

Schedule of Scientific Program in Brief

3 November, 2017 (Friday)					
time	Room				
	S	A	B	C	Poster
8 : 50	Opening				
9 : 00	Plenary 1				Poster Posting
10					
20					
30	Plenary 2				Poster Posting
40					
50					
10 : 00					
10 : 10	Coffee Break				
10 : 20					
10 : 40		[1A]	[1B]	[1C]	
11 : 00		Instrumental, Analytical, Kinetics and General (1)	Inorganic Materials, Ceramics and Metals	Organic Materials and Polymers	
10					Poster Posting
20					
30					
40					Poster Posting
50					
12 : 00					
12 : 10	Lunch				
12 : 20					
12 : 25					
13 : 30					Poster 1 (odd No.)
40					Poster 2 (even No.)
50					
14 : 00					
10					Poster 2 (even No.)
20					
30					
40					Poster 2 (even No.)
50					
15 : 00					
10					Poster 2 (even No.)
20					
30					
40					Poster 2 (even No.)
50					
15 : 30					
15 : 40	Coffee Break				
15 : 50					
16 : 00		[2A]	[2B]	[2C]	
10		Solution, Colloids and Interface	Heat Capacity and Phase Transitions	Environment and Energy	
20					Poster Removing
30					
40					
50					Poster Removing
17 : 00					
10					
20					Poster Removing
30					
40					
50					Poster Removing
18 : 00					
19 : 00					
	Banquet				

4 November, 2017 (Saturday)			
time	Room		
	S	A	B
8 : 50			
9 : 00		[3A]	[3B]
10		Instrumental, Analytical, Kinetics and General (2)	Biothermodynamics, including Food, Pharm. and Medical Applications
20			
30			
40			
50			
10 : 00			
10 : 10			
20			
30			
40			
50			
10 : 30			
10 : 40			
45	Coffee Break		
11 : 05			
10	Plenary 3		
20			
30			
40	Plenary 3		
50			
12 : 00			
	closing		
	Excursion		

Plenary Lectures

Plenary 1

Room	Date	Time	Chairperson
S	Nov.3 (Friday)	9:00 ~ 9:40	Zhiwu YU (Tsinghua Univ.)
Speaker (Institution)			
Prof. Shun-ichi Kidokoro (Nagaoka University of Technology, Japan)			
President of the Japan Society of Calorimetry and Thermal Analysis			
Presentation Title			
Calorimetric Evaluation of Rapid and Reversible Oligomerization of Non-native Globular Proteins at High Temperature			

Plenary 2

Room	Date	Time	Chairperson
S	Nov.3 (Friday)	9:40 ~ 10:20	Hirohisa Yoshida (Tokyo Metropol. Univ)
Speaker (Institution)			
Prof. Buxing Han (Chinese Academy of Sciences, China)			
Chairman of the Committee of Chemical Thermodynamics and Thermal Analysis of Chinese Chemical Society			
Presentation Title			
Thermodynamic Properties of Green Solvents Systems and Applications in Green Chemistry			

Plenary 3

Room	Date	Time	Chairperson
S	Nov.4 (Saturday)	11:05 ~ 11:45	Yasuo Saruyama (Kyoto Inst. Tech.)
Speaker (Institution)			
Ing. Wim de Klerk (Senior Business Developer Ammunition Safety)			
President of International Confederation for Thermal Analysis and Calorimetry			
Presentation Title			
Stability of Energetic Materials from a Thermal Point of View			

Parallel Session

[1A] Instrumental, Analytical, Kinetics and General (1)			
Room	Date	Time	Chairpersons
A	Nov.3 (Friday)	10:40 ~ 12:25	Nobuyoshi KOGA (Hiroshima Univ.) Kiyoshi TAKEDA (Naruto Univ. Educ.)

[1B] Inorganic Materials, Ceramics and Metals			
Room	Date	Time	Chairpersons
B	Nov.3 (Friday)	10:40 ~ 12:25	Hitoshi KAWAJI (Tokyo Inst. Tech.) Li-Xian SUN (Guilin Univ. Electro. Tech.)

[1C] Organic Materials and Polymers			
Room	Date	Time	Chairpersons
C	Nov.3 (Friday)	10:40 ~ 12:25	Akihiko TODA (Hiroshima Univ.) Atsushi NAGOE (Kokushikan Univ.)

[2A] Solution, Colloids and Interface			
Room	Date	Time	Chairpersons
A	Nov.3 (Friday)	15:50 ~ 18:00	Tadashi KAMIYAMA (Kindai Univ.) Masayuki ODA (Kyoto Pref. Univ.)

[2B] Heat Capacity and Phase Transitions			
Room	Date	Time	Chairpersons
B	Nov.3 (Friday)	15:50 ~ 18:00	Ysuhiro NAKAZAWA (Osaka Univ.) Xiaozheng LAN (Shandong Agric. Univ.)

[2C] Energy and Environment			
Room	Date	Time	Chairpersons
C	Nov.3 (Friday)	15:50 ~ 18:00	Katsumi KATOH (Fukuoka Univ.) Chi-Min SHU (Yun Tech., Taiwan)

[3A] Instrumental, Analytical, Kinetics and General (2)			
Room	Date	Time	Chairpersons
A	Nov.4 (Saturday)	8:50 ~ 10:45	Nobuyoshi KOGA (Hiroshima Univ.) Nikita V. MURAVYEV (Russ. Acad. Sci.)

[3B] Biothermodynamics, including Food, Pharmaceutical and Medical Appl.			
Room	Date	Time	Chairpersons
B	Nov.4 (Saturday)	8:50 ~ 10:45	Etsuo YONEMOCHI (Hoshi Univ.) Zhiwu YU (Tsinghua Univ.)

[1A] Instrumental, Analytical, Kinetics and General (1)

Room	Date	Time	Chairpersons
A	Nov.3 (Friday)	10:40 ~ 12:25	Nobuyoshi KOGA (Hiroshima Univ.) Kiyoshi TAKEDA (Naruto Univ. Educ.)

No.	Presentation Title Contributors (Underline: Presenter; *: Corresponding Author) (Affiliations)
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1A1040(KN) Progress Reports of Specific Heat Capacity Standard in NMIJ

H. Abe^{*}, H. Kato and N. Yamada
(Natl. Metrology Inst. Jpn. (NMIJ), AIST)

1A1105 VOC Desorption Analysis from Wood-Based Charcoal by Skimmer-Type Interface TG-DTA-PIMS

Lani Llego Celiz^{a,*}, Yoshinobu Hosoi^a, Tadashi Arii^a, Misako Komatsu^b, Yuko Nishimoto^b
(^aThermal Analysis Div., Rigaku Corp.; ^bDept. Chem., Fac. Sci., Kanagawa Univ.)

1A1120 Effects of Impurities on the Thermal Runway of TMCH

Jialei Gu^a, Yi Liu^{b,c,*}, Chi-Min Shu^d
(^aCtr. for Safety, Environ. Energy Conserv. Tech., China University of Petroleum; ^bState Key Lab. Heavy Oil Processing, China Univ. Petroleum; ^cCol. Chem Eng., China Univ. Petroleum; ^dDept. Safety, Health, and Environ. Eng., Natl. Yunlin Univ. Sci. Tech.)

Break (11:35 ~ 11:40)

1A1140 Thermal Runaway Investigation of Lithium Ion Batteries Using Modified Cone Calorimeter and Accelerating Rate Calorimeter

Binbin Mao, Qingsong Wang^{*}, Lin Jiang, Jinhua Sun
(State key Lab. Fire Sci., Univ. Sci. Tech. China)

1A1155 The Observations of Extra Color in the Borax Bead Test Using the Manganese Compound Solutions

Sekai Iwama^{a,*}, Satoshi Shimono^b, Yoshikiyo Hatakeyama^c, Shoji Fujiwara^d, Katsuya Fukuyama^e
(^aDept. Commerce, Kumamoto Gakuen Univ.; ^bGrad. Sch. Human and Environ. Studies, Kyoto Univ.; ^cDiv. Molecular Sci., Grad. Sch. Sci. Tech., Gunma Univ.; ^dG. Chem. Dept. Law, Meiji Gakuin Univ.; ^eCtr. Liberal Arts, Meiji Gakuin Univ.)

1A1210 Consciousness Needed for People to Realize Sustainability Revolution Derived by Non-Equilibrium Thermodynamic Analysis of a Long History of Evolution of Organisms

Kazuo Amaya^{*}
(Non.)

[1B] Inorganic Materials, Ceramics and Metals

Room	Date	Time	Chairpersons
B	Nov.3 (Friday)	10:40 ~ 12:25	Hitoshi KAWAJI (Tokyo Inst. Tech.) Li-Xian SUN (Guilin Univ. Electro. Tech.)

No.	Presentation Title Contributors (Underline: Presenter; *: Corresponding Author) (Affiliations)
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1B1040(KN) Thermodynamic Tuning of New Energy Storage Materials
Li-Xian Sun^{*}, Fen Xu, Huanzhi Zhang, Yongpeng Xia, Yumei Luo, Hailiang Chu, Erhu Yan
 (Guangxi Key Lab. Inform. Mater. & Guangxi Collabo. Innov. Ctr. Struct. Property New Energy & Mater.,
 Sch. Mater. Sci. Eng., Guilin Univ. Electro. Tech.)

1B1105 Effects of Crystal Structure and Nonstoichiometry of Titanium Dioxide Doped Graphene Oxide on Photocatalytic Activity
M. A. Idris^{a,b,*}, Nur Farhana M. Yunosa^{a,b}, LN Hoa^{a,b}, Siti Khalijah Kamarudina^{a,b}
 (^aSch. Mater. Eng., Univ. Malaysia Perlis; ^bCtr. Frontier Mater., Sch. Mater. Eng., Univ. Malaysia Perlis)

1B1120 Influence of Strontium-Based Phase Change Material (PCM) on the Hydration Heat and Mechanical Properties of Concrete for Massive Structures
H. D. Yun^{a,*}, S. J. Jang^a, S. W. Kim^b, W. S. Park^b
 (^aDept. Architect. Eng., Chungnam Natl. Univ.; ^bDept. Const. Eng. Educ., Chungnam Natl. Univ.)

Break (11:35 ~ 11:40)

1B1140 Thermal Decomposition of Siliceous Concrete under Elevating Temperature
S. Kikuchi^{a,*}, N. Koga^b, H. Seino^a
 (^aSect. Fast Reactor Res. Develop., Japan Atomic Energy Agency; ^bGrad. Sch. Educ., Hiroshima Univ.)

1B1155 Analysis of Crystal Structure and Structural Phase Transition Behavior of Nd₂Ni_{1-x}Cu_xO_{4+δ} by X-ray Diffraction and Thermal Analysis
C. K. Wang^a, H. Soga^a, T. Okiba^a, E. Niwa^b, T. Hashimoto^{a,*}
 (^aDept. Phys., Col. Hum. Sci., Nihon Univ.; ^bSch. Sci., Tokyo Inst. Tech.)

1B1210 Thermal Expansion Behavior of Relaxor Ferroelectrics K_{1-x}Li_xTaO₃ and KTa_{1-x}Nb_xO₃
S. Kitani^{a,*}, M. Tachibana^b, H. Kawaji^a
 (^aLab. Mater. Struct., Tokyo Inst. Tech.; ^bNatl. Inst. Mater. Sci.)

[1C] Organic Materials and Polymers

Room	Date	Time	Chairpersons
C	Nov.3 (Friday)	10:40 ~ 12:25	Akihiko TODA (Hiroshima Univ.) Atsushi NAGOE (Kokushikan Univ.)

No.	Presentation Title Contributors (Underline: Presenter; *: Corresponding Author) (Affiliations)
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1C1040(KN) Low-Temperature Ordering of Liquid Configuration, Observed in Benzene Confined within MCM-41
Atsushi Nagoe^{a,*}, Masaharu Oguni^b
 (^aDept. Math. Sci., Sch. Sci. Eng., Kokushikan Univ.; ^bRes. Ctr. Struct. Thermodynamics, Grad. Sch. Sci., Osaka Univ.)

1C1105 Dissipative Process for Meso-scale Order Structure Formation in Immiscible Polymer Blends
 Junhyeok Jang, Hirohisa Yoshida*
 (Urban Environ. Sci., Tokyo Metropolitan Univ.)

1C1120 Investigation on the Structure and Properties of Biocomposite Membranes SF/PLA
Fang Wang^{a,*}, Hao Wu^b, Qichun Liu^a, QingYu Ma^c, Xiao Hu^d
 (^aAnal. Testing Ctr., Nanjing Normal Univ.; ^bDept. Cell Bio., Rowan Univ. Sch. Osteopathic Medicine; ^cSch. Phys. Tech., Nanjing Normal Univ.; ^dDept. of Phys. Astron. & Dept. Biomed. Translatl. Sci., Rowan Univ.)

Break (11:35 ~ 11:40)

1C1140 AC Nano-Calorimetry Study of the Crystallization of Poly(L-lactic acid) Thin Films
Takashi Sasaki*, Keita Kamiya, Shungo Katano
 (Dept. Mater. Sci. Eng., Univ. Fukui)

1C1155 Fabrication of Tin Oxide Transparent Conducting Films by Spray Coating of Dip-Coating Solution onto a Heated Glass Substrate
Y. Sawada^{a,*}, K. Chubachi^a, Y. Seki^a, R. Matsumoto^a, T. Uchida^a, Y. Hoshi^a, S. Kobayashi^a, L.X. Sun^b
 (^aTokyo Polytech. Univ.; ^bGuilin Univ. Electron. Tech.)

1C1210 Fast-Scan DSC of Polymer Crystallization and Melting
Akihiko Toda^{a,*}, Ken Taguchi^a, Koji Nozaki^b, Gaku Kono^b
 (^aGSIAS, Hiroshima Univ.; ^bGSSTI, Yamaguchi Univ.)

[2A] Solution, Colloids and Interface

Room	Date	Time	Chairpersons
A	Nov.3 (Friday)	15:50 ~ 18:00	Tadashi KAMIYAMA (Kindai Univ.) Masayuki ODA (Kyoto Pref. Univ.)

No.	Presentation Title Contributors (Underline: Presenter; *: Corresponding Author) (Affiliations)
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2A1550(KN) Calorimetric Study on Complex Systems Including Three Kinds of Amphiphilic Molecules
Guangyue Bai^{a,*}, Hui Wu^a, Jiuxia Wang^b, Yujie Wang^{b,*}
 (^aCollab. Innov. Ctr. Henan Province for Green Manufact. Fine Chem., Key Lab. Green Chem. Media React., Ministry of Educ., Sch. Chem. Chem. Eng., Henan Normal Univ.; ^bSch. Chem. Chem. Eng., Henan Inst. Sci. Tech.)

2A1615(KN) Solvation and Reaction of Ions in Ionic Liquids
Ryo Kanzaki*
 (Grad. Sch. Sci. Eng., Kagoshima Univ.)

2A1640(KN) Thermotropic Phase Behavior of Sterol-Containing Binary Bilayer Membranes of Diacylphosphatidylcholines
N. Tamai*, M. Goto, H. Matsuki
 (Dept. Bioeng., Div. Biosci. Bioind., Grad. Sch. Tech., Ind. Social Sci., Tokushima Univ.)

Break (17:05 ~ 17:15)

2A1715 Thermodynamic Properties of Aqueous Solution of *meso*-2,3-Butandiol
T. Kimura*, Y. Takeuchi, M. Fukushima, M. Fujisawa, S. Takagi
 (Dept. Chem., Kindai Univ.)

2A1730 Excess Enthalpies and Liquid - Liquid Equilibrium of Fluorocarbon + Hydrocarbon Systems
S. Nagata^a, Y. Sato^b, H. Ogawa^c, F. Kimura^c
 (^aGrad. Sch. Adv. Sci. Tech., Tokyo Denki Univ.; ^bGrad. Sch. Sci. Eng., Tokyo Denki Univ.; ^cSch. Sci. Eng., Tokyo Denki Univ.)

2A1745 Enthalpy Change for Solid Phase Transition and Conformational Change of BSA by Dissolution Calorimetry
M. Ishida, T. Kamiyama*
 (Grad. Sch. Sci. Eng., Kindai Univ.)

[2B] Heat Capacity and Phase Transitions

Room	Date	Time	Chairpersons
B	Nov.3 (Friday)	15:50 ~ 18:00	Ysuihiro NAKAZAWA (Osaka Univ.) Xiaozheng LAN (Shandong Agric. Univ.)

No.	Presentation Title Contributors (Underline: Presenter; *: Corresponding Author) (Affiliations)
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2B1550(KN) Phase Behaviors of Normal Alkanes in Nanopores
X. Z. Lan*, D. Q. Wang, S. P. Deng, X. Wang, Y. T. Wei
(Col. Chem. Mater. Sci., Shandong Agric. Univ.)

2B1615(KN) Structural Thermodynamics: A Numerical Experiment on Heat Capacity of Classical Spin Systems
Kazuya Saito*
(Dept. Chem., Fac. Pure Appl. Sci., Univ. Tsukuba)

2B1640 Thermodynamic Properties of $[Li^+@C_{60}](PF_6^-)$ Crystal
H. Suzuki^{a,*}, Y. Miyazaki^a, M. Nakano^a, E. Kwon^b
(^aOsaka Univ.; ^bTohoku Univ.)

2B1655 Isobaric Heat Capacities of LiCl Aqueous Solutions by DSC at a Range of 233.15 K to 343.15 K
Chao Cao^a, Yijian He^{a,b,*}, Jiachen Xu^a, Yue Sun^a, Zepeng Chen^a, Guangming Chen^b
(^aInst. Refrigerat. Cryogenics, Zhejiang Univ.; ^bKey Lab. Refrigerat. Cryogenic Tech. Zhejiang Province)

Break (17:10 ~ 17:15)

2B1715 Phase Transitions of Water and Some Organic Substances Absorbed in the Nanopores of Metal-Organic Frameworks HKUST-1
H. Kawaji*, T. Komiyama, Y. Fukuyama, S. Kitani
(Lab. Mater. Struct., Tokyo Inst. Tech.)

2B1730 Low-Temperature Heat Capacity and Boson Peak of Alkali Metal Borate Glass
S. Kojima^a, Y. Matsuda^a, and H. Kawaji^b
(^aDiv. Mater. Sci., Univ. Tsukuba; ^bLab. Mater. Struct., Tokyo Inst. Tech.)

2B1745 Thermodynamics of Novel Electronic States in Organic Charge Transfer Complexes with Multiple Quantum Mechanical Freedoms
Y. Nakazawa^{a,b,*}, S. Imajo^a, S. Yamashita^{a,b}, and H. Akutsu^{a,b}
(^aDept. Chem., Grad. Sch. Sci., Osaka Univ.; ^bRes. Ctr. Struct. Thermodyn., Grad. Sch. Sci., Osaka Univ.)

[2C] Energy and Environment

Room	Date	Time	Chairpersons
C	Nov.3 (Friday)	15:50 ~ 18:00	Katsumi KATOH (Fukuoka Univ.) Chi-Min SHU (Yun Tech., Taiwan)

No. Presentation Title
Contributors (Underline: Presenter; *: Corresponding Author)
(Affiliations)

2C1550(KN) Explosion Accident Analysis from Thermal Analysis and Gram Scale Explosion Test

K. Okada*

(Res. Inst. Sci. for Safety Sustainability (RISS), Natl. Inst. Adv. Ind. Sc. Tech. (AIST))

2C1615(KN) Forced-Air Cooling System for Large Scale Lithium-Ion Batteries Module during Charge/Discharge Process

Jhao-Min Jiang^a, Yi-Hong Chung^b, Yih-Wen Wang^c, Wei-Chun Chen^a, Chi-Min Shu^{a,*}

(^aDept. Safety, Health, Environ. Eng., Natl. Yunlin Univ. Sci. Tech. (YunTech); ^bGrad. Sch. Eng. Sci. Tech., YunTech.;

^cDept Occupatl. Safety and Health, Col. Public Health, China Medical Univ.)

2C1640 Energetic Metal–Organic Frameworks (EMOFs): An Effective Approach to New Generation HEDMs

Q. Yang*, Q. Wei, G. Xie, S. P. Chen, S. L. Gao

(Col. Chem. Mater. Sci., Northwest Univ.)

2C1655 Application of Polyvinyl Alcohol as Material for Evaporative Cooling: Analysis of Water Evaporation Rate and Thermal Conductivity

M. Zamengo*, J. Morikawa

(Sch. Mater. Chem. Tech., Tokyo Inst.Tech.)

Break (17:10 ~ 17:15)

2C1715 The Catalytic Effect of Benfield Waste Salt on CO₂ Gasification of a Typical South African Highveld Coal

Romanus C Uwaoma^a, Christien A. Strydom^{a,*}, John R. Bunt^b, Gregory N. Okolo^b, Ratale H. Matjie^a

^aChem. Resource Beneficiation, North-West Univ.; ^bEnergy System, Sch. Chem. Mineral Eng. North-West Univ.)

2C1730 In-situ Observation and Reduction Rate on Interaction between Palm Char and Slag at High Temperature Reactions

Nur Farhana M. Yunos^{a,*}, Nur Hazira Najmi^a, M. Asri Idris^b

(^aSch, Mater. Eng., Univ. Malaysia Perlis, ^bCtr. Frontier Mater., Sch. Mater. Eng., Univ. Malaysia Perlis)

2C1745 Prediction of Gross Calorific Value of Coals: A Comparison of Random Forest and Support Vector Machine

J. Deng^{a,b}, C. Lei^{a,*}, Y. Xiao^{a,b}, L. Ma^{a,b}, L. Rena, W. Wang^{a,b}

(^aSch. Safety Sci. Eng., Xi'an Univ. Sci. Tech.; ^bShaanxi Key Lab. Prev. Control Coal Fire, Xi'an Univ. Sci. Tech.)

[3A] Instrumental, Analytical, Kinetics and General (2)

Room	Date	Time	Chairpersons
A	Nov.4 (Saturday)	8:50 ~ 10:45	Nobuyoshi KOGA (Hiroshima Univ.) Nikita V. MURAVYEV (Russ. Acad. Sci.)

No.	Presentation Title
	Contributors (Underline: Presenter; *: Corresponding Author)
	(Affiliations)

3A0850(KN) Enhanced Reactivity of Nanosized Titanium Toward Oxidation Revealed by Thermokinetic Analysis
Nikita V. Muravyev*, Konstantin A. Monogarov, Alla N. Pivkina
 (Semenov Inst. Chem. Phys., Russian Acad. Sci.)

3A0915(KN) Influence of the Reaction Conditions on the Apparent Kinetic Behavior of the Thermal Degradation of Polyethylene
S. Yamada^{a,*} M. Ishihara^a, N. Kato^a, M. Tsuchiya^a, N. Koga^b
 (^aDept. Appl. Chem., Natl. Defense Acad Jpn., ^bGrad. Sch. Educ., Hiroshima Univ.)

3A0940 Evaluation of CO₂ Absorption Rate of Li₄SiO₄ by Thermogravimetric Analysis -Dependence of Particle Size-
S. Kaniwa^a, M. Yoshino^a, K. Hirano^a, E. Niwa^b, S. Matsushita^c and T. Hashimoto^{a,*}
 (^aCol. Humanities and Sciences, Nihon Univ.; ^bSch. Mater. Chem. Technol., Tokyo Inst. Tech.; ^cSch. Mater. Chem. Technol. Tokyo Inst. Tech.)

Break (9:55 ~ 10:00)

3A1000 Kinetics and Thermodynamics of CO₂ Adsorption on Coal
Jun Deng^{a,b}, Feng Ren Li^{a,b}, Li Ma^{a,b}, Xiao Wei Zhai^{a,b}, Chang Kui Lei^{a,b}
 (^aSch. Safety Sci. Eng., Xi'an Univ. Sci. Tech., ^bKey Lab. Western Mine Exploit. Hazard Prev. Minist. Educ.)

3A1015 Ionic Liquid Treatment of Bituminous Coal for Inhibition of Spontaneous Combustion
Yang Xiao^a, Hui-Fei Lü^a, Xin Yi^a, Jun Deng^a, Chi-Min Shu^b
 (^aSch. Safety Sci. Eng., Xi'an Univ. Sci. Tech.; ^bGrad. Sch. Eng. Sci.Tech., Natl. Yunlin Univ. Sci. Tech.)

3A1030 Logic and Strategy for the Kinetic Analysis of Complex Solid-State Reactions
N. Koga^{a,*}, L.A. Perez-Maqueda^b, L. Favergeon^c, N.V. Muravyev^d, S. Yamada^e
 (^aGrad. Sch. Educ., Hiroshima Univ.; ^bInst. Mater. Sci., C.S.I.C.-Univ. Sevilla, Spain; ^cMines Saint-Etienne, France; ^dSemenov Inst. Chem. Phys., Russian Acad. Sci.; ^eDept. Appl. Chem., Natl. Defense Acad. Jpn.)

[3B] Biothermodynamics, including Food, Pharmaceutical and Medical Appl.

Room	Date	Time	Chairpersons
B	Nov.4 (Saturday)	8:50 ~ 10:45	Etsuo YONEMOCHI (Hoshi Univ.) Zhiwu YU (Tsinghua Univ.)

No.	Presentation Title Contributors (Underline: Presenter; *: Corresponding Author) (Affiliations)
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3B0850(KN) Progress on the Study of Phospholipids, Phase Transitions and Fabrication of Asymmetric Vesicles

Zhiwu Yu*

(Dept. Chem., Tsinghua Univ.)

3B0915(KN) Structural Thermodynamics Toward a Systematic Understanding of Effects of Incorporated Molecules in a Phospholipid Bilayer

Mafumi Hishida*

(Dept. Chem., Univ. Tsukuba)

3B0940 Study of Polyol-Induced State of α -Lactalbumin by IATC Measurement

T. Marutani, T. Kimura, and T. Kamiyama*

(Dept. Chem., Kindai Univ.)

Break (9:55 ~ 10:00)

3B1000 Thermal Stability of Lysozyme in Aqueous 1-Alkyl-3-Methylimidazolium Solution

M. Noma, M Okabe, T. Miki, and T. Kamiyama*

(Grad. Sch. Sci. Eng., Kindai Univ.)

3B1015 Binding Thermodynamics of Mg^{2+} to HIV-1 Ribonuclease H Domain

Masayuki Oda^{a,*}, Zhaoyong Xi^b, Satomi Inaba^c, Ryan L. Slack^b, Rieko Ishima^b

(^aGrad. Sch. Life Environl. Sci., Kyoto Pref. Univ.; ^bDept. Structl. Bio., Univ. Pittsburgh Sch. Medicine; ^cRes. Util. Div., Jpn. Synchrotron Rad. Res. Inst.)

3B1030 Molecular Dynamics of Amorphous Drug with Structurally Related Impurities Evaluated Using Thermal Analysis

Etsuo Yonemochi^{a,*}, Yoshito Hamada^a

(Sch. Pharm. Sci., Hoshi Univ.)

Poster Session

Room	Date	Time	Due Time for Discussion
Poster	Nov.3 (Friday)	13:30 ~ 15:30	Odd No. Poster (13:30 ~ 14:30) Even No. Poster (14:30 ~ 15:30)

Poster Instrumental, Analytical, Kinetics and General

- P1** Education of Thermal Analysis: Activity of the Working Group on Standardization in JSCTA
 Haruka Abe^a, Riko Ozao^b, Hirohisa Yoshida^c, Nobuyoshi Koga^d, Yoshitaka Shimizu^a, Atsushi Yamazaki^e, Takayoshi Kimura^f, Shun-ichi Kidokoro^g, Yutaka Sawada^h, Hitoshi Kawajiⁱ, Hideyuki Kato^a, Yuko Nishimoto^{g,*}
 (^aNatl. Instit. Adv. Ind. Sci. Tech.; ^bSONY Inst. Higher Educ.; ^cTokyo Metropolitan Univ.; ^dHiroshima Univ.; ^eWaseda Univ.; ^fKindai Univ.; ^gNagaoka Univ. Tech.; ^hTokyo Polytech. Univ.; ⁱTokyo Inst. Tech.; ^gKanagawa Univ.)
- P2** Thermal Hazard Assessment of TMCH Mixed with Inorganic Acids
 Wei-Chun Chen, Chi-Min Shu*
 (Dept. Safety, Health, Environ. Eng., Natl. Yunlin Univ. Sci. Tech. (YunTech))
- P3 ☆** Relaxation Phenomenon of Amorphous Styrene Oligomers by TMDSC at Around Glass Transition Temperature
 J. Fujimura, M. Sugisaki, M. Yokota, E. Nishiyama, I. Tsukushi
 (Dept. Eng., Chiba Inst. Tech.)
- P4 ☆** Thermal Kinetics Analysis of the Spontaneous Combustion of Coal Based on High-Temperature Programmed Experiments
 Jingu Zhao^{a,b,c,*}, Jun Deng^{a,b}, Tao Wang^{a,b}, Yanni Zhang^{a,b}, Carsten Drebenstedt^c
 (^aSch. Safety Eng., Xi'an Univ. Sci. Tech.; ^bShaanxi Key Lab. Prev. Control of Coal Fire, ^cFac. Geosci., Geoen. Mining, TU Bergakademie Freiberg)
- P5 ☆** Effect of Inorganic Additive Flame Retardant on Fire Hazard of Polyurethane Exterior Insulation Material
 Hua Chai, Qiangling Duan, Lin Jiang, Jinhua Sun*
 (State Key Lab. Fire Sci., Univ. Sci. Tech. China)
- P6** Delamination Behavior of Printed Circuit Board by DMA with Sample Observation
 S. Sheng^{a,*}, E. Shimoda^b, Y. Nishiyama^b
 (^aHitachi Instruments (Shanghai) Co. Ltd.; ^bHitachi High-Tech Science Corp.)
- P7** Cloud Point Measurement of Oil Using Sample Observation DSC
 S. Sheng^{a,*}, Y. Kasai^b, Y. Nishiyama^c
 (^aHitachi Instruments (shanghai) Co. Ltd.; ^bHitachi High-Technologies Science Am.; ^cHitachi High-Tech Science Corp.)
- P8** Comparative Study for Evolved Gas Analyses of TG-FTIR and TG-MS
 Tadashi Arai^{a,*}, Mamoru Komatsu^b, Mitsunari Hattori^b
 (^aTherm. Anal. Div., Rigaku Corp.; ^bChem. Anal. Div., Thermo Fisher Scientific Jpn.)
- P9** Thermal Decomposition Kinetics of the Dehydration of Copper Sulfate Pentahydrate
 Xuqiang Zhu, Wen Li, Long Cheng, Yifang Li, Yi Cheng, Donguing Song*
 (Nanjing Univ. Sci. Tech.)

☆ Poster Competition Entry

Poster Inorganic Materials, Ceramics and Metals

- P10 Synthesis of Lanthanum Molybdenum Oxide / LMWNTs Composite Catalysts by High Temperature Solid Phase in Dye-Sensitized Solar Cell
K.Z. Wu*, Y.P. Wang, Y.Y. Xiong, M.X. Wu
(Key Lab. Inorg. Nano-Mater. Hebei Province, Dept. Chem. Mater. Sci., Hebei Normal Univ.)
- P11 Thermal Decomposition Mechanism and Kinetics of Pd/SiO₂ Nanocomposites in Air Atmosphere
Jing Yang*, Qing Liang, Changzheng Zheng, Haiyun Hou
(Sch. Environ. Chem. Eng., Xi'an Polytech. Univ.)
- P12 ☆ Heat Storage and Mechanical Properties of Cement Mortar with Microcapsulated Phase Change Material (PCM) for Thermal Mass Wall
D.A. Youn^{a,*}, S.J. Jang^a, H.D. Yun^{a,*}, S.W. Kim^b, W.S. Park^b
(^aDept. Architect. Eng., Chungnam Natl. Univ.; ^bDept. Construct. Eng. Educ., Chungnam National Univ.)
- P13 Comparative Kinetic Study for the Thermal Decomposition of Structural Concretes Used in the Sodium-Cooled Fast Reactor
N. Koga^{a,*}, S. Kikuchi^b
(^aGrad. Sch. Educ., Hiroshima Univ.; ^bSect. Fast Reactor Res. Develop., Jpn. Atomic Energy Agency)
- P14 ☆ Impact of Environmental Water Vapor on the Thermal Decomposition Behavior of Copper(II) Hydroxide
M. Fukuda, N. Koga,*
(Grad. Sch. Educ., Hiroshima Univ.)
- P15 ☆ Thermoanalytical Characterization of Carbon/Carbon Composite as Exemplified by Mechanical Pencil Leads with Different Hardness
D. Hara, K. Nishikawa, N. Koga *
(Grad. Sch. Educ., Hiroshima Univ.)
- P16 ☆ Influence of Reaction Atmosphere on the Thermal Decomposition Behavior of Mineral Azurite
Y. Tsuboi, N. Koga*
(Grad. Sch. Educ., Hiroshima Univ.)
- P17 ☆ Kinetic Approach to Overlapping Thermal Dehydration and Melting of Sodium Thiosulfate Pentahydrate
N. Kameno, N. Koga*
(Grad. Sch. Educ., Hiroshima Univ.)
- P18 ☆ Particle Size Control by Annealing Temperature of CoZnFe₂O₂ Nanoparticles for Magnetic Hyperthermia
A. Oshima^a, T. Ide^b, K. Kanda^a, K. Fujiwara^b, D. Aihara^a, T. Hashimoto^a, Y. Ichiyangi^{a,b,*}
(^aDept. Phys., Fac. Sci. Eng., Yokohama Natl. Univ.; ^bDept. Phys., Grad. Sch. Eng., Yokohama Natl. Univ.)
- P19 ☆ Temperature Dependence of Magnetic Susceptibility and Self-Heating Property of Mn-Zn Ferrite Nanoparticles
K. Kanda^a, K. Fujiwara^b, T. Ide^b, A. Oshima^a, D. Aihara^a, T. Hashimoto^a, Y. Ichiyangi^{a,b,*}
(^aDept. Phys., Fac. Sci. Eng., Yokohama Natl. Univ.; ^bDept. Phys., Grad. Sch. Eng., Yokohama Natl. Univ.)
- P20 Heat Treatment Effects on Electric and Electroluminescent Properties of (Ca,Sr)TiO₃:Pr Thin Films
T. Kyômen* and K. Aramaki
(Fac. Sci. Eng., Gunma Univ.)

P21	Preparation of $2\text{CaO} \cdot 3\text{B}_2\text{O}_3 \cdot \text{H}_2\text{O}$ Nanomaterials and Evaluation of Their Flame Retardant Properties by a Thermal Analysis Method Hong-Hong Yan, Hong Yang, Zhong-Li Lei, Zhi-Hong Liu (Key Lab. Macromol. Sci. Shaanxi Province, Sch. Chem. Chem. Eng., Shaanxi Normal Univ.)
P22	The Effect of Nitrocellulose Content on B/NC Composites Fabricated by Electrostatic Spraying Yanchun Li*, Yue Yang, Long Cheng, Dongming Song, Yi Cheng (Sch. Chem. Eng., Nanjing Univ. Sci. Tech.)
P23	Phase Behavior of 1-Tetradecanol/Nano-porous Silica Gel Composite Fen Xu ^a , Yunyu Tang ^a , Lixian Sun ^{a,*} , Huanzhi Zhang, Yongpeng Xia ^a , Yongjin Zou, Dongmei Chen ^a , Xiaozheng Lan ^b (^a Sch. Mater. Sci. Eng., Guilin Univ. Electro. Tech.; ^b Col. Chem. Mater. Sci., Shandong Agric. Univ.)

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Poster Organic Materials and Polymers

P24	Thermal Runaway Evaluation for Polymerization of VAM under Catalyzed and Inhibited Conditions Y. Mei, Y.W. Wang (Dept. Occupatl. Saf. Heal., Col. Pub. Health China Med. Univ.)
P25 ☆	Analysis of Water State and Gelation of Methylcellulose Thermo-Reversible Hydrogels by Thermal Analysis Shigeki Mochida ^a , Eita Shimoda ^b , Yuko Nishimoto ^{a,*} (^a Kanagawa Univ.; ^b Hitachi High Tech Science Corp.)
P26 ☆	Influence of Molecular Structure of Amorphous Polymers on Heat Capacity Below Glass Transition Temperature M. Yokota*, E.Nishiyama, J.Fujimura, I.Tsukushi (Grad. Sch. Eng. Chiba Inst. Tech.)
P27	In situ Temperature-dependence Microscopy Observation of Two Phase Co-existing States of Coumarin and Coumarin Derivatives in Melting H. Honda* (Fac. Arts Sci., Fujiyoshida Showa Univ.)
P28	Carbohydrate Recognition of C3-Symmetrical Tripodal Receptor-Type 2,4,6-Trisubstituted 1,3,5-Triazine Derivatives with Antiviral Activities N. Mibu ^a , T. Ohata ^a , M. Sano ^a , J.-R. Zhou ^b , K. Yokomizo ^b , H. Aki ^a , K. Sumoto ^{a,*} (^a Fac. Pharm. Sci., Fukuoka Univ.; ^b Fac. Pharm. Sci., Sojo Univ.)

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Poster Solution, Colloids and Interface

- P29** Effects of Solvents and Solutes on Glass Transition and Fragility for Polyalcohol and Polyamine Solutions of Inorganic Salts
Yukio Terashima*, Naoyuki Sugimoto, Manami Mori, Kiyoshi Takeda
(Naruto Univ. Educ.)
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- P30** Evaluation of LogP of Endocrine Disruptors using DFT-D Methods
M. Fujisawa^{a,*}, M. Tabe^a, H. Ikeda^b, T. Kimura^c
(^aDept. BioTech. Sci., Kindai Univ.; ^bFac. Pharm. Sci., Fukuoka Univ.; ^cRes. Inst. Sci. Tech., Kindai Univ.)
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- P31 ☆** Excess Molar Enthalpies for Binary Mixtures for Amphiphilic Solvents + Water or + Heptane at High Pressure and Temperature
T. Yokozawa^a, Y. Hiyama^b, Y. Sugawara^b, H. Ogawa^b, F. Kimura^b
(^aGrad. Sch. Sci. Eng., Tokyo Denki Univ.; ^bSch. Sci. Eng., Tokyo Denki Univ.)
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- P32** Interaction of Ionic Liquid with Cyclodextrin in Water
A. Aoki, H. Hayashi, T. Kamiyama*
(Dept. Chem., Kindai Univ.)
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- P33** Excess Thermodynamic Properties of Water + Ionic Liquid, 1-Alkyl-3-Methylimidazolium Iodide ([AMIM][I]) Binary Solutions
S. Yoshida, T. Kimura, T. Kamiyama*
(Dept. Chem., Kindai Univ.)
-
- P34** The Influence of Metal Ions on Autocatalytic Oxidation of Formaldehyde by Nitric Acid
Yoshihiko Sato*
(Chem. Safety Res. Group, Natl. Inst. Occupat. Safety and Health)
-
- P35 ☆** LLE of Ternary Mixture of Perfluorohexane + Alcohol + 1,1,1,2,2,3,4,5,5,5-Decafluoropentane at 298.2 K
J. Funayama^a, S. Nagata^b, H. Ogawa^c, F. Kimura^c
(^aGrad. Sch. Sci. Eng., Tokyo Denki Univ.; ^bGrad. Sch. Adv. Sci. Tech., Tokyo Denki Univ.; ^cSch. Sci. Eng., Tokyo Denki Univ.)
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- P36 ☆** Vapor-Liquid equilibrium for binary systems containing 1,1,2,2-tetrafluoroethyl 2,2,2-trifluoroethyl ether
K. Yamaguchi^a, S. Nagata^b, H. Ogawa^c, F. Kimura^c
(^aGrad. Sch. Sci. Eng., Tokyo Denki Univ.; ^bGrad. Sch. Adv. Sci. Tech., Tokyo Denki Univ.; ^cSch. Sci. Eng., Tokyo Denki Univ.)
-
- P37 ☆** Thermodynamic Properties of Binary Mixtures of Fluorine Substituted Hydrocarbons + Benzene or + Cyclohexane at 298.15 K
T. Otake^a, S. Nagata^b, H. Ogawa^c
(^aGrad. Sch. Sci. Eng., Tokyo Denki Univ.; ^bGrad. Sch. Adv. Sci. Tech., Tokyo Denki Univ.; ^cSch. Sci. Eng., Tokyo Denki Univ.)
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- P38** Solubilities of Solid Dyestuffs in Supercritical Carbon Dioxide
Kazuhiro Tamura*
(Sch. Natural Sys., Kanazawa Univ.)
-

P39	Stable Emulsions Formed by Bio-based Amphiphile and their Tunable Properties via Salt <u>P. Zhang</u> ^a , X.D. Zhang ^{a,b} , G.Y. Yang ^a , B.X. Han ^{a,b,*} (^a Beijing Natl. Lab. Molecular Sci., Key Lab. Colloid Interface and Thermodynamics, Inst. Chem., Chinese Acad. Sci.; ^b Sch. Chem. Chem. Eng., Univ. Chinese Acad. Sci.)
P40	CO ₂ -Responsive Aggregation Behaviors of Sugar-based Amphiphiles L.J. Zhang ^{a,b} , <u>G.Y. Yang</u> ^a , P. Zhang ^{a,*} , X.D. Zhang ^{a,b} , B. X. Han ^{a,b,*} (^a Beijing Natl. Lab. Molecular Sci., Key Lab. Colloid Interface and Thermodynamics, Inst. Chem., Chinese Acad. Sci.; ^b Sch. Chem. Chem. Eng., Univ. Chinese Acad. Sci.)
P41	Thermal Stability of Ionic Liquids <u>Tiancheng Mu</u> * (Dept. Chem., Renmin Univ. China)

☆ Poster Competition Entry

Poster Heat Capacity and Phase Transitions

P42	Crystal Structures, Luminescent and Thermal Properties of Lanthanide Complexes with 3,4-Dimethylbenzoic Acid and 2,2'-Bipyridine Pan-Pan Shen ^{a,b} , Ning Ren ^{c,*} , Jian-Jun Zhang ^{a,b,*} , Li-Na Geng ^b , Shu-Ping Wang ^b , Shi-Kao Shi ^b (^a Test. Anal. Ctr., Hebei Normal Univ.; ^b College Chem. Mater. Sci., Hebei Normal Univ.; ^c College Chem. Eng. Mater., Handan Univ.)
P43	Phase Sequence of Ionic Liquid (C _{4mim})PF ₆ Studied from Heat Capacity Measurement T. Koike, T. Idegomi, K. Watanabe, <u>K. Negita</u> (Dept. Chem., Fac. Sci., Fukuoka Univ.)
P44	Thermal Properties of Ionic Liquid (C _{8mim})BF ₄ Investigated from Heat Capacity Measurement R. Amamoto, S. Torikai, K. Watanabe, <u>K. Negita</u> (Dept. Chem., Fac. Sci., Fukuoka Univ.)
P45 ☆	Magnetic Heat Capacity of Cyanide-Bridged Tetradecanuclear Iron Complex <u>M. Noguchi</u> ^{a,*} , Y. Miyazaki ^a , O. Sato ^b , M. Nakano ^a (^a Res. Ctr. Struct. Thermodyn., Grad. Sch. Sci., Osaka Univ.; ^b Inst. Mater. Chem. Eng., Kyushu Univ.)
P46 ☆	Glass Transition and Texture Properties of Hazelnut <u>Tomomi Ebara</u> , Kiyoshi Kawai*, Yoshio Hagura (Grad. Sch. Biosphere Sci., Hiroshima Univ.)
P47 ☆	Thermo-Physics Parameters of Thermal Diffusivity, Specific Heat Capacity, and Thermal Conductivity for Coal within Levels of Pre-Oxidation Yang Xiao ^a , Lan Yin ^a , <u>Jun Deng</u> ^{a,*} , Cai-Ping Wang ^a , Chi-Min Shu ^b (^a Sch. Safety Sci. Eng., Xi'an Univ. Sci. Tech.; ^b Grad. Sch. Eng. Sci. Tech., Natl. Yunlin Univ. Sci. Tech.)

☆ Poster Competition Entry

Poster Energy and Environment

- P48 ☆ Study on Brake Specific Fuel Consumption of Coffee and Jatropha Biodiesel
M. Todaka, Y. Katahira, H. Mori, H. Masamoto, M. Shigematsu, W. Kowhakul*
(Dept. Chem. Eng., Fac. Eng., Fukuoka Univ.)
- P49 ☆ The Thermal Decomposition Behavior of Nitrocellulose Containing Antioxidants Derived from Natural Products
T. Sugiura, E. Higashi, H. Matsunaga, K. Katoh*
(Dept. Chem. Eng., Fukuoka Univ.)
- P50 ☆ Gas Generation Behavior of High Energy Eutectic Mixtures of Ammonium Dinitramide and Amine Nitrates
H. Matsunaga^{a,*}, K. Katoh^a, H. Habu^{b,c}, M. Noda^a, A. Miyake^c
(^aDept. Chem. Eng., Fukuoka Univ.; ^bDept. Space Flight Systems, Inst. Space Astronaut. Sci., Japan Aerospace Explor. Agency; ^cInst. Adv. Sci., Yokohama Natl. Univ.)

☆ Poster Competition Entry

Poster Biothermodynamics, including Food, Pharmaceutical and Medical Appl.

- P51 ☆ Thermodynamic Stability of PET-Hydrolyzing Enzyme, Cut190, Increased by Ca²⁺ Binding
Satomi Inaba^{a,*}, Fusako Kawai^b, Masayuki Oda^c
^aRes. Util. Div., Japan Synchrotron Radi. Res. Inst. (JASRI/SPRING-8); ^bCtr. Fiber Textile Sci., Kyoto Inst. Tech.; ^cGrad. Sch. Life and Environ. Sci., Kyoto Pref. Univ.)
- P52 Residual Solvents in Pharmaceutical Products Studied by Thermogravimetry-Mass spectrometry
Yoshinobu Hosoi^a, Lani Llego Celiz^a, Hiroaki Sato^a, Okky Dwichandr^a Putrab, Daiki Umeda^b, Etsuo Yonemochi^b
(^aTherm. Anal. Div., Rigaku Corp.; ^bSch. Pharm. Pharm. Sci., Hoshi Univ.)
- P53 Studies on Dynamical Behavior of Hydration Water between Lipid Bilayer by Quasi Elastic Neutron Scattering
T. Yamada^a, N. Takahashi^b, T. Tominaga^b, S. Takata^a, H. Seto^c
(^aCROSS; ^bJ-PARC Ctr. JAEA; ^cKENS and CMRC, IMSS, KEK)
- P54 ☆ Mechanism of Thermal Induced Aggregation of Protein with Organic Solvent
T. Marutani, S. Nakanishi, R. Seo, A. Fukumoto, T. Kimura, T. Kamiyama*
(Dept. Chem., Grad. Sch. Sci. Eng., Kindai Univ.)
- P55 ☆ Inclusion of Lysozyme with Modified Mesoporous Silica
S. Nakamori, T. Kamiyama*
(Grad. Sch. Sci. Eng., Kindai Univ.)
- P56 ☆ Thermodynamic Properties of Protein with Cavity Filled by Noble Gas
M. Ishida, T. Kamiyama*
(Grad. Sch. Sci. Eng., Kindai Univ.)

P57 ☆	Effect of Ligand Binding on Fluctuation of Protein by Isothermal Compressibility <u>M. Sawada</u> ^a , K. Shimotani ^b , T. Kamiyama ^{a,*} (^a Dept. Chem., Kindai Univ.; ^b Grad. Sch. Sci. Eng., Kindai Univ.)
P58	Glass Transition and Water Sorption Properties of Calcium Maltobionate - Maltose Mixtures K. Kawai ^{a,b,*} , K. Fukami ^c , S. Takeuchi ^b , T. Fukujyu ^a , Y. Hagura ^{a,b} (^a Grad. Sch. Biosphere Sci., Hiroshima Univ.; ^b Fac. Appl. Biol. Sci., Hiroshima Univ.; ^c San-ei Surochemical Co., Ltd.)
P59	Difference in Formation Mechanism of Inclusion Complex between Configuration Isomers of Gallate-Type Catechin and β -Cyclodextrin <u>H. Ikeda</u> ^a , T. Watanabe ^a , M. Ogata ^a , T. Ohata ^a , M. Yukawa ^a , M. Fujisawa ^b , H. Aki ^a (^a Fac. Pharm. Sci., Fukuoka Univ.; ^b Fac. Biol.-Oriented Sci. Tech., Kindai Univ.)
P60	Effect of the Solution pH on Complex Formation between Epi-Type Catechin and β -Cyclodextrin <u>T. Ohata</u> ^a , H. Ikeda ^a , T. Mizobe ^a , M. Yukawa ^a , H. Aki ^a (Fac. Pharm. Sci., Fukuoka Univ.)
P61	Evaluation of Food Processing and Preservation Conditions of <i>Tremella Fuciformis</i> Polysaccharide via DSC and TG Analyses Shu-Yao Tsai ^a , Cheng-Rong Lee ^a , I-Chen Cheng ^a , Hsuan-Ti Yu ^a , <u>Chun-Ping Lin</u> ^{a,b} (^a Dept. Food Nutrition and Health Biotech., Asia Univ.; ^b Dept. Med. Res., China Med. Univ. Hosp., China Med. Univ.)
P62 ☆	The pH-modulated Interaction between Cytochrome C and Cardiolipin-containing Lipid Mixtures <u>Geng Deng</u> , Haiyuan Sun, Jing Xu, Zhiwu Yu (Dept. Chem., Tsinghua Univ.)
P63	Molecular Mechanism of Creation of Life and Macro-Evolution Based on the Molecular Anvil Model of an Enzyme and Non-Equilibrium Thermodynamics <u>Amaya Kazuo</u> [*] (Non.)

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