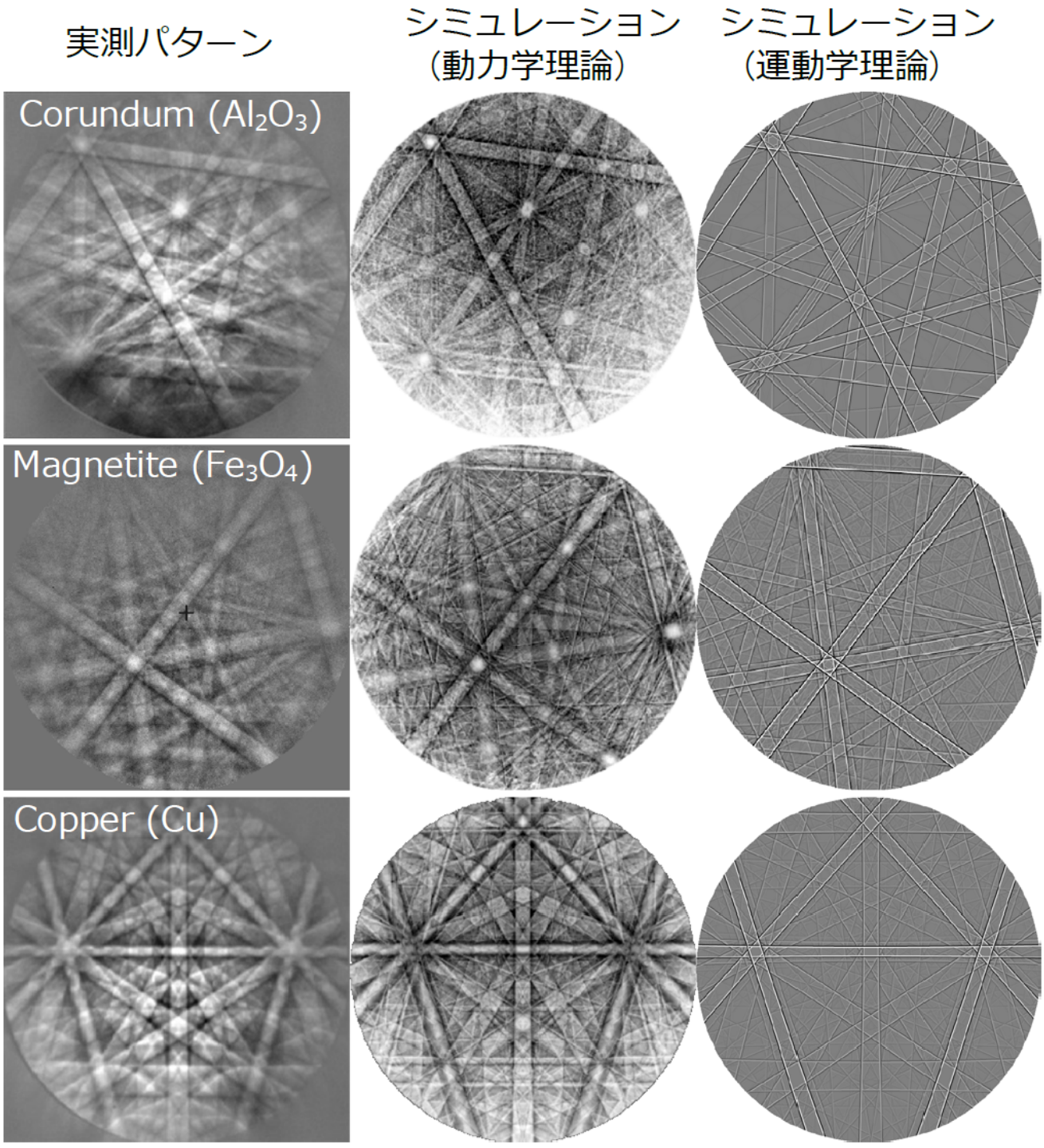


図. 実測のEBSDパターンと発表者らのシミュレーション結果との比較

Oral presentation | R5: Extraterrestrial materials

Sat. Sep 14, 2024 2:00 PM - 3:30 PM JST | Sat. Sep 14, 2024 5:00 AM - 6:30 AM UTC | ES025 Higashiyama Campus

R5: Extraterrestrial materials

Chairperson:Megumi Matsumoto, Daiki Yamamoto, Yusuke Seto, Toru Matsumoto(Kyoto University)

2:00 PM - 2:15 PM JST | 5:00 AM - 5:15 AM UTC

[R5-11] Mineralogy of micrometeoroids captured in silica aerogel aboard the ISS by the Dandelion Project

*Takaaki NOGUCHI[1], Akira MIYAKE[1], Hikaru Yabuta[2], Yoko Kebukawa[3], Daiki Suga[4], Makoto Tabata[5], Kyoko Okudaira[6], Akihiko Yamagishi[7], Hajime Yano[8] (1. Kyoto University, 2. Hiroshima University, 3. Tokyo Institute of Technology, 4. JASRI, 5. Chiba University, 6. University of Aizu, 7. Tokyo University of Pharmacy and Life Sciences, 8. JAXA)

2:15 PM - 2:30 PM JST | 5:15 AM - 5:30 AM UTC

[R5-12] STEM analysis of sodium-rich grains recovered from asteroid Ryugu

*Toru MATSUMOTO[1], Takaaki Noguchi[1], Toru Araki[2], Hayato Yuzawa[2], Akira Miyake[1] (1. Kyoto University, 2. UVSOR)

2:30 PM - 2:45 PM JST | 5:30 AM - 5:45 AM UTC

[R5-13] Important occurrence of amorphous hydrated Na-bearing Mg phosphate in Asteroid Ryugu samples and CI chondrites

*Takashi MIKOUCHI[1], Hideto Yoshida[2], Satoru Hayashi[2], Minami Masuda[2], Hiroyuki Kagi[2], Kazumasa Sugiyama[3], Tomoki Nakamura[4], Michael Zolensky[5] (1. Univ. Museum, Univ. of Tokyo, 2. Fac. of Sci., Univ. of Tokyo, 3. Inst. Mat. Res., Tohoku Univ., 4. Fac. of Sci., Tohoku Univ., 5. NASA-JSC)

2:45 PM - 3:00 PM JST | 5:45 AM - 6:00 AM UTC

[R5-14] On the relationship between lithological classification and degree of aqueous alteration in Asteroid Ryugu samples

*Minami Masuda[1], Takashi Mikouchi[2], Hideto Yoshida[1], Tomoki Nakamura[3], Michael Zolensky[4] (1. Univ. Tokyo, Sci., 2. Univ. Tokyo, Univ. Museum, 3. Tohoku Univ., Sci., 4. NASA-JSC)

3:00 PM - 3:15 PM JST | 6:00 AM - 6:15 AM UTC

[R5-15] Highly primitive clasts with GEMS-like grains in Ryugu C0002 sample

*Megumi MATSUMOTO[1], Akira Tsuchiyama[2,3], Masahiro Yasutake[4], Tomoki Nakamura[1] (1. Tohoku Univ., 2. Ritsumeikan Univ., 3. GIG, 4. JASRI/SPring-8)

3:15 PM - 3:30 PM JST | 6:15 AM - 6:30 AM UTC

[R5-16] Aqueous alteration experiments using GEMS simulant particles

*Akira TSUCHIYAMA[1,2], Satomi Enju[3], Haiyang Xian[1], Mingqi Sun[1], Ding Xing[1], Yuanyuan Wang[4], Zhaolu He[1], Jing Du[1], Shan Li[1], Jiaxin Xi[1], Xiaoju Lin[1], Jian Di[1], Yuto Imura[5] (1. Guangzhou Inst. Geochem., 2. Ritsumeikan Univ., 3. Ehime Univ. Sci, 4. Tokyo Univ. Sci., 5. Kyoto Univ. Sci.)

Mineralogy of micrometeoroids captured in silica aerogel aboard the ISS by the Dandelion Project

*Takaaki NOGUCHI[1], Akira MIYAKE[1], Hikaru Yabuta[2], Yoko Kebukawa[3], Daiki Suga[4], Makoto Tabata[5], Kyoko Okudaira[6], Akihiko Yamagishi[7], Hajime Yano[8]

1. Kyoto University, 2. Hiroshima University, 3. Tokyo Institute of Technology, 4. JASRI, 5. Chiba University, 6. University of Aizu, 7. Tokyo University of Pharmacy and Life Sciences, 8. JAXA

Keywords: micrometeoroid, TANPOPO mission, International Space Station, pyroxene

STEM analysis of sodium-rich grains recovered from asteroid Ryugu

*Toru MATSUMOTO[1], Takaaki Noguchi[1], Toru Araki[2], Hayato Yuzawa[2], Akira Miyake[1]

1. Kyoto University, 2. UVSOR

Keywords: Ryugu

Important occurrence of amorphous hydrated Na-bearing Mg phosphate in Asteroid Ryugu samples and CI chondrites

*Takashi MIKOUCHI[1], Hideto Yoshida[2], Satoru Hayashi[2], Minami Masuda[2], Hiroyuki Kagi[2], Kazumasa Sugiyama[3], Tomoki Nakamura[4], Michael Zolensky[5]

1. Univ. Museum, Univ. of Tokyo, 2. Fac. of Sci., Univ. of Tokyo, 3. Inst. Mat. Res., Tohoku Univ., 4. Fac. of Sci., Tohoku Univ., 5. NASA-JSC

Keywords: Mg phosphate, Asteroid Ryugu, CI chondrites, Aqueous alteration, Asteroid Bennu

On the relationship between lithological classification and degree of aqueous alteration in Asteroid Ryugu samples

*Minami Masuda[1], Takashi Mikouchi[2], Hideto Yoshida[1], Tomoki Nakamura[3], Michael Zolensky[4]

1. Univ. Tokyo, Sci., 2. Univ. Tokyo, Univ. Museum, 3. Tohoku Univ., Sci., 4. NASA-JSC

Keywords: Asteroid Ryugu, CI chondrite, aqueous alteration, brecciation

Highly primitive clasts with GEMS-like grains in Ryugu C0002 sample

*Megumi MATSUMOTO[1], Akira Tsuchiyama[2,3], Masahiro Yasutake[4], Tomoki Nakamura[1]

1. Tohoku Univ., 2. Ritsumeikan Univ., 3. GIG, 4. JASRI/SPring-8

Keywords: asteroid (162173) Ryugu, GEMS, Aqueous alteration

Aqueous alteration experiments using GEMS simulant particles

*Akira TSUCHIYAMA[1,2], Satomi Enju[3], Haiyang Xian[1], Mingqi Sun[1], Ding Xing[1], Yuanyuan Wang[4], Zhaolu He[1], Jing Du[1], Shan Li[1], Jiaxin Xi[1], Xiaoju Lin[1], Jian Di[1], Yuto Imura[5]

1. Guangzhou Inst. Geochem., 2. Ritsumeikan Univ., 3. Ehime Univ. Sci, 4. Tokyo Univ. Sci., 5. Kyoto Univ. Sci.

Samples from the asteroid Ryugu by the Hayabusa2 spacecraft correspond to CI chondrites (e.g., [1]). In this study, to reproduce the initial stages of aqueous alteration of Ryugu parent body [2], we performed an aqueous alteration experiment using GEMS simulant particles, prepared by the induction thermal plasma (ITP) [3] with CI or GEMS average composition. Aqueous solutions of formic acid, hexamethylenetetramine, ammonium acetate, and/or ammonium hydrogen carbonate were heated at 200˚C for 168~1550 hours in a sealed Teflon container with the GEMS simulant with the rock/water ratio of 5 (or 1). Run products were analyzed by XRD, SEM/EDS, TEM/EELS, and micro-Raman spectroscopy.In all runs, low-crystallinity hydrous layered silicates (Mg silicate hydrate: M-S-H) were formed. Hematite, maghemite or magnetite + hematite formed as Fe oxides consisted of fine particles (~a few 10 nm) and occasionally dendrites within a M-S-H matrix (Fig. 1a). The run products may represent the very early state of aqueous alteration. In most runs, small amounts of anhydrite were formed, but no carbonate formed. Organic crystals and ammonium sulfates also formed. IOM with G and D bands were confirmed by Raman spectroscopy.The run products are aggregates of several 10 μm sized clasts with different porosities (Fig. 1b), which reflects the original texture of the starting material. Ryugu sample matrix of similar texture [2] may be inherited from that formed by accumulation in the parent body. The present experiment was not fully successful in reproducing the minerals and their morphologies as seen in the Ryugu samples. In particular, the formation of maghemite and anhydrite indicates that further experiments under more reducing conditions are necessary.[1] Nakamura T. et al. (2023) Science, 379, eabn867. [2] Tsuchiyama A. et al. (2024) GCA, 375, 146-172. [3] Enju S. et al. (2022) A&A, 661, A121.

Keywords: Ryugu samples, Mg-S-H, carbonaceous chondrites, GEMS-like material, induction thermal plasma

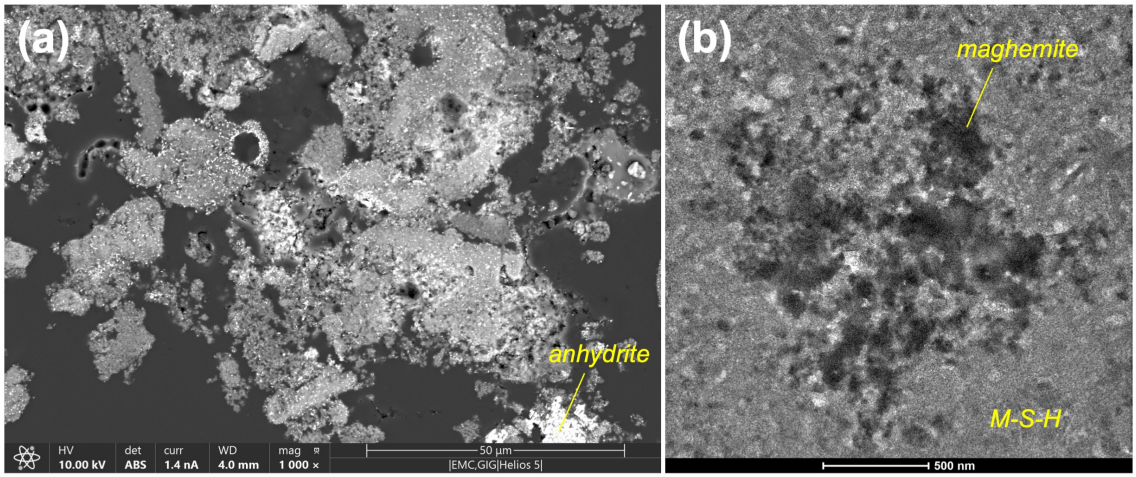


Figure 1. (a) SEM/BSE image of Run 11 (CI composition, water + NH_4HCO_3: $X(CO_2)/X(H_2O)$=0.0317, $X(NH_3)/X(H_2O)$=0.0317, W/R=5, 200°C, 1550 hrs.). Different brightness of matrix roughly corresponds to different porosity. (b) TEM/bright field image of Run 07 (CI composition, water + CH_2O_2: $X(CO_2)/X(H_2O)$= 0.0435, $X(NH_3)/X(H_2O)$=0, W/R=5, 200°C, 168 hrs.) showing a dendritic aggregate of maghemite.

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

Sat. Sep 14, 2024 12:30 PM - 2:00 PM JST | Sat. Sep 14, 2024 3:30 AM - 5:00 AM UTC | Entrance Hall Higashiyama Campus

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

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

[R2-P-01] Advanced four-circle goniometer system for single-crystal diffraction measurements at BL-10A, PF: anomalous X-ray scattering method & in situ high-pressure experiments

*Takahiro KURIBAYASHI[1], Ryo Yamane[2], Keita Harada[1], Toshiro Nagase[3], Kazumasa Sugiyama[2] (1. Tohoku University (Sci), 2. Tohoku University (IMR), 3. Tohoku University (Mus))

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

[R2-P-02] Fine Structural Analysis using Single-Crystal Anomalous X-ray Scattering in KEK Photon Factory BL-6C

*Makoto TOKUDA[1], Takumi Ichimura[2], Koichi Momma[6], Ritsuro Miyawaki[6], Takashi Mikouchi[4], Akira Yoshiasa[3], Kazumasa Sugiyama[5] (1. IINa, Kumamoto Univ., 2. Tohoku Univ. Eng, 3. Kumamoto Univ. Sci, 4. Univ. of Tokyo UMUT , 5. IMR, Tohoku Univ., 6. Nat'l. Mus. Nat. Sci.)

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

[R2-P-03] Evaluation of Fe K-edge XANES anisotropy and accurate determination of micro-area Fe^{2+}/Fe^{3+} in clinopyroxene using multivariate analysis

「発表賞エントリー」

*Taisuke Ito[1], Simon Richard Wallis[1], Yoshio Takahashi[1] (1. The Univ. of Tokyo, EPS)

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

[R2-P-04] Fine structural analysis of Diopside (Violan) containing Mn and Fe

「発表賞エントリー」

*Hayato Chiba[1], Kazumasa Sugiyama[2], Makoto Tokuda[3], Takashi Mikouchi[4] (1. Tohoku Univ. Eng., 2. Tohoku Univ. IMR, 3. Kumamoto Univ. IINa, 4. UMUT)

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

[R2-P-05] Single-crystal X-ray diffraction study of a largely Cs-exchanged natural Ca-chabazite: crystal-chemical factors for its excellent Cs-exchange ability

Naomi KAWATA[1], Ryo FURUHASHI[1], Keiko FUJIWARA[1], Makio OHKAWA[2], *Akihiko NAKATSUKA[1] (1. Yamaguchi Univ. Sci. Tech. Innov., 2. Hiroshima Univ. Adv. Sci. Eng.)

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

[R2-P-06] Distribution of Mn^{3+} and Mn^{4+} studied by X anomalous scattering: the details of 3×4 tunneled structure formed by MnO_6 octahedron in woodruffite

「発表賞エントリー」

*Christopher Miyazaki[1], Ryo Yamane[2], Kazumasa Sugiyama[2], Makoto Tokuda[3], Takeshi Mikouchi[4] (1. Tohoku Univ. Eng., 2. Tohoku Univ. IMR, 3. Kumamoto Univ. IINa, 4. UMUT)

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

[R2-P-07] Mg^{2+} and Ba^{2+} ion-exchange of GTS-type Na titanosilicate and its structural characterization

*Keiko FUJIWARA[1], Naomi Kawata[1], Akihiko Nakatsuka [1] (1. Yamaguchi Univ. Sci. Tech. Innov.)

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

[R2-P-08] Distribution of Fe^{3+} among tetrahedral sites and crystal structural change of gehlenite-Fe^{3+} gehlenite

*Maki HAMADA[1], Mariko Nagashima[2] (1. Kanazawa University, 2. Yamaguchi University)

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

[R2-P-09] Crystallographic site preference of impurity elements in olivine by ALCHEMI method

*Yohei IGAMI[1], Akira MIYAKE[1], Ryo WAKABAYASHI[1], Norikatsu AKIZAWA[2] (1. Kyoto University, 2. The University of Tokyo)

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

[R2-P-10] Precipitated structures of pyroxene lamellar with various directions

*Shoichi TOH[1] (1. Fukuoka University)

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

[R2-P-11] Crystal chemistry of bridgmanite with Al/Fe contents expected in MORB component

*Akihiko NAKATSUKA[1], Hiroshi FUKUI[2], Seiji KAMADA[3], Naohisa HIRAO[2], Makio OHKAWA[4], Kazumasa SUGIYAMA[5], Takashi YOSHINO[6] (1. Yamaguchi Univ. Sci. Tech. Innov., 2. JASRI, 3. AD Science Inc., 4. Hiroshima Univ. Adv. Sci. Eng., 5. Tohoku Univ. IMR, 6. Okayama Univ. IPM)

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

[R2-P-12] Mechanism of the pressure-induced crystallization of amorphous calcium carbonate

*Chiho Morita[1], Hiroki Kobayashi[1], Hiroyuki Kagi[1] (1. UTokyo. Sci.)

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

[R2-P-13] Differences in the effects of Li and Cs on the calcitization of vaterite.

*Noboru FURUKAWA[1], Ami Kinoda[2] (1. Chiba University, 2. NIWAKA)

Advanced four-circle goniometer system for single-crystal diffraction measurements at BL-10A, PF: anomalous X-ray scattering method & in situ high-pressure experiments

*Takahiro KURIBAYASHI[1], Ryo Yamane[2], Keita Harada[1], Toshiro Nagase[3], Kazumasa Sugiyama[2]

1. Tohoku University (Sci), 2. Tohoku University (IMR), 3. Tohoku University (Mus)

Keywords: anomalous X-ray scattering, In situ single-crystal X-ray diffraction, synchrotron radiation

Fine Structural Analysis using Single-Crystal Anomalous X-ray Scattering in KEK Photon Factory BL-6C

*Makoto TOKUDA[1], Takumi Ichimura[2], Koichi Momma[6], Ritsuro Miyawaki[6], Takashi Mikouchi[4], Akira Yoshiasa[3], Kazumasa Sugiyama[5]

1. IINa, Kumamoto Univ., 2. Tohoku Univ. Eng, 3. Kumamoto Univ. Sci, 4. Univ. of Tokyo UMUT , 5. IMR, Tohoku Univ., 6. Nat' l. Mus. Nat. Sci.

Keywords: Anomalous X-ray Scattering, Single-crystal X-ray Diffraction, Element Distribution, Valence-Difference Contrast

Evaluation of Fe K-edge XANES anisotropy and accurate determination of micro-area Fe^{2+}/Fe^{3+} in clinopyroxene using multivariate analysis

*Taisuke Ito[1], Simon Richard Wallis[1], Yoshio Takahashi[1]

1. The Univ. of Tokyo, EPS

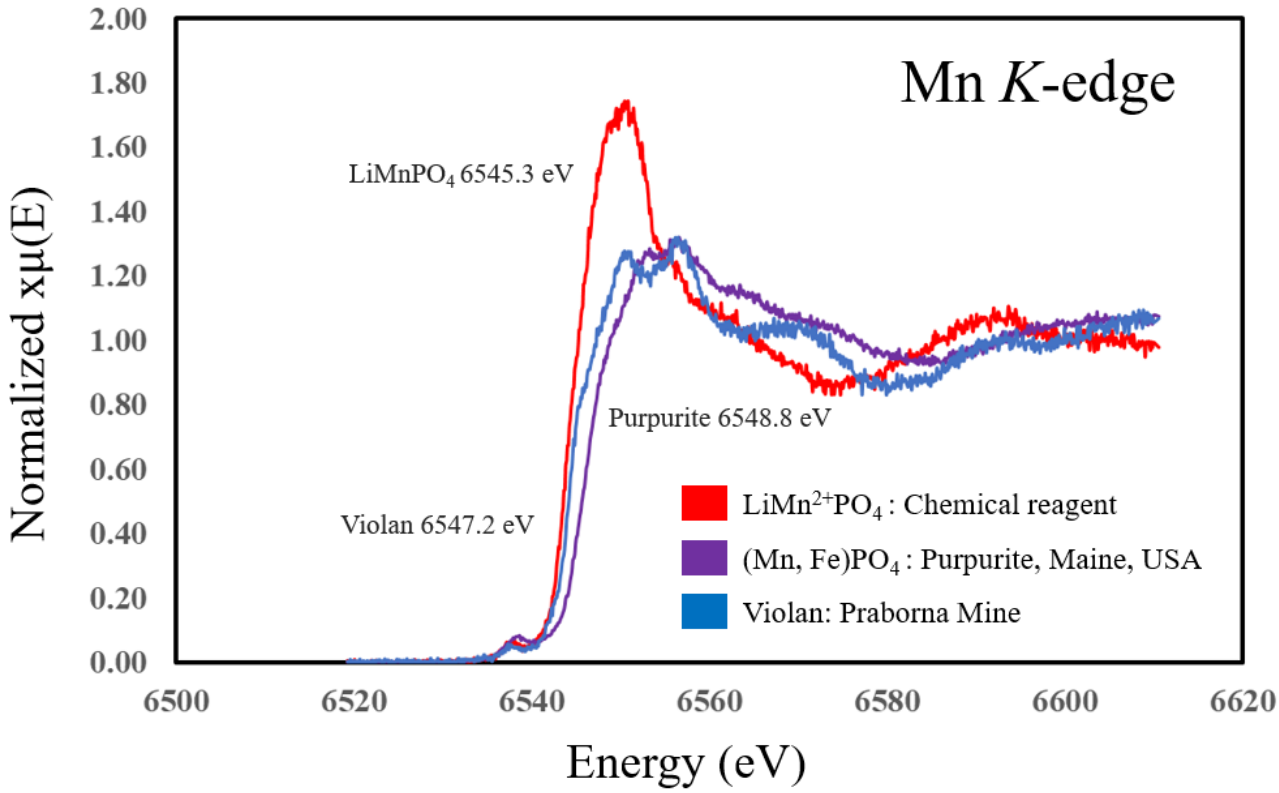
Keywords: XAFS spectroscopy, clinopyroxene, Fe2+/Fe3+, multivariate analysis

Fine structural analysis of Diopside (Violan) containing Mn and Fe

*Hayato Chiba[1], Kazumasa Sugiyama[2], Makoto Tokuda[3], Takashi Mikouchi[4]

1. Tohoku Univ. Eng., 2. Tohoku Univ. IMR, 3. Kumamoto Univ. IINa, 4. UMUT

Keywords: Diopside, Violan, AXS, XANES



Single-crystal X-ray diffraction study of a largely Cs-exchanged natural Ca-chabazite: crystal-chemical factors for its excellent Cs-exchange ability

Naomi KAWATA[1], Ryo FURUHASHI[1], Keiko FUJIWARA[1], Makio OHKAWA[2], *Akihiko NAKATSUKA[1]

1. Yamaguchi Univ. Sci. Tech. Innov., 2. Hiroshima Univ. Adv. Sci. Eng.

The amount of contaminated water generated by the Fukushima Daiichi Nuclear Power Plant accident, caused by the Great East Japan Earthquake (March 11, 2011), continues to increase and has become a serious problem. Among the radioactive elements contained in contaminated water, ^{137}Cs (30.1 years) and ^{90}Sr (28.8years) with a long half-life were released in large quantities by the nuclear accident. The search and development of ion-exchangers for highly efficient recovery and removal of these radioactive elements are eagerly desired. Currently, natural zeolite minerals such as chabazite, mordenite and clinoptilolite are practically utilized at the crippled nuclear power plant as the radioactive element removers. To design and develop highly-effective radioactive element removers, it is significant to reveal the relationship between the crystal structural features and the exchange abilities for radioactive ions. Here we conduct the single-crystal X-ray diffraction study of a hydrated natural Ca-chabazite from Burnt Cabin Creek, Spray, Wheeler Co., Oregon, USA and its largely Cs-exchanged form. The sample compositions are $(Ca_{1.86}Na_{0.13}K_{0.09})(Al_{3.98}Si_{8.03})O_{24}\cdot 12.38H_2O$ for the former and $(Cs_{2.66}Ca_{0.45}Na_{0.04}K_{0.10})(Al_{4.04}Si_{8.04})O_{24}\cdot 8.52H_2O$ for the latter.

We revealed that the Cs-exchanged form has the essentially ten occupied-sites in extraframework: four water sites (OW2’, OW3, OW4, OW5), essentially two Cs sites (Cs1/Cs1’, Cs2) and four Ca sites (Ca1, Ca2, Ca3, Ca4). The Cs^+ ions more preferentially occupy the Cs1/Cs1’ site, located at/around the centers of the 8-membered ring windows, than the Cs2 site. In terms of interatomic distances, the coordination environments of the extraframework species in the chabazite crystals before and after the Cs-exchange treatment are discussed. In particular, both samples have a common feature that possible hydrogen bonds are relatively weak between water molecules and framework O atoms, whereas those are relatively strong between water molecules. On the basis of these findings, we discuss the crystal-chemical key factors for an excellent Cs-exchange ability of chabazite as a highly efficient radioactive-element remover.

Keywords: Ca-chabazite, Single-crystal X-ray Diffraction, Cs-exchange ability

Distribution of Mn^{3+} and Mn^{4+} studied by X anomalous scattering: the details of 3×4 tunneled structure formed by MnO_6 octahedron in woodruffite

*Christopher Miyazaki[1], Ryo Yamane[2], Kazumasa Sugiyama[2], Makoto Tokuda[3], Takeshi Mikouchi[4]

1. Tohoku Univ. Eng., 2. Tohoku Univ. IMR, 3. Kumamoto Univ. IINa, 4. UMUT

Keywords: woodruffite

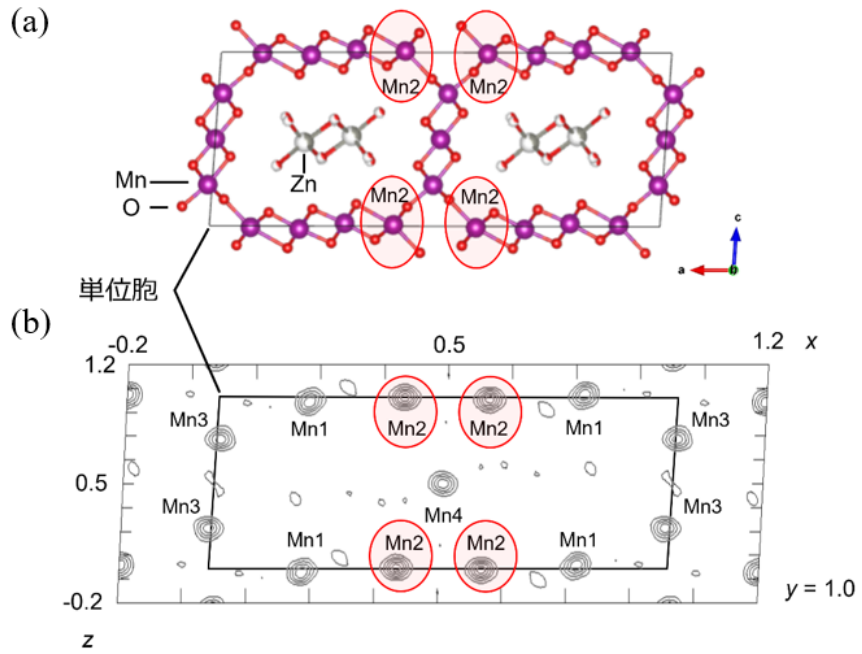


Fig. 1 (a) Woodruffiteの結晶構造（VESTAにより描画）
(b) MnのX線異常散乱によって求めたコントラストマップ（等高線間隔：1.2 e/Å^3）

Mg^{2+} and Ba^{2+} ion-exchange of GTS-type Na titanosilicate and its structural characterization

*Keiko FUJIWARA[1], Naomi Kawata[1], Akihiko Nakatsuka [1]

1. Yamaguchi Univ. Sci. Tech. Innov.

GTS-type microporous titanosilicates have a three-dimensional tunnel-type structure. In this structure, four TiO_6 octahedra linked by edge-sharing form a Ti_4O_{16} cluster; the clusters are linked through SiO_4 tetrahedra to form a three-dimensional framework with an interconnected pore system involving cavities of 8-ring channels, occupied by the alkali-metal ions and adsorbed water molecules. It is reported that Na-GTS, $Na_4[(TiO)_4(SiO_4)_3]\cdot 6H_2O$, crystallizes in a rhombohedral phase with space group *R*3*m*; its unit cell [a = 7.8123 (6) Å, α = 88.794 (9) ˚] is very close to cubic cell and often described as a pseudocubic cell. In this study, we focused on Mg^{2+} and Ba^{2+}, which have the different ionic size from and the same valence as the radioactive elements Sr^{2+}. We investigated the effects of ionic size and valence on the Mg^{2+}- and Ba^{2+}-exchange properties of Na-GTS.

We have prepared the ion-exchanged forms, $Na_{4(1-x)}M_{2x}[(TiO)_4(SiO_4)_3]\cdot yH_2O$ (M: Mg, Ba), by treating Na-GTS with $MgCl_2$ and $BaCl_2$ aqueous solutions (C_M = 0 ~ 7.9 mol/L) at 25 ˚C for 24 hours. The maximum ion-exchange rates of Mg and Ba were x = 0.76 and 0.86, respectively. We evaluated the unit-cell parameters from the powder X-ray diffraction (XRD) by a profile fitting method assuming a rhombohedral unit-cell and the H_2O content (y) by TG. The increase in the ion-exchange rate (x) decreases the unit-cell volumes (V) and the H_2O contents (y) of the Ba^{2+}-exchanged samples, but increases those of the Mg^{2+}-exchanged samples. The increase in V of the Mg^{2+}-exchanged samples can be due to the increase in the y value; it can be brought about by the increase in the free space in the pores due to the exchange of smaller divalent Mg^{2+} with larger monovalent Na^+. The decrease in V of Ba^{2+}-exchanged samples can be explained by the interpretation that the decrease in the number of exchangeable-cations due to the exchange of divalent Ba^{2+} with monovalent Na^+ yields the decrease in the number of water molecules coordinating to it. In these samples, the cation distribution of Mg^{2+} and Ba^{2+} in the cavities will be discussed from the comparison of the observed and simulated XRD patterns.

Keywords: Na-GTS, Ion-exchange, Powder XRD

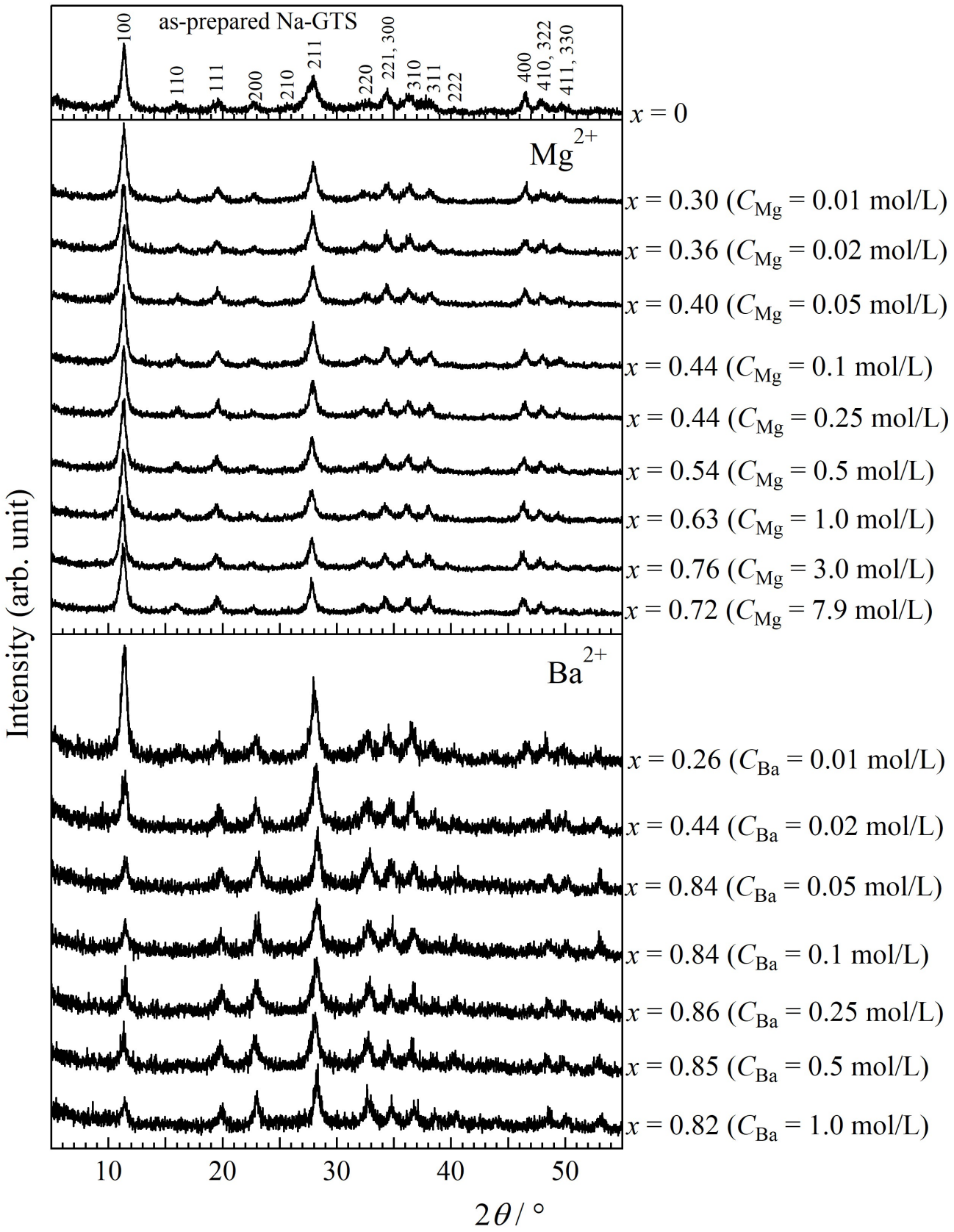


Fig. 1. Observed XRD patterns of Mg^{2+} and Ba^{2+}-exchanged Na-GTS.

Distribution of Fe^{3+} among tetrahedral sites and crystal structural change of gehlenite-Fe^{3+} gehlenite

*Maki HAMADA[1], Mariko Nagashima[2]

1. Kanazawa University, 2. Yamaguchi University

Keywords: synthetic melilite, crystal structural change, gehlenite

Crystallographic site preference of impurity elements in olivine by ALCHEMI method

*Yohei IGAMI[1], Akira MIYAKE[1], Ryo WAKABAYASHI[1], Norikatsu AKIZAWA[2]

1. Kyoto University, 2. The University of Tokyo

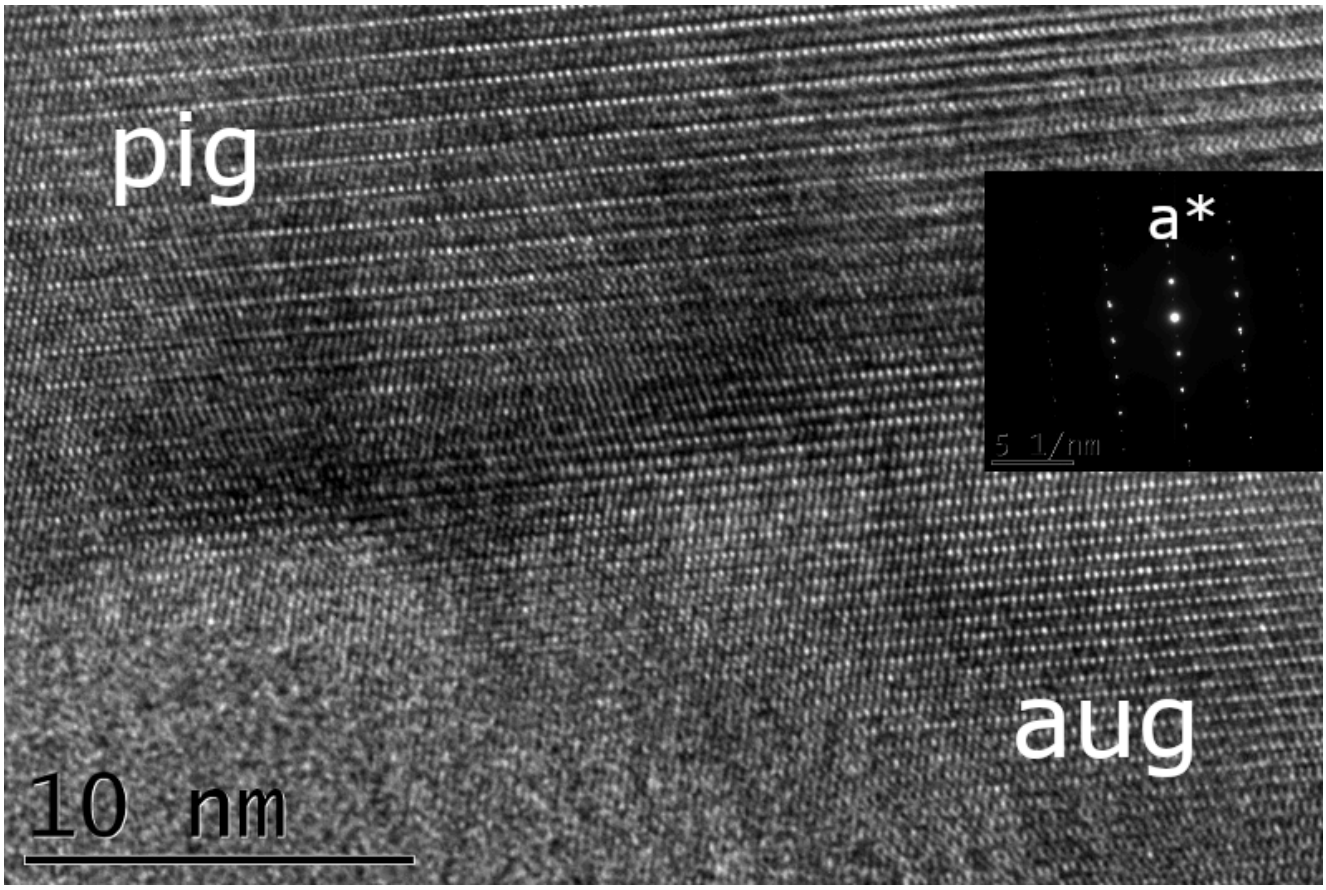
Keywords: olivine, cation site distribution, analytical electron microscopy, ALCHEMI

Precipitated structures of pyroxene lamellar with various directions

*Shoichi TOH[1]

1. Fukuoka University

Keywords: augite, pigeonite, exsolution, texture



Crystal chemistry of bridgmanite with Al/Fe contents expected in MORB component

*Akihiko NAKATSUKA[1], Hiroshi FUKUI[2], Seiji KAMADA[3], Naohisa HIRAO[2], Makio OHKAWA[4], Kazumasa SUGIYAMA[5], Takashi YOSHINO[6]

1. Yamaguchi Univ. Sci. Tech. Innov., 2. JASRI, 3. AD Science Inc., 4. Hiroshima Univ. Adv. Sci. Eng., 5. Tohoku Univ. IMR, 6. Okayama Univ. IPM

Bridgmanite (simplified formula $MgSiO_3$) is the most abundant constituent in the Earth’ s lower mantle. The effects of the incorporation of Fe and Al into bridgmanite can have a large effect on the physical properties and rheology of the lower mantle. Bridgmanite formed from a mid-ocean ridge basalt (MORB) component of subducting slabs contains larger amounts of Fe and Al than that formed from a pyrolytic composition. This difference in bridgmanite composition can cause a difference in the incorporation mechanism of Fe and Al into the crystal structure between subducting slabs and their surrounding lower mantle. This should cause heterogeneity in the physical properties and rheology of the lower mantle. Elucidating the crystal chemistry of bridgmanite formed from the MORB composition is a key to resolving this issue. The precise crystal chemistry examined employing a single crystal is, therefore, significant for gaining a detailed understanding of lower-mantle dynamics. In particular, the use of ^{57}Fe-Mössbauer spectroscopy is indispensable for distinguishing the valence and spin states of Fe, which cannot be directly observed by X-ray diffraction. For this purpose, we characterize $Mg_{0.662}Fe_{0.338}Si_{0.662}Al_{0.338}O_3$ bridgmanite single-crystal, with the Fe and Al contents expected in MORB, by a combination of single-crystal X-ray diffraction, synchrotron ^{57}Fe-Mössbauer spectroscopy conducted at SPring-8 BL10XU, and electron probe microanalysis.

The present study reveals that the charge-coupled substitution $^{A}Mg^{2+} + {}^{B}Si^{4+} <---> {}^{A}Fe^{3+}$(high-spin) + $^{B}Al^{3+}$ is predominant in the incorporation of Fe and Al into the practically eightfold-coordinated A-site and the sixfold-coordinated B-site in bridgmanite structure. The incorporation of both cations via this substitution enhances the structural distortion due to the tilting of BO_6 octahedra, yielding the unusual expansion of mean <A-O> bond-length due to flexibility of A-O bonds for the structural distortion, in contrast to mean <B-O> bond-length depending reasonably on the ionic radius effect. Moreover, we imply the phase transition behavior and the elasticity of bridgmanite in slabs subducting into deeper parts of the lower mantle, in terms of the relative compressibility of AO_{12} (practically AO_8) and BO_6 polyhedra.

Keywords: Bridgmanite, MORB, Single-crystal X-ray diffraction, Synchrotron Mössbauer

Mechanism of the pressure-induced crystallization of amorphous calcium carbonate

*Chiho Morita[1], Hiroki Kobayashi[1], Hiroyuki Kagi[1]

1. UTokyo. Sci.

Keywords: Amorphous calcium carbonate, Calcite, High pressure

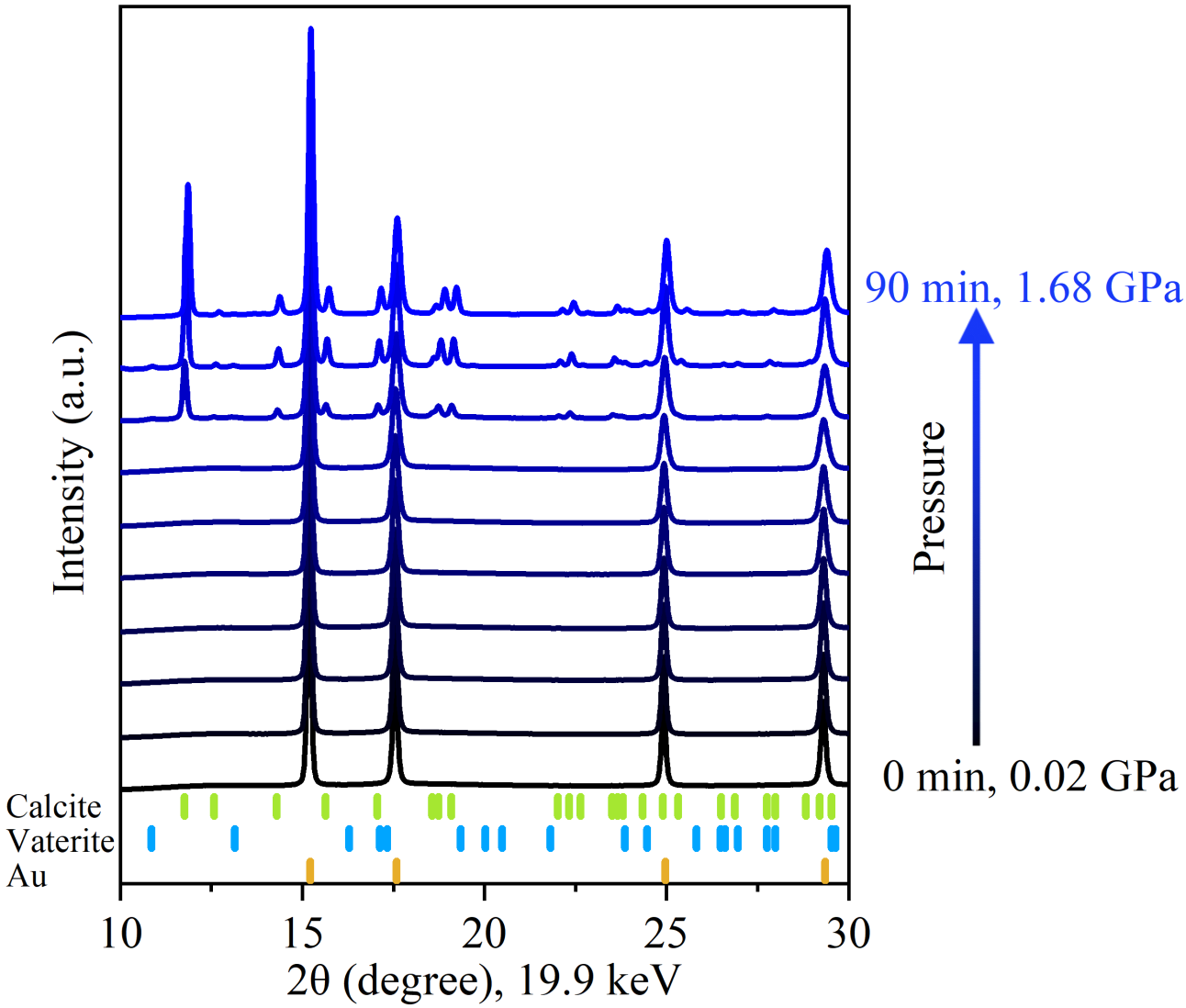


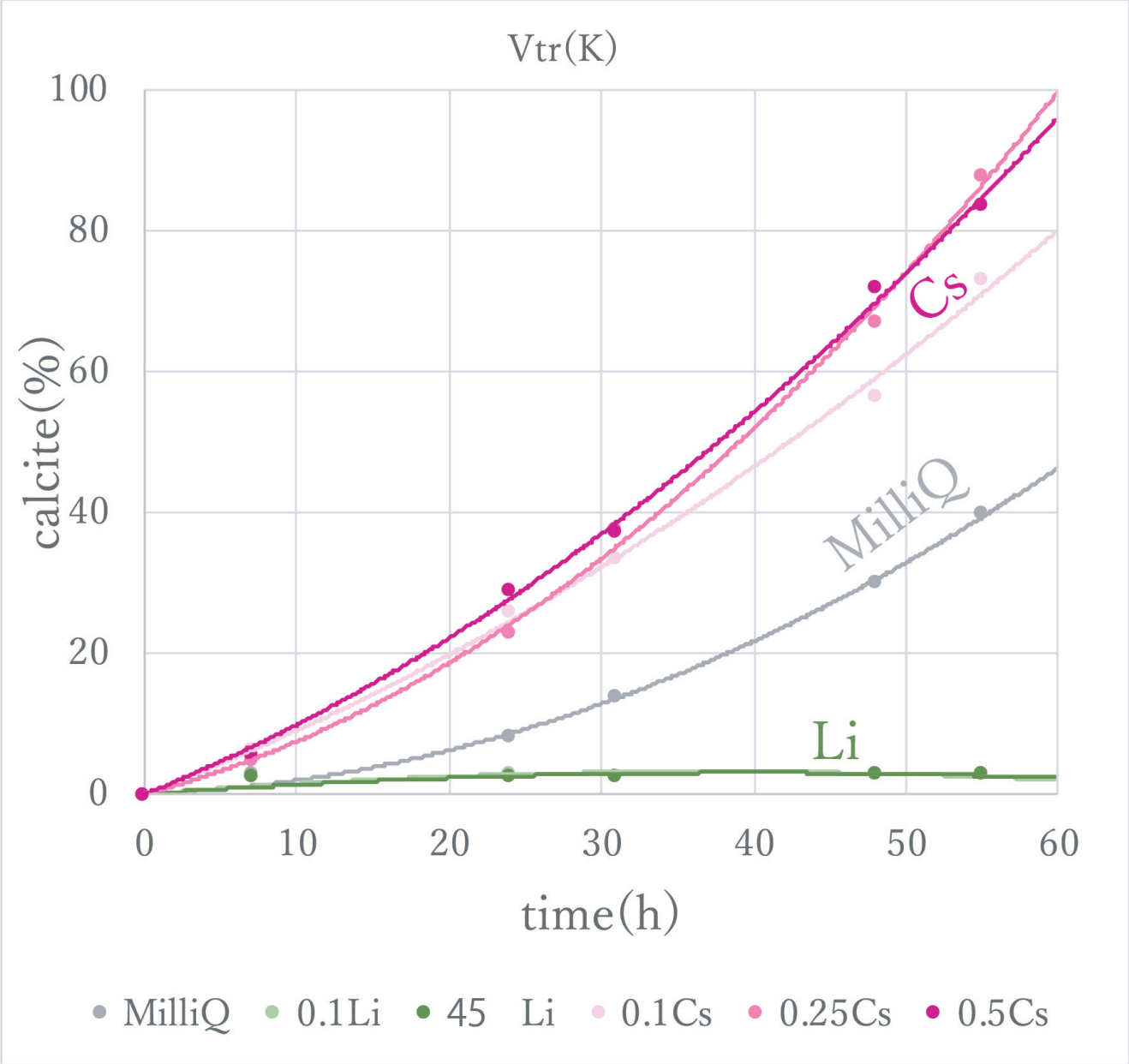
図. ACCの圧力誘起結晶化の時分割X線回折パターン

Differences in the effects of Li and Cs on the calcitization of vaterite.

*Noboru FURUKAWA[1], Ami Kinoda[2]

1. Chiba University, 2. NIWAKA

Keywords: vaterite, calcitization, Lithium, Cesium



Poster presentation | R5: Extraterrestrial materials

Sat. Sep 14, 2024 12:30 PM - 2:00 PM JST | Sat. Sep 14, 2024 3:30 AM - 5:00 AM UTC | Entrance Hall Higashiyama Campus

R5: Extraterrestrial materials

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

[R5-P-01] Dehydration of Newberyite($MgHPO_4.3H_2O$) under low pressures

*Yukako Matsumoto[1], Shogo Tachibana[1] (1. UTokyo)

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

[R5-P-02] Experimental simulation of oxygen isotope exchange between chondrule melt and low-pressure water vapor

*Daiki YAMAMOTO[1], Noriyuki Kawasaki[2] (1. Kyushu University, 2. Hokkaido University)

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

[R5-P-03] Early impact events recorded in anomalous eucrites

*Akira YAMAGUCHI[1] (1. National Institute of Polar Research)

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

[R5-P-04] Internal Structure Analaysis of Carbonaceous Material in Yamato 8448 Ureilite

*Masahiro YASUTAKE[1], Megumi Matsumoto[2], Akira Tsuchiyama[3,4], Kentaro Uesugi[1], Akihisa Takeuchi[1], Akira Yamaguchi[5] (1. JASRI, 2. Tohoku Univ., 3. Ritsumeikan Univ., 4. CAS/GIG, 5. NIPR)

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

[R5-P-05] Effects of initial porosity on shock deformation microstructures in rutile

*Yuhei Umeda[1,2], Yuma Nagai[1,2], Naotaka Tomioka[3], Toshimori Sekine[4], Masashi Miyakawa[5], Takamichi Kobayashi[5], Hitoshi Yusa[5], Takuo Okuchi[1,2] (1. KURNS, 2. Kyoto Univ. Eng., 3. JAMSTEC, 4. HPSTAR, 5. NIMS)

Dehydration of Newberyite($MgHPO_4.3H_2O$) under low pressures

*Yukako Matsumoto[1], Shogo Tachibana[1]

1. UTokyo

Keywords: Bennu, phosphate, dehydration, asteroid, Newberyite

Experimental simulation of oxygen isotope exchange between chondrule melt and low-pressure water vapor

*Daiki YAMAMOTO[1], Noriyuki Kawasaki[2]

1. Kyushu University, 2. Hokkaido University

Keywords: chondrule melt, low-pressure water vapor, oxygen isotope exchange, kinetics, protosolar disk

Early impact events recorded in anomalous eucrites

*Akira YAMAGUCHI[1]

1. National Institute of Polar Research

Keywords: meteorites, achondrites, thermal history, impact

Internal Structure Analaysis of Carbonaceous Material in Yamato 8448 Ureilite

*Masahiro YASUTAKE[1], Megumi Matsumoto[2], Akira Tsuchiyama[3,4], Kentaro Uesugi[1], Akihisa Takeuchi[1], Akira Yamaguchi[5]

1. JASRI, 2. Tohoku Univ., 3. Ritsumeikan Univ., 4. CAS/GIG, 5. NIPR

Keywords: Ureilite, Diamond, SR-XCT

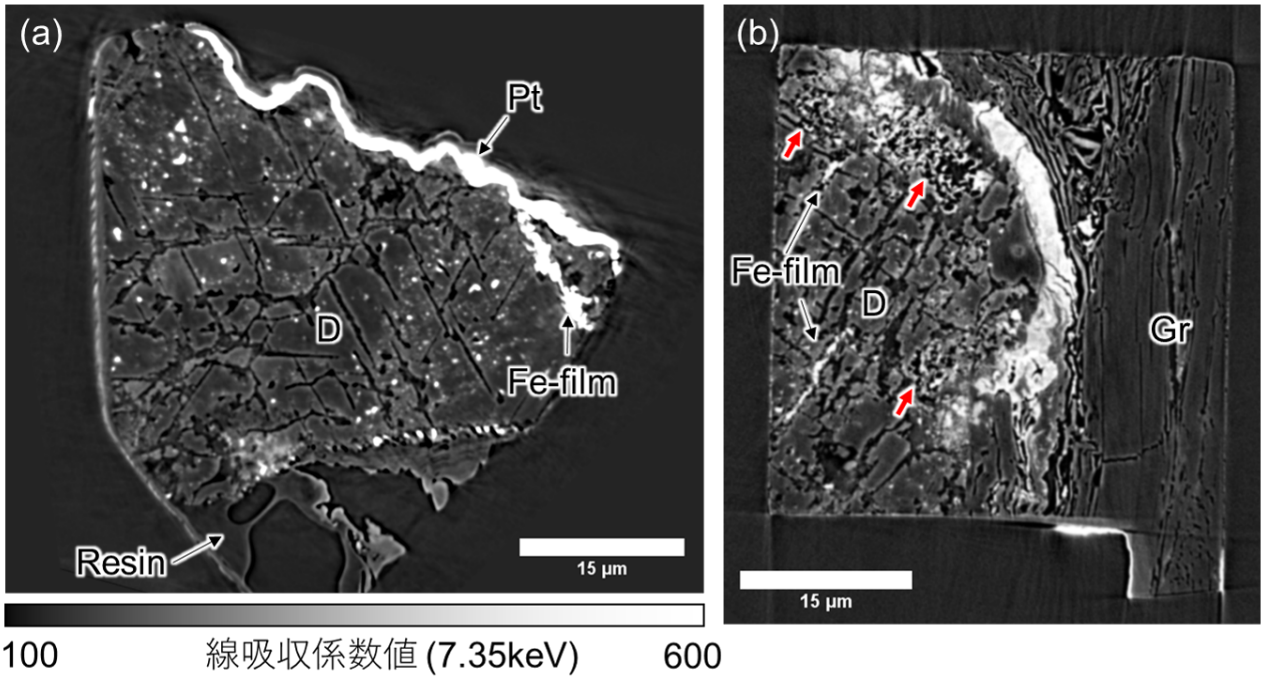


図１．炭素質物質のCT断面像。X線エネルギーは7.35keV。左下に表示コントラストを示す。(a) 黒色部からサンプリングした試料の断面像。60度120度で交わる線構造が確認できる。図中白い粒は鉄に富む包有物である。図中右端にはダイヤを区切る鉄に富む膜が分布している。(b) 境界部からサンプリングした試料の断面像。図中右側にグラファイトから成る茶色部が、左側にダイヤを主体とする黒色部が分布する。図中中央に分布する白色部は鉄に富む層である。茶色部は黒色部と比較し鉄に富む物質に乏しい事が分かる。赤矢印は虫食い状になったダイヤを示す。図中略語：D:ダイヤ、Gr:グラファイト、Pt:プラチナ保護膜、Fe-film:鉄に富む膜、Resin:樹脂。

Effects of initial porosity on shock deformation microstructures in rutile

*Yuhei Umeda[1,2], Yuma Nagai[1,2], Naotaka Tomioka[3], Toshimori Sekine[4], Masashi Miyakawa[5], Takamichi Kobayashi[5], Hitoshi Yusa[5], Takuo Okuchi[1,2]

1. KURNS, 2. Kyoto Univ. Eng., 3. JAMSTEC, 4. HPSTAR, 5. NIMS

Keywords: Rutile, Shock deformation microstructures, Porosity

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

Sat. Sep 14, 2024 12:30 PM - 2:00 PM JST | Sat. Sep 14, 2024 3:30 AM - 5:00 AM UTC | Entrance Hall Higashiyama Campus

R6: Plutonic rocks, volcanic rocks and subduction factory

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

[R6-P-01] Orthopyroxene cumulates from a serpentinite mud-volcano in the mariana forearc: constituent rocks of the forearc Moho transition zone

*Pia Ataka[1], Yuji Ichiyama[1], Shun Takamizawa[1], Akihiro Tamura[2], Tomoaki Motishita[2] (1. Chiba University, 2. Kanazawa University)

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

[R6-P-02] Formation processes of high-Mg andesite associated with ophiolitic rocks in the Setogawa belt

*Tsumugi Kato[1], Yuji Ichiyama[1], Akihiro Tamura[2], Tomoaki Morishita[2] (1. Chiba Univ., 2. Kanazawa Univ.)

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

[R6-P-03] Petrological and geochemical study of volcanics from Kuju volcanic group, Kyushu Island, Southwest Japan Arc.

「発表賞エントリー」

*Soma Yamanaka[1], Tomoyuki Shibata[1], Ryotaro Fujihara[1], Masako Yoshikawa[1], Tomo Shibata[2] (1. Hiroshima Univ. Sci. & Tech, 2. Fukuoka Univ. Sci.)

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

[R6-P-04] Petrological study of intrusive rocks and their crustal xenoliths in the Suzu area, Atsumi district, Yamagata

*Kazuhiro Tojo[1], Takashi Hoshide[1] (1. Akita Univ.)

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

[R6-P-05] Crystallization conditions of zircon and its crystallization relationship with surrounding minerals in the Tono plutonic complex, Kitakami mountains

*Yasuhiro OGITA[1,2], Shuhei Sakata[3], Takeshi Ohno[4], Tatsunori Yokoyama[2], Satoshi Suzuki[1], Kyoka Endo[1], Takashi Yuguchi[5] (1. Yamagata Univ., 2. JAEA, Tono Geoscience Center, 3. The Univ. Tokyo, Earthquake Research Inst., 4. Gakushuin Univ., 5. Kumamoto Univ.)

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

[R6-P-06] Petrography and magmatic processes of a diorite body distributed in the Kawakami region, Yamaguchi Prefecture, Japan

「発表賞エントリー」

*Ryosei Sugiura[1], Keisuke Eshima[1] (1. Yamaguchi University)

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

[R6-P-07] Sr–Nd–Hf isotopic systematics for the Habu granodiorite, eastern part of Yamaguchi Prefecture

*Masaaki OWADA[1], Yusaku Akimoto[2], Mariko Nagashima[1], Keisuke Eshima[1], Atsushi Kamei[3], Nobuhisko Nakano[4], Kenta Kawaguchi[5], Yasuhito Osanai[4] (1. Yamaguchi Univ., 2. YON-C, 3. Shimane Uni., 4. Kyushu Univ., 5. Hiroshima Univ.)

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

[R6-P-08] Rare earth element compositions and U-Pb zircon age of granodiorite porphyrites in the Noko Island, western part of northern Kyushu

*Masaki YUHARA[1], Yoshinobu KAWANO[2], Kazuhiro TSUKADA[3], Purevdulam SUKHBAATAR[4] (1. Fukuoka Univ. Sci., 2. Rissho Univ. Env. Sci., 3. Nagoya Univ. Mus., 4. Nagoya Univ. Env. St.)

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

[R6-P-09] Compositional changes and growth processes of the Asakura granodiorite, Northern Kyushu, Japan.

「発表賞エントリー」

*Yudai HAMANO[1], Keisuke ESHIMA[1] (1. Yamaguchi Uni. Sci)

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

[R6-P-10] Intrusive relationship and lithofacies classification of Granite–Granodiorite in Eastern Fukuoka Prefecture

「発表賞エントリー」

*Ryo Nakamura[1], Keisuke Eshima[1] (1. Yamaguchi University)

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

[R6-P-11] Crystallization processes of quartz in a granitic magma: Implications for the magma chamber processes of Okueyama granite, Kyushu, Japan

*Takashi YUGUCHI[1], Takenori Kato[4], Yasuhiro Ogita[2], Minori Watanabe[6], Asuka Kato[6], Daichi Itoh[6], Tatsunori Yokoyama[2], Shuhei Sakata[3], Takeshi Ohno[5] (1. Kumamoto University, 2. JAEA, 3. Uni. Tokyo ERI, 4. Nagoya University, 5. Gakushuin University, 6. Yamagata University)

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

[R6-P-13] Differentiation Processes of Granitic Magma Chamber Recorded in 'Oshima-ishi' Distributed in Oshima, Geiyo islands, Ehime Prefecture

*Kazuya SHIMOOKA[1,2], Soichiro AONO[2], Takahito ONISHI[2], Toko FUKUI[2], Motohiro TSUBOI[1], Toshiro TAKAHASHI[3], Satoshi SAITO[2] (1. Kwansei Gakuin Univ., 2. Ehime Univ., 3. Niigata Univ.)

Orthopyroxene cumulates from a serpentinite mud-volcano in the mariana forearc: constituent rocks of the forearc Moho transition zone

*Pia Ataka[1], Yuji Ichiyama[1], Shun Takamizawa[1], Akihiro Tamura[2], Tomoaki Motishita[2]

1. Chiba University, 2. Kanazawa University

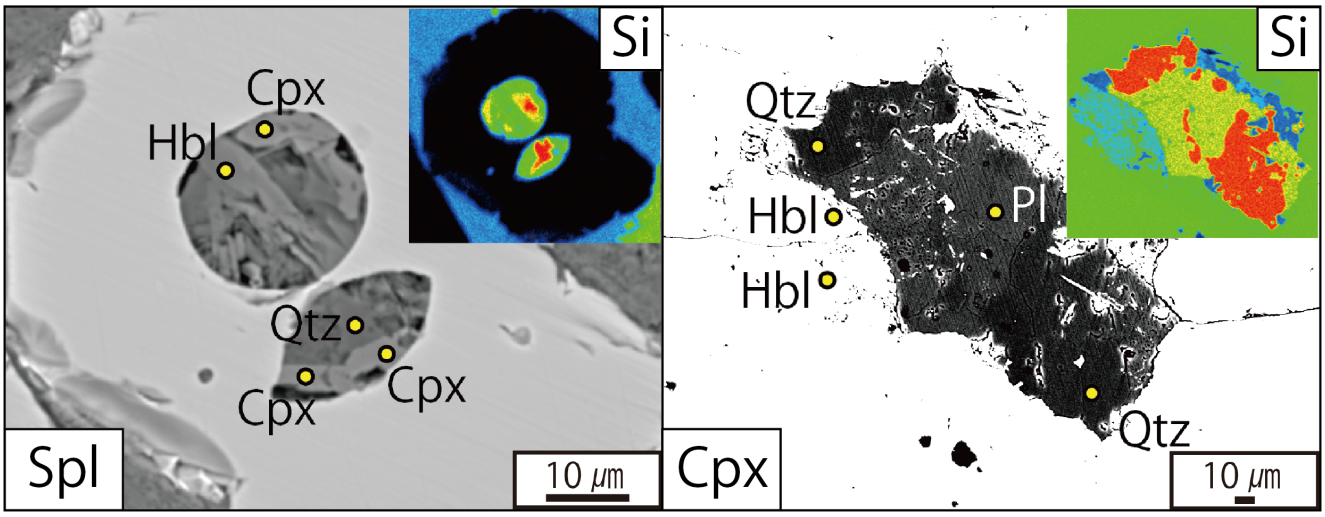
Keywords: Serpentine, Ophiolite, Mariana Forearc, Moho transition zone, cumulate

Formation processes of high-Mg andesite associated with ophiolitic rocks in the Setogawa belt

*Tsumugi Kato[1], Yuji Ichiyama[1], Akihiro Tamura[2], Tomoaki Morishita[2]

1. Chiba Univ., 2. Kanazawa Univ.

Keywords: high-Mg andesite, Setogawa belt, felsic crystalline inclusions, magma mixing



Petrological and geochemical study of volcanics from Kuju volcanic group, Kyushu Island, Southwest Japan Arc.

*Soma Yamanaka[1], Tomoyuki Shibata[1], Ryotaro Fujihara[1], Masako Yoshikawa[1], Tomo Shibata[2]

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

Keywords: modal composition, Kuju, arc magma

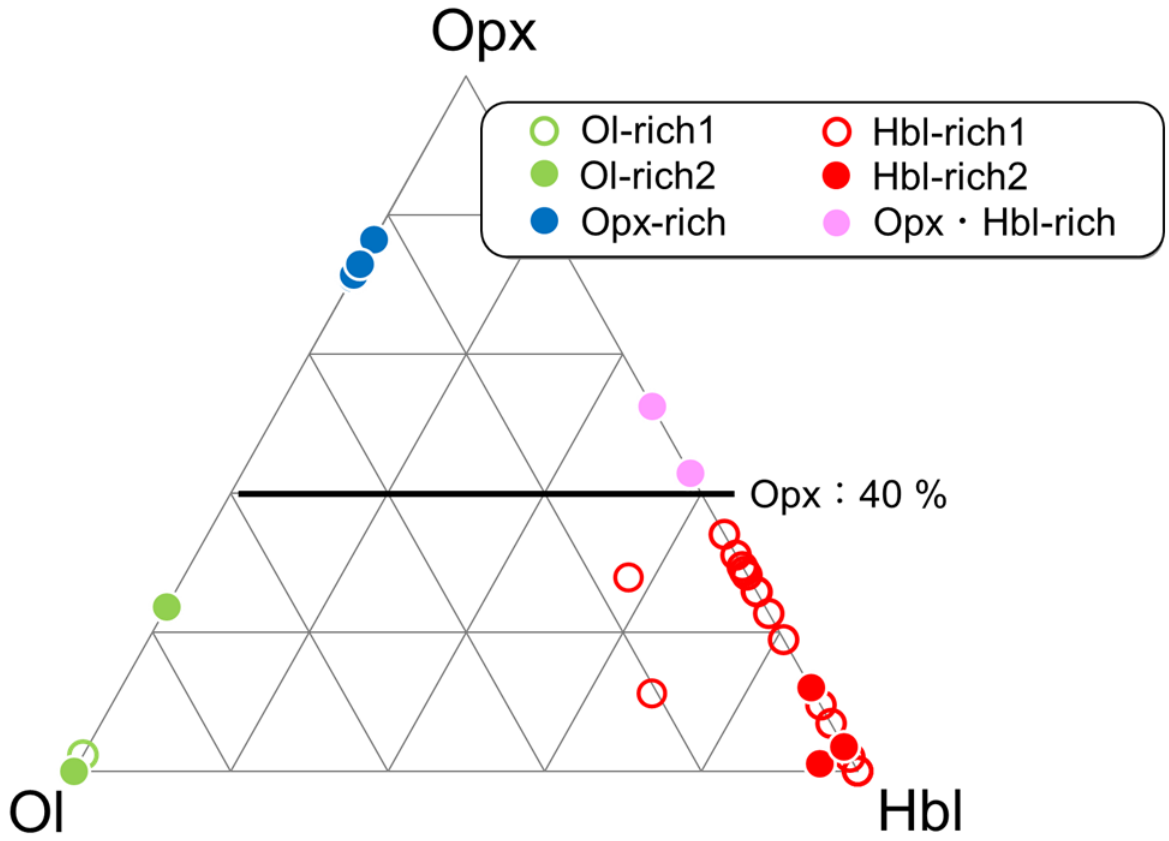


図　九重火山群火山岩類のモード組成。

Petrological study of intrusive rocks and their crustal xenoliths in the Suzu area, Atsumi district, Yamagata

*Kazuhiro Tojo[1], Takashi Hoshide[1]

1. Akita Univ.

Keywords: Petrology, Xenoliths

Crystallization conditions of zircon and its crystallization relationship with surrounding minerals in the Tono plutonic complex, Kitakami mountains

*Yasuhiro OGITA[1,2], Shuhei Sakata[3], Takeshi Ohno[4], Tatsunori Yokoyama[2], Satoshi Suzuki[1], Kyoka Endo[1], Takashi Yuguchi[5]

1. Yamagata Univ., 2. JAEA, Tono Geoscience Center, 3. The Univ. Tokyo, Earthquake Research Inst., 4. Gakushuin Univ., 5. Kumamoto Univ.

No abstract in English.

Keywords: Zircon, U-Pb age, Ti concentration, Tono Plutonic Complex

表1　遠野岩体のジルコンの産状と分析数

岩相	サンプル名	分析点数	ジルコン粒子数				
				in Qtz	in Bt	in Afs	粒間
中心相	025	23	4	1	1	0	2
	029	3	1	1	0	0	0
	102	11	4	1	0	1	2
主岩相	021	5	4	1	1	0	2
	404	6	3	0	0	0	3
	405	31	11	0	3	0	8

in Qtz: 石英に包有されるジルコン，in Bt: 黒雲母に包有されるジルコン，
in Afs: アルカリ長石に包有されるジルコン，粒間: 粒間に産出するジルコン

Petrography and magmatic processes of a diorite body distributed in the Kawakami region, Yamaguchi Prefecture, Japan

*Ryosei Sugiura[1], Keisuke Eshima[1]

1. Yamaguchi University

Keywords: Grandiorite, Volcanic-plutonic complex, Kwanmon Group, Shunan Group

Sr–Nd–Hf isotopic systematics for the Habu granodiorite, eastern part of Yamaguchi Prefecture

*Masaaki OWADA[1], Yusaku Akimoto[2], Mariko Nagashima[1], Keisuke Eshima[1], Atsushi Kamei[3], Nobuhisko Nakano[4], Kenta Kawaguchi[5], Yasuhito Osanai[4]

1. Yamaguchi Univ., 2. YON-C, 3. Shimane Uni., 4. Kyushu Univ., 5. Hiroshima Univ.

We performed geological, petrographical, and geochemical investigations including Sr–Nd–Hf isotopic studies for the Habu granodiorite located in the eastern part of Yamaguchi Prefecture, and discussed its magmatic processes and source materials. The laccolithic Habu granodiorite consists mainly of the leucocratic biotite granodiorite (leucocratic facies) surrounded by the thin-skinned hornblende-biotite granodiorite (melanocratic facies). Zircon U–Pb dating gives ages of c. 105 Ma for both lithofacies. Although the whole-rock chemical data of both lithofacies make monotonous trends on some binary plots, the leucocratic facies are slightly affected by crustal contaminations, as evidenced by Sr–Nd isotopic features. Epsilon Hf isotopic model ages revealed that the Habu granodiorite would be derived from the mafic lower crust probably separated from the depleted mantle during the Mesoproterozoic time.

Keywords: Habu granodiorite, Magmatic processes, Source materials, Multi-isotopic systematics, Igneous activities Southwest Japan

Rare earth element compositions and U-Pb zircon age of granodiorite porphyrites in the Noko Island, western part of northern Kyushu

*Masaki YUHARA[1], Yoshinobu KAWANO[2], Kazuhiro TSUKADA[3], Purevdulam SUKHBAATAR[4]

1. Fukuoka Univ. Sci., 2. Rissho Univ. Env. Sci., 3. Nagoya Univ. Mus., 4. Nagoya Univ. Env. St.

Keywords: granodiorite porphyrite, Noko Island, Sr and Nd isotopic composition, Rare earth element compositions, U-Pb zircon age

Compositional changes and growth processes of the Asakura granodiorite, Northern Kyushu, Japan.

*Yudai HAMANO[1], Keisuke ESHIMA[1]

1. Yamaguchi Uni. Sci

Keywords: Cretaceous, Northern Kyushu batholith, Granodiorite, Lithofacies change, Growth processes

Intrusive relationship and lithofacies classification of Granite–Granodiorite in Eastern Fukuoka Prefecture

*Ryo Nakamura[1], Keisuke Eshima[1]

1. Yamaguchi University

Keywords: plutonic rock, Cretaceous , plutonic complex, intrusive relationship, magma mixing

Crystallization processes of quartz in a granitic magma: Implications for the magma chamber processes of Okueyama granite, Kyushu, Japan

*Takashi YUGUCHI[1], Takenori Kato[4], Yasuhiro Ogita[2], Minori Watanabe[6], Asuka Kato[6], Daichi Itoh[6], Tatsunori Yokoyama[2], Shuhei Sakata[3], Takeshi Ohno[5]

1. Kumamoto University, 2. JAEA, 3. Uni. Tokyo ERI, 4. Nagoya University, 5. Gakushuin University, 6. Yamagata University

Keywords: Quartz, Cathodoluminescence, TitaniQ thermometer, Okueyama granite, Ti-in-zircon thermometer

Differentiation Processes of Granitic Magma Chamber Recorded in 'Oshima-ishi' Distributed in Oshima, Geiyo islands, Ehime Prefecture

*Kazuya SHIMOOKA[1,2], Soichiro AONO[2], Takahito ONISHI[2], Toko FUKUI[2], Motohiro TSUBOI[1], Toshiro TAKAHASHI[3], Satoshi SAITO[2]

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

Keywords: Oshima-ishi, Cretaceous granitoids, Differentiation Processes, Mafic magma, Oshima, Geiyo islands

"Mineralogy 2022"General Outreach lecture

Sat. Sep 14, 2024 3:30 PM - 5:00 PM JST | Sat. Sep 14, 2024 6:30 AM - 8:00 AM UTC | ES Hall Higashiyama Campus

General Outreach lecture

3:30 PM - 5:00 PM JST | 6:30 AM - 8:00 AM UTC

[3Lecture-1-1530-1add] 一般普及講演

"Mineralogy 2022"General Outreach lecture

General Outreach lecture

Sat. Sep 14, 2024 3:30 PM - 5:00 PM ES Hall (Higashiyama Campus)

3:30 PM - 5:00 PM

[3Lecture-1-1530-1add]一般普及講演