The 2010 TANDEM Symposium on deep Earth mineralogy will be held **November 5 to 7, 2010** in Wuhan, China. The following are the main themes for the workshop:

ORAL SESSIONS

Day 1, Friday, November 5, 2010		
08:30-8:45	Welcome addresses	
Session 1a:		
Session Chairs: Zhenmin Jin (China Univ. of Geosciences) & Testuo Irifune (Ehime Univ)		
8:45-9:15	**Keynote:** SOSEKI laboratory and new developments in multianvil technology	Tetsuo Irifune*
9:15-9:35	**Invited:** Chemical insights into hydrous components in the earth and planetary materials	Hiroyuki Kagi*, Masashi Arakawa, Hiroshi Fukazawa
9:35-9:55	**Invited:** Effect of phosphorus on stability of BCC and HCP iron: implications for the Earth's inner core	Xiang Wu*, Mookherjee Mainak, Gu Tingting, Qin Shan
9:55-10:10	Numerical investigations of the effects of the spatial variations in transport properties on the convective patterns in the mantle	A. Miyauchi*, M. Kameyama , H. Ichikawa
10:10-10:30	Group photo & Tea/Coffee break	
Session 1b:		
Session Chairs: Yanbin Wang (Univ. of Chicago) & Yingwei Fei (Carn. Inst. Wash.)		
10:30-11:00	**Keynote:** Collaborations Among TANDEM Members Across the Pacific Ocean	Yanbin Wang*
11:00-11:20	**Invited:** Nitrides in deep Earth and global nitrogen cycling	Larissa Dobrzhinetskaya*, Richard Wirth, Jingsui Yang and Harry Green
11:20-11:40	**Invited:** Adiabatic temperature profile in the mantle	Tomoo Katsura*, Akira Yoneda, Daisuke Yamazaki, Takashi Yoshino & Eiji Ito
11:40-11:55	Discovery of true pathway of wurtzite under high pressure	Li Lei*, T Irifune, T Shinmei, H Ofuji, L. Fang
12:00-14:00	Lunch break	

Day 1, Friday, November 5, 2010		
Session 1c:		
Session Chairs: Larissa Dobrzhinetskaya (Univ. of California) & Tomoo Katsura (Universität Bayreuth)		
14:00-14:30	**Keynote:** Applications of FIB/SEM CrossBeam technology to high-pressure research	Yingwei Fei*
14:30-14:50	**Invited:** Hydrogen solubility in omphacite up to 10 GPa and implications for water transportation in subduction zone	Yao Wu*, Yingwei Fei, Zhenmin Jin
14:50-15:05	High pressure stability of hydrogen hydrate and symmetrization of hydrogen bond	Shin-ichi Machida*, Hisako Hirai, Taro Kawamura, et al.
15:05-15:25	**Invited:** Rutile stability in the basalt systems and its implications for growth of the early continental crust	Xiaolin Xiong*, Maoshuang Song, Wansheng Xiao, et al.
15:25-15:40	High-pressure XRD on the structure of hydrous/anhydrous NaAlSi3O8 melt	Akihiro Yamada*, Toru Inoue, Takumi Kikegawa
15:40-15:55	Thermoelastic properties of CaAl4Si2O11 CAS phase to the mantle transition zone conditions	Steeve Gr é aux*, Norimasa Nishiyama, Yoshino Kono, and Testuo Irifune
15:55-16:05	Tea/Coffee break	
Session 1d:		
Session Chairs: Taku Tsuchiya (Ehime Univ.) & Hiroyuki Kagi (University of Tokyo)		
16:05-16:25	**Invited:** Ab initio modeling of the deep mantle heterogeneity	Taku Tsuchiya*
16:25-16:40	Ab initio two phase molecular dynamics on the melting curve of silica	Yusuke Usui*, and Taku Tsuchiya
16:40-16:55	Self consistent model of core formation and the effective metal-silicate partitioning	Hiroki Ichikawa*, Stephane Labrosse, Masanori Kameyama
16:55-17:10	In situ high-pressure study of FeP: implications for planetary cores	Tingting Gu*, Xiang Wu, Shan Qin, and Leonid Dubrovinsky
16:10-17:25	Formation of CaSiO3-MnSiO3 perovskite at the lower mantle conditions	Lin Li*, T Nagai, K Fujino
17:25-17:40	Vibrational and thermodynamic properties of ferrous (Mg,Fe)SiO3 perovskite and post-perovskite	Arnaud Metsue* and Taku Tsuchiya
18:00-20:00	Dinner	

Day 2, Saturday, November 6, 2010		
Session 2a:		
Session Chairs: Shenghua Mei (Univ. of Minnesota) & Toru Inoue (Ehime Univ.)		
8:30-8:45	Technical developments for synthesis of nano-polycrystallinediamond using a large volume Kawai-type multianvil apparatus	F. Isobe*, T. Irifune, T. Shinmei, H. Sumiya
8:45-9:00	Formation of hydrocarbons and graphite by polymerization of methane molecules under the Earth's mantle conditions.	Ayako Shinozkai*, Hisako Hirai , Tadashi Kondo , Takehiko Yagi
9:00-9:15	Experimental study on the stability of graphitic C3N4 under high pressure and high temperature	Leiming Fang*, Hiroaki Ohfuji, Toru Shinmei and Tetsuo Irifune
9:15-9:30	P-V relations of phosphate minerals determined by in situ X-ray diffraction in a large-volume high-pressure apparatus	Shuangmeng Zhai*, Weihong Xue, Daisuke Yamazaki, et al.
9:30-9:45	Synthesis and crystal chemical characterization of the pyrochlore type MgZrSi2O7	Junshan Xu*, Eiji Ito, Tomoo Katsura, et al.
9:45-10:00	High Pressure and High Temperature Triggered Phase Transition in Molybdenite	Duanwei He* and Shanmin Wang
10:00-10:10	tea/coffee break	
Session 2b:		
Session Chairs: Norimasa Nishiyama (Ehime Univ.) & Junfeng Zhang (China Univ. of Geoscien		
10:10-10:30	**Invited:** Experimental investigation on the rheology of mantle minerals at high pressures	Shenghua Mei*, Ayako M. Suzuki, and Lili Xu
10:30-10:45	High-Temperature Creep of Manganese Olivine Mn2SiO4	Quan Bai*, Zhenmin JIN and D.L. kohlstest
10:45-11:00	Deformation experiments of wadsleyite and ringwoodite at P-T conditions of the mantle transition zone using a D-DIA apparatus	Takaaki Kawazoe*, Tomohiro Ohuchi, Yu Nishihara, et al.
11:00-11:15	Simple-shear deformation of olivine using a deformation-DIA apparatus: implications for upper mantle seismic anisotropy	Tomohiro Ohuchi*, Takaaki Kawazoe, Yu Nishihara, et al.
11:15-11:30	Subducting Lithosphere Does not Weaken as it Crosses the 660 km Discontinuity	Sutao Zhao*, Zhenmin Jin, Junfeng Zhang, et al.
11:30-11:45	Lattice preferred orientation of orthopyroxene and implications for seismic anisotropy	Haemyeong Jung*, Munjae Park, Sejin Jung, and Jaeseok Lee
11:45-12:00	Petrofabrics and seismic properties of experimentally deformed granulites	Yongfeng Wang*, Junfeng Zhang, Harry W Green, et al.
12:00-14:00	Lunch break	

Day 2, Saturday, Nov. 6, 2010

Poster session (14:00-17:00)

Session Chairs: Yao Wu (China Univ. of Geosciences) & Akira Yamada (Ehime Univ.)

1	Deformation mechanism of antigorite	Ando, J., Urata, Y., Soda, Y. and Ohfuji, H.
2	Unexpected ultrahigh pressure phase transition in group 14 dioxides from first principles	Haruhiko Dekura, Taku Tsuchiya and Jun Tsuchiya
3	Spin transitions of ferric iron in Mg-perovskite and post-Mg-perovskite by X-ray emission spectroscopy and their implications to the lower mantle	Kiyoshi Fujino, Daisuke Hamane, Yusuke Seto, et al.
4	High-pressure properties of gas hydrates and ices and the implications for the Earth and planetary sciences	Hisako Hirai, Shin-ichi Machida, Takehiko Tanaka, Kazuki Komatsu, Taro Kawamura, Yoshitaka Yamamoto, Takehiko Yagi
5	The study of magma-fluid group in GRC	Toru Inoue, Kyoko N. Matsukage, Akihiro Yamada, Yoshio Kono, Cuiping Yang, and our undergraduate students
6	Deformation microstructures of olivine in peridotites from the Lindas Nappe, Bergen arc, western Norway.	Sejin Jung, Haemyeong Jung and Håkon Austrheim
7	Overview of Mantle Dynamics Studies at GRC, Ehime University	Masanori Kameyama
8	Elemental partitioning between aqueous fluids and magmas: First synchrotron XRF analysis with large volume HPHT apparatus	Tatsuhiko Kawamoto , Kenji Mibe, Kenichi Kuroiwa , Tomoyuki Shibata, Tetsu Kogiso
9	Neutron diffraction study for Mg and Si bearing d-AlOOH	Kazuki Komatsu, Asami Sano-Furukawa, Hiroyuki Kagi
10	A new large-volume high-pressure system for earth science studies in Taiwan	Jennifer Kung, Tony K. Liang, Florian B. Hua, Wei Lin Hsu, Yanbin Wang
11	Phase transition and high P-T phase diagram of Gallia	Takehiro Kunimoto, Tetsuo Irifune, K
12	On the dehydration melting of phengite-bearing eclogite: An experimental study	Qiang Liu, Zhenmin Jin, Junfeng Zhang
13	Stable phase of CaGe2O5 under high pressure: evidence from ab initio studies	Yingxin Liu, Jing Yang, Xiang Wu, Shan Qin
14	Phase relations in harzburgite: stagnation of harzburgite and interpretation of multiple seismic discontinuities in mantle transition zone	Nishiyama, N., Kato, T., Kinoshita, Y., Irifune, T., Wada, K.
15	Influence of graphite crystallinity on the microtexture of nano-polycrystalline diamond obtained by direct conversion	Hiroaki Ohfuji, Shinsuke Okimoto, Takehiro Kunimoto, Hitoshi sumiya, tetsuo irifune

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Poster session (14:00-17:00)

Session Chairs: Yao Wu (China Univ. of Geosciences) & Akira Yamada (Ehime Univ.)

16	Thermal diffusivity, thermal conductivity and heatcapacity of mantle materials under high pressure	Masahiro OSAKO, Akira YONEDA, Eiji ITO
17	Lattice preferred orientation of olivine in spinel peridotites from the Rio Grande rift, New Mexico	Munjae Park, Haemyeong Jung, Youngwoo Kil
18	Synthesis of gamma-boron under high pressure and high temperature	Jiaqian Qin, T Irifune, T Shinmei, H Ofuji, Li Lei, et al.
19	P-V-T equation of state of MgSiO3 perovskite up to 110 GPa and 2500 K: Primary reference for the mineralogy of the lower mantle	Yoshinori Tange, Yasuhiro Kuwayama, Tetsuo Irifune, et al.
20	P-V-T equation of state of stishovite up to mid lower mantle conditions	Fulong Wang, Yoshimori Tange, Tets
21	Phase transition of Ga-Fe-O and Ge under HT-HP	Peng Wang, Dongli Yu
22	Pyroxene exsolution topotaxy in majoritic garnet from 250-300 km depth	Haijun Xu, Junfeng Zhang, Qiang Liu, et al.
23	SiO2 solubility in chromite at high temperature and high pressure: implication for the origin of coesite exsolution in podiform chromitite from Luobusa ophiolite, Tibet	Mengjing Xu, Yingwei Fei, Yao Wu, Zhenmin Jin
24	Introduction to the Geodynamics Research Center, Ehime University	Akira Yamada
25	Silicon diffuion in silicate minerals at high pressure and its implication to rheology of the mantle	Daisuke Yamazaki
26	Equations of state of antigorite under high pressure and high temperature determined by in situ X-ray diffraction (XRD)	Cuiping Yang, Toru Inoue, Zhenmin Jin, et al.
27	Structural stablity of B-site ordered fluoropervoskite under high pressure	Jing Yang, Xiang Wu, Shan Qin
28	Porosity and Inclusion effects on macroscopic composite elasticity in terms of the two dimensional finete element method analysis	A Yoneda, F H Sohag
29	Phase stability and elasticity of Sc2O3 at high pressure	Qian Zhang, Xiang Wu, Shan Qin
30	Experimental Constraint on the Genesis of Ultra-high Pressure Jadeite Quartzite	Yanfei Zhang, Yao Wu, Chao Wang, et al.
31	Supercritical fluid inclusions in the UHP minerals and the metamorphic chemical geodynamics of subduction zone	Ze-Ming Zhang, Kun Shen, Wei-Dong Sun, Yong-Sheng Liu
32	Ca-Esk component in Cpx: experimental study at high PT conditions	Sutao Zhao, Larissa Dobrzhinetskaya, Philip Nee and Harry Green
33	Phase relations in (Mg0.93,Fe0.07)SiO3 to 24 GPa: implications for seismic velocities of subducted harzburgite	Chunyin Zhou, Norimasa Nishiyama, Tetsuo Irifune, et al.
34	Reevaluation of the phase stability of Mg3Cr2Si3O12 knorringite garnet at high pressure and high temperature	Yongtao Zou, Tetsuo Irifune, Toru Shinmei, Haruka Yano