

13th International Workshop on WATER DYNAMICS

Hydrogen in the Earth and Fluid Behaviors

Venue: Center Hall, Ecollab., Aoba-kinenkaikan

Aoba-yama Campus, Tohoku University

Tuesday, March 15th, 2016: Conference Hall

Time	No.	Speaker	Title	Chairman
Opening				
9:00-9:05		Noriyoshi Tsuchiya	WS Framework	N. Tsuchiya
9:05-9:10		Eiji Ohtani	Opening Remarks	
9:10-9:15		Noriaki Watanabe	Safety Information	
Deep Carbon Cycle				
9:30-10:00	O-1	Eiji Ohtani	Hydrogen and Carbon in the lower mantle and core	T. Sakamaki
10:00-10:30	O-2	Litasov Konstantin	Towards integrated models of the Earth's core and volatile budget of the Earth	
10:30-11:00	O-3	Andrey V. Korsakov	Grain-scale pressure variations and role of COH fluids in transformation of C and SiO ₂ polymorphs in deeply subducted continental crust	
11:00-11:15			Break	
11:15-11:45	O-4	Asami Sano	In-situ observation of hydrogen in minerals under pressure using neutron diffraction	
11:45-12:15	O-5	Shin-ichi Orimo		
12:15-12:50		All Poster Presenters	Poster Presentation (2min. introduction)	M. Uno
		P-1 ~ P-18		
12:50-14:30			Group Photo1, Lunch & Poster Session	
Hydration & Tectonics				
14:30-15:00	O-6	Benjamin Malvoisin	Hydrogen production at mid-ocean ridges: insights from experimental and numerical modelling of serpentinization reaction	M. Uno
15:00-15:30	O-7	Burenjargal Ulziiburen	Thermal evolution of metamorphic rocks and contrasting geochemical signature of granitoids from the Tseel terrane, SW Mongolia	
15:30-15:50			Break	
Subduction and Earthquake				
15:50-16:20	O-8	Tomomi Okada	Role of geofluids in inland shallow earthquakes after the 2011 Tohoku-Oki earthquake	A. Okamoto
16:20-16:50	O-9	Masahiro Ishikawa	Crustal and uppermost mantle lithology of the NE Japan arc from comparison with the measured and calculated rock velocity and observed seismic velocity	
16:50-17:20	O-10	Noriyoshi Tsuchiya	Natural Analogue of Supercritical Geothermal Reservoirs and Transition of Pressure Regimes	
18:30			Workshop Banquet	

Wednesday, March 16th, 2016: Lecture Room

Time	No.	Speaker	Title	Chairman
Prophyry Copper Deposit and Related Phenomena				
09:00-09:30	O-11	Brian Rusk	Hydrothermal Fluid Evolution in Porphyry-Type Ore Deposits: Evidence from fluid inclusions, cathodoluminescence, and trace elements in quartz	A. Okamoto

09:30-10:00	O-12	Jacob B. Lowenstern	Insights from Geothermal Gases at Yellowstone	
			Tectonics and subduction process	
10:00-10:30	O-13	Andrew Putnis	Fluid-rock interaction : hydration, stress generation and mass transfer	M. Uno
10:30-11:00	O-14	Jean E. Elkhoury	Can a Fractured Caprock Self-heal?	
11:00-11:15			Break	
11:15-11:45	O-15	Guðrún Arnbjörg Sævarsdóttir	Utilization of superheated geothermal fluid – power conversion and chemistry	A. Okamoto
11:45-12:15	O-16	Thrainn Fridriksson	Fluid Chemistry Scenarios Anticipated for IDDP-2 to be Drilled in Reykjanes, Iceland	
12:15-14:00			Group Photo2, Lunch	
			Water-Rock Interaction	
14:00-14:30	O-17	Noriaki Watanabe	Permeability behavior of high-temperature fractured granite as a function of confining stress	N. Tsuchiya
14:30-15:00	O-18	Takeshi Tsuji	Digital rock physics: Influence of mineral precipitation on interrelations among hydrological and elastic properties	
15:00-15:30	O-19	Philipp Blum	Coupled processes from micro to macro	
15:30-16:00	O-20	Atsushi Okamoto	Preferential flow paths developed by mineral dissolution and precipitation in a fracture under hydrothermal conditions	
16:00-16:20			Break	
16:20-16:50	O-21	Masaoki Uno	Mechanical responses of polycrystalline rock during hydration reactions: Experimental investigation in anhydrite-hemihydrate-gypsum system	N. Watanabe
16:50-17:20	O-22	Guðrún Arnbjörg Sævarsdóttir & Thrainn Fridriksson	The Icelandic energy system, energy politics and outlook	

Thursday, March 17th, 2016: Lecture Room

[Energy in Tohoku](#)

9:00-9:30	O-23	Masahiro Yoshimura	Sustainable Society by Materials Cycle via Water Cycle around the Earth Surface	S. Ozawa
9:30-10:00	O-24	Shu Yin	Synthesis of Multifunctional Nanomaterials by a Novel Water Molecular Controlled-Release Solvothermal Process	
10:00-10:30	O-25	Tadafumi Adschiri	Continuous production of nanoparticles by supercritical hydrothermal synthesis	
10:30-10:45			Break	

[Deep Carbon Cycle](#)

10:45-11:15	O-26	Richard Wirth	Microstructure and nanoinclusions in diamond unveil diamond genesis.	S. Kamada
11:15-11:45	O-27	Masaaki Miyahara	Evidence for shock-induced metamorphism on CB parent-body	
11:45-12:15	O-28	Clemens Prescher	High Poisson's ratio of Earth's inner core explained by Carbon alloying	
12:15-12:45	O-29	Wu Xiang & Jin Zhenmin	Low-spin Phase D with symmetric hydrogen bonds as a lower mantle water carrier	
14:00			Lab Tour	

Tuesday, March 15th, 2016: Ecollab.

Time	No.	Speaker	Title	
Environmental Geology				
10:30-11:00	O-30	Kyle Bahr	Agent-Based Modeling of Social Acceptance in Geothermal Resource Utilization	C. Inoue
11:00-11:30	O-31	Robert G. Boutlier	The social license: What is it. Why you need it. How to get it.	
11:30-12:00	O-32	Hiroki Kubota	Public and local acceptance of geothermal power plants in Japan	
Environmental Geology & Risk				
15:50-16:20	O-33	Yu-ling Zhang	Study on the purification of contaminated groundwater by Scoria	C. Inoue
16:20-16:50	O-34	Fangming Jin	Hydrothermal conversion of biomass and CO2 into chemicals and fuels	

Thursday, March 17th, 2016: Ecollab.

Environmental Geology				
9:00-9:30	O-35	Nemer Buyankhishig	Hydrogeological researches in Mongolia	T. Komai
9:30-10:00	O-36	Catherine Chague-goff	Advances in the geochemical analysis of palaeotsunami deposits: ITRAX core scanning and PCA	
10:00-10:30	O-37	Noriyoshi Tsuchiya	Geochemical discrimination of the Historical tsunami sediments in the Sendai plain	
10:30-10:45			Break	
10:45-11:15	O-38	Kazuhisa Goto	Recent progress of paleotsunami research along the Pacific coast of Tohoku	T. Komai
11:15-11:45	O-39	Takeshi Komai	Numerical Analysis of Mass Transport of Tsunami Deposits	
11:45-12:15	O-40	Bayanzul Batdembere	Principle to accumulate groundwater reserves in the Southern Gobi Region, Mongolia	
12:15-12:45	O-41	Arie Pujiwati	Environmental Assessment of Trace Metal Elements in Soil Related to Coal Mining Area in South Kalimantan, Indonesia	

Poster Session (From March 15th to 17th):Aoba-kinenkaikan

No.	Presenter	Title
P-1	Sawayama Kengo	Evaluation of Mine Discharge and Estimation of Heavy Metal Back Ground in River Water Using Multivariate Analysis
P-2	Ko Fukuyama	Stability fields of phase Egg under high pressure and high temperature corresponding to the mantle transition zone
P-3	Hiromu Tobe	Melting relation in the Fe-S-Si system under the condition of Mercury's core
P-4	Ryosuke Tanaka	Partition experiment between solid and liquid metal in the Fe-Ni-O-S-Si system
P-5	Takayuki Nakatani	Experimental constraints on the serpentinization rate of fore-arc peridotites: implications for the welling condition of the "Arima-type" hydrothermal system
P-6	Ryosuke Oyanagi	Bidirectional replacement zoning as a consequence from metasomatic reaction in olivine-palgioclase system
P-7	Ryota Abe	Experimental study on the stability of a high-pressure polymorph of Topaz-OH

P-8	Fumiya Maeda	Pressure-induced change of iron electronic environment in basaltic glass
P-9	Sei Sato	Metal-Silicate Partitioning in Ultra-High Temperature and High Pressure Conditions
P-10	Hiroto Tanaka	Channeling flow generated by dissolution of granite fracture under hydrothermal conditions.
P-11	Itaru Ohira	Contribution of Phase H – δ -AlOOH solid solution to deep water cycle
P-12	Sho Takeyama	Study of Mechanical and Hydraulic Characteristics of Rock Fracture Under Brittle-Ductile Transition
P-13	Satoru Ishikawa	Self-diffusion coefficient of interfacial water on quartz at 298-573 K by molecular dynamics simulation
P-14	Ryoichi SAITO	Fundamental study of evaluation of geothermal activity by thermoluminescence of quartz
P-15	Shota Shimizu	Natural analog of the deep geothermal reservoir –Hitachinai Granitic Rocks
P-16	Michimasa Musya	Abiotic CH ₄ generation by sulfur reduction and Fischer-Tropsch synthesis in hydrothermal experiments
P-17	Kairi Sato	Geochemical behavior around the river: Extraction of geochemical properties using principal component analysis
P-18	Otgonbayar Dandar	Olivine Pseudomorph after Orthopyroxene during Serpentinization (Hantaishir ophiolite, Mongolia)