## Advanced Molecular Transformations by Organocatalysts 2<sup>nd</sup> International Conference

## 7<sup>th</sup> Symposium on Organocatalysis

Ito Hall (The University of Tokyo), 21<sup>st</sup>- 22<sup>nd</sup> Nov, 2014

Program (Oral & Poster Presentations)

Fri. 21/Nov/2014

9:30- 9:40	Openi	ng Ceremony	Masahiro Tera	ada
Chaired by Yoshiji T 9:40-10:00	akemot <b>IL1</b> Develo Bromic	o <b>Seiji Shirakawa (Nag</b> opment of Chiral Bifunc les for Asymmetric Pha	<b>jasaki Univ.)</b> ctional Quaterna ase-Transfer Re	ry Phosphonium actions
10:00-10:20	<b>IL2</b> Develo Solven	IL2 Kazuaki Kudo (Univ. of Tokyo) Development of Peptide Catalysts for Selective Reactions in Aqueous Solvents		
10:20-10:40	IL3 Oxidati Enantio by Mea	Takahiko Akiyama (C ive Kinetic Resolution oselective Transfer Hy ans of Chiral Phosphor	Gakushuin Univ of Indolines Bas drogenation of P ric Acid	<b>v.)</b> sed on the Ketimines
10:40-11:00	Break			
Chaired by Takahiko 11:00-11:20	ο Akiyar <b>IL4</b> Natura α-Hydr	ma <b>Kazuo Nagasawa (To &amp; Technology)</b> I Products Synthesis b oxylation of β-Ketoesto	<b>okyo Univ. of A</b> based on Organo ers	<b>griculture</b> ocatalytic
11:20-12:00	KL1 Daniel Seidel (Rutgers Univ., USA) Anion-Recognition as a Powerful Tool for Asymmetric Catalysis			
12:00-13:00	Lunch			
13:00-15:00	Poster	Presentation 1	3:00-14:00 4:00-15:00	Odd Numbers Even Numbers
Chaired by Masahiro Terada <b>15:00-15:20 IL5 Nobuyuki Mase (Shizuoka Univ.)</b> High-quality Polylactide Synthesis via Organocatalytic Ring-Opening Polymerization in Supercritical Carbon Dioxide				
15:20-15:40	<b>IL6</b> Asymn carbox	Yoshiji Takemoto (K netric hetero-Michael r ylic acid derivatives	<b>yoto Univ.)</b> eaction of α,β-u	nsaturated
15:40-16:20	KL2 New A Organo	Yonggui Robin Chi ( Univ.,Singapore) ctivation Modes Enable ocatalysis: Unexplored	Nanyang Tech ed by N-Heteroo Opportunities	nological cyclic Carbene
16:20-16:40	Break			

Chaired by Yasuyuki 16:40-17:00	Kita IL7 Takeo Kawabata (Kyoto Univ.) Regio- and Enantioselective Functionalization by Organocatalysis
17:00-17:20	IL8 Susumi Hatakeyama (Nagasaki Univ.) Organocatalytic Asymmetric Synthesis of Tirandamycins
17:20-18:00	<b>KL3 Keiji Morokuma (Kyoto Univ., Japan)</b> Theory and Computation Provide Insights and Discovery on Chemical Reactions of Complex Molecular Systems
18:15-20:15	Banquet
Sat. 22/Nov/2014	
Chaired by Masahiro 9:00-9:20	<ul> <li>Terada</li> <li>IL9 Masamichi Ogasawara (Hokkaido Univ.)</li> <li>Enantioselective Construction of Library of Ferrocene-Based</li> <li>Planar-Chiral Nucleophilic Organocatalysts</li> </ul>
9:20-9:40	IL10 Daisuke Uraguchi (Nagoya Univ.) Catalysis of <i>P</i> -Spiro Chiral Aminophosphonium Salts
9:40-10:00	IL11 Yasushi Imada (Tokushima Univ.) Organocatalytic Oxidations Catalyzed by Non-covalently Dendronized Flavins
10:00-10:20	Break
Chaired by Motomu 10:20-10:40	Kanai IL12 Toshiaki Sunazuka (Kitasato Univ.) Practical Synthesis of Bioactive Natural Products Using Organocatalysts
10:40-11:00	IL13 Yoshinori Kondo (Tohoku Univ.) Deprotonative C-H Functionalization of Aromatic Compounds Using Organocatalytic Systems
11:00-11:40	<b>KL4 Jan- E. Bäckvall (Stockholm Univ., Sweden)</b> Lipases in Dynamic Kinetic Resolution of Alcohols and Amines. Model Studies and Directed Evolution
11:40-12:40	Lunch
Chaired by Yujiro Ha 12:40-13:00	ayashi IL14 Yoshiharu Iwabuchi (Tohoku Univ.) Discovery of a Novel Alkoxyamine-type Precatalyst For Alcohol Oxidation
13:00-13:40	KL5 László Kürti (Univ. of Texas, Southwestern
	Atroposelective Synthesis of Functionalized Biaryls
13:40-14:00	Break
Chaired by Masahiro 14:00-14:20	<ul> <li>Terada</li> <li>IL15 Yasuyuki Kita (Ritsumeikan Univ.)</li> <li>Recent Progress on Metal-Free Oxidative Coupling Reactions</li> </ul>
14:20-14:40	IL16 Yujiro Hayashi (Tohoku Univ.)

Diphenylprolinol silyl ether in enantioselective asymmetric Michael reaction of nitroalkanes and  $\beta$ , $\beta$ -disubstituted  $\alpha$ , $\beta$ -unsaturated aldehydes

- 14:40-15:20KL6Pier Giorgio Cozzi (Univ. of Bologna, Italy)<br/>New Stereoselective Organocatalytic Reactions for the Synthesis<br/>of Isoquinoline Alkaloids
- 15:20-15:40 Break

Chaired by Takahiko 15:40-16:00	Akiyama IL17 Shinji Yamada (Ochanomizu Univ.) Diastereoselective Photocyclization Reactions through Tetraalkylammonium-π Interactions
16:00-16:20	IL18 Masahiro Terada (Tohoku Univ.) Kinetic Resolution of Racemic Amino Alcohols through Intermolecular Acetalization Catalyzed by Chiral Brønsted Acid
16:20-17:00	<b>KL7</b> Tomislav Rovis (Colorado State Univ., USA) Chiral Nucleophilic Carbenes for Use in Organic Synthesis: From Acyl Anion Chemistry to Internal Redox Catalysis and Beyond
17:00-17:05	Closing Remarks Close of Symposium

PS1	<u>Yusuke Shimizu<sup>1,</sup> Atsuhiko Taniguchi<sup>1,2</sup>, Kounosuke Oisaki<sup>1</sup>, Youhei Sohma<sup>1,2</sup>, and Motomu Kanai<sup>1,2</sup> (<sup>1</sup>Graduate School of Pharmaceutical Sciences, The University of Tokyo, <sup>2</sup>Japan Science and Technology Agency (JST), ERATO, Kanai Life Science Catalysis Project)</u>	
Develo Alzheii	ppment of Amyloid β-selective Photooxygenation Catalyst toward Treatment of mer Disease	P54
PS2	Youhei Takeda,* Daichi Hisakuni, Chun-Hsuan Lin, <u>Satoshi Minakata</u> * (Graduate School of Engineering, Osaka University)	
Lewis Aldimii	Acid Catalysis of 2-Halogenoimidazolium Salts in Aza-Diels–Alder Reaction of nes with Danishefsky's Diene	P55
PS3	<u>Yuichi Yoshimura</u> ,* Hiroya Kan-no, Yoshihiro Natori, Yukako Saito, Hideaki Wakamatsu	
Synthe Mediat	(Faculty of Pharmaceutical Sciences, Tonoku Pharmaceutical University) eses of Stavudine and Its 4'-Substituted Analogue Using Hypervalent Iodine ted Oxidative Glycosylation	P56
PS4	Manabu Hatano, Keisuke Nishikawa, Kazuaki Isihiara*	
Develo Brønst	opment of Chiral 3,3'-Diaryl-1,1'-Binaphthyl-2,2'-Disulfonic Acids (BINSA) as Chiral red Acid Catalysts	P57
PS5	Shinobu Takizawa, Kenta Kishi, Tue Minh-Nhat Nguyen, Fernando Arteaga Arteaga,Michitaka Suzuki and Hiroaki Sasai* (The Institute of Scientific and Industrial Research, Osaka University)	
Enanti α-meth	o-and diastereoselective Rauhut-Currier reaction: Facile synthesis of hylidene-γ-butyrolactones and γ-butyrolactams	P58
PS6 Metal-I	<u>Kosuke Nakamura</u> , Yoshinori Kondo (Graduate School of Pharmaceutical Sciences, Tohoku University) Free Dehalogenation and Arylation of Aryl Halides Using Onium Fluorides	P59
PS7 Deprot	<u>Midori Sasaki</u> , Yoshinori Kondo (Graduate School of Pharmaceutical Science, Tohoku University) tonative Silylation of Nitroarenes Using Trifluoromethyltrimethylsilane	P60
PS8	Masayuki Tashiro <sup>1</sup> , Jun Ozawa <sup>1</sup> , Jizhi Ni <sup>1</sup> , Kounosuke Oisaki <sup>1</sup> , Motomu Kanai <sup>1,2</sup>	
Regios Directi	selective Aerobic Oxygenation of sp <sup>3</sup> C-H Bonds of Alcohols Using N-Oxyl Radical ng Activator	P61
PS9	<u>Tomohiro Narumi</u> , <sup>1,2</sup> Norie Momiyama, <sup>*3</sup> Masahiro Terada <sup>*1</sup> ( <sup>1</sup> Graduate School of Science, Tohoku University, <sup>2</sup> Graduate Research on Cooperative Education Program of IMS with Tohoku University, <sup>3</sup> Complex Catalysis, Life and	
Desigr	n of Aryl Phosphinic Acid toward Brønsted Acid Catalyst	P62
PS10 Synthe	<u>Péter Lajos Sóti</u> , Tetsuo Narumi, Naoharu Watanabe, Nobuyuki Mase* (Graduate school of Engineering, Shizuoka University) esis and Application of Self-Assembling GNP Supported Organocatalysts	P63
PS11	Natsuhisa Oka * Kensuke Ori Takahiro Ohshima Tomoki Sakai Kaori Ando	
Asymn	(Faculty of Engineering, Gifu University) netric synthesis of phosphite triesters using chiral Brønsted acids	P64

PS12       Ayaka Toda,* Masahide Sano, Shuichi Nakamura (Graduate School of Engineering, Nagoya Institute of Technology)         Organocatalytic       Decarboxylative       Reaction       with       Cyclic       Ketimines       Using <i>N</i> -Heteroarenesulfonyl Cinchona Alkaloid Amides       P6	65
PS13 <u>Hiroki Mandai</u> ,* Kazuki Fujii, Toshinobu Korenaga, Seiji Suga* (Graduate School of Natural Science and Technology, Okayama University) Enantioselective Steglich Rearrangement of Oxindole Derivatives using New High-performance Chiral Nucleophilic Catalysts	66
PS14Tatsuhiko Arai, Yasuhide Inokuma, Makoto Fujita (School of Engineering, The University of Tokyo)Absolute Structure Determination of Chiral Molecules Using Chiral Crystalline SpongePercention	67
<ul> <li>PS15 <u>Pandurang V. Chouthaiwale</u>, Fujie Tanaka* (Chemistry and Chemical Bioengineering Unit, Okinawa Institute of Science and Technology Graduate University)</li> <li>β-Proline-Catalyzed Reactions of Pyruvates to Synthesize Functionalized Molecules</li> </ul>	68
PS16Tetsuhiro Nemoto, Minami Hayashi, and Yasumasa Hamada (Graduate School of Pharmaceutical Sciences, Chiba University)Synthetic Studies of Pactamycin Using an Organocatalytic Asymmetric AziridinationP6	69
<ul> <li>PS17 <u>Kenichi Murai</u>,* Junki Nakajima, Akira Nakamura, Norimichi Hyogo, Hiromichi Fujioka (Graduate School of Pharmaceutical Sciences, Osaka University)</li> <li>Enantioselective Desymmetrizing, Bromolactonization Reactions of Symmetric Olefinic Dicarboxylic Acids</li> </ul>	70
PS18Shin-ichi Matsuoka,*Shoko Namera, Masato Suzuki (Graduate School of Engineering, Nagoya Institute of Technology)N-Heterocyclic Carbene-Catalyzed Transformations of Acrylates:Cyclotetramerization and Oxa-Michael Addition PolymerizationP7	71
<ul> <li>PS19 Hiromi Ono, Akino Kubota, <u>Yuji Kawato</u>, Hiromichi Egami, and Yoshitaka Hamashima (School of Pharmaceutical Sciences, University of Shizuoka)</li> <li>Phosphorous Lewis Base Catalyzed Enantioselective Bromocyclization of Allylic Amides</li> <li>P7</li> </ul>	72
<ul> <li>PS20 <u>Ryo Horinouchi</u>, Kouhei Kamei, Riki Watanabe, Nobushige Hieda, Naoki Tatsumi, Hiyoshizo Kotsuki* (Faculty of Science, Kochi University)</li> <li>Efficient Enantioselective Synthesis of All-carbon-substituted Quaternary Carbon Stereogenic Centers through the Primary Amine-based Organocatalytic Michael Addition Reaction of α-Substituted Cyclic Ketones at High Pressure</li> </ul>	73
<ul> <li>PS21 Aoi Matsugi, <u>Naruhisa Watanabe</u>, Hiyoshizo Kotsuki* (Faculty of Science, Kochi University)</li> <li>An Organocatalytic Asymmetric Diels-Alder Strategy for the Enantioselective Synthesis of Spirocyclic Oxindole-Cyclohexenones</li> </ul>	74
<ul> <li>PS22 <u>Masanori Nakazawa</u>, Shin-ichi Matsuoka*, Masato Suzuki (Graduate School of Engineering, Nagoya Institute of Technology)</li> <li>Tail-to-Tail Dimerization and Rauhut-Currier Reaction of Various Michael Acceptors Catalyzed by N-Heterocyclic Carbene</li> </ul>	75
PS23 <u>Terumasa Kato</u> , Shin-ichi Matsuoka, Masato Suzuki (Graduate School of Engineering, Nagoya Institute of Technology) Tail-to-Tail Homodimerizations of Methyl Methacrylate and Methacrylonitrile Catalyzed by N-Heterocyclic Carbene P7	76

PS24 Enantic <i>N</i> -Hete	<u>Shun Takahashi</u> , Shuichi Nakamura (Graduate School of Engineering, Nagoya Institute of Technology) oselective Addition of Thiols to Ketimines Derived from Isatins Using proarenesulfonylated Organocatalysts	P77
PS25 Develo	<u>Mutsuyo Ohara</u> , Madoka Koyari, Masashi Hayashi, Kengo Hyodo, Nadaf Rashid Nabisaheb, Shuichi Nakamura* (Graduate School of Engineering, Nagoya Institute of Technology) pment of Chiral Imidazoline-Phosphoric Acid Catalyst and Application to	070
Desym		F/0
PS26 Highly α-Skyta	Erika Sugahara, Shinya Shiomi, Hayato Ishikawa <sup>*</sup> (Graduate School of Science and Technology, Kumamoto University) Efficient Construction of C4-Alkylated Chiral Piperidine Scaffolds; Synthetic Study of anthine	P79
PS27 Photoc	<u>Go Takao</u> , <sup>1</sup> Keisuke Tao, <sup>2</sup> Toshihiro Murafuji, <sup>3</sup> Shin Kamijo <sup>2,*</sup> ( <sup>1</sup> Department of Biology and Chemistry, <sup>2</sup> Graduate School of Science and Engineering, <sup>3</sup> Graduate School of Medicine, Yamaguchi University) hemical Activation of C(sp <sup>3</sup> )–H Bond for One-Pot Functionalization of Cyclic Ethers	P80
PS28	Takuya Isono, Toyoji Kakuchi, Toshifumi Satoh*	
Living / Base C	(Faculty of Engineering, Hokkaido University) Anionic Ring-Opening Polymerization of Substituted Epoxides Using Phosphazene Catalyst	P81
PS29 Enantic Chiral I	<u>Ya-Yi Wang</u> , Kyohei Kanomata, Masahiro Terada* (Graduate School of Science, Tohoku University) oselective Aza-Michael Addition to Protected Alkenyl (Benz)imidazoles Catalyzed by Brønsted Acid	P82
PS30 Synthe asymm	<u>Takuma Kobayashi</u> , Naoki Haraguchi*, Shinichi Itsuno (Graduate School of Engineering, Toyohashi University of Technology) sis of polymer microsphere-supported chiral organocatalyst and its application to netric reaction	P83
PS31 Imidazo Indole/	<u>Tetsuo Narumi</u> ,* Seiji Tsuzuki, Hirokazu Tamamura (Graduate School of Engineering, Shizuoka University) olium Salt-Catalyzed Friedel-Crafts-Type Conjugate Addition of Indoles: Analysis of Imidazolium Complex by ab Initio Calculations	P84
PS32	<u>Tetsuya Ideguchi</u> <sup>1</sup> , Takeshi Yamada <sup>1,2</sup> , Tatsuya Shirahata <sup>3</sup> , Tomoyasu Hirose <sup>1,2</sup> , Akihiro Sugawara <sup>1,2</sup> , Yoshinori Kobayashi <sup>3</sup> , Satoshi Ōmura <sup>3,*</sup> and Toshiaki Sunazuka <sup>1,2</sup> (* <sup>1</sup> Graduate School of Infection Control Sciences, <sup>2</sup> Kitasato Institute for Life Sciences, and <sup>3</sup> Graduate School of Pharmaceutical Sciences,	
Concis	e Asymmetric Total Synthesis of Neoxaline Family	P85
PS33 Metal-f	Yohei Matsumoto, Masami Kuriyama, <u>Osamu Onomura*</u> (Graduate School of Biomedical Sciences, Nagasaki University) ree Oxidation of Alkanes to Carboxylic Acids	P86
PS34 Develo Organo	<u>Naoki Haraguchi,</u> * Nagisa Takenaka, Tatsuaki Onami, Shinichi Itsuno (Graduate School of Engineering, Toyohashi University of Technology) pment of Novel Main-chain Polymers of Chiral Imidazolidinone for Asymmetric ocatalysis	P87
PS35 The De	Ryosuke Matsubara,* <u>Toshiyuki Shimada</u> , Yong-Soon Shin, Masahiko Hayashi (Graduate School of Science, Kobe University) evelopment of a Direct Deoxygenation of Alcohols	P88

PS36 <u>S</u> (( A	Shogo Hirao, Masaru Kato, Yoshihiro Sohtome, Keisuke lida, Kazuo Nagasawa* Graduate School of Biotechnology and Life Science, Tokyo University of Agriculture and Technology)	D00
Entropy-	associated 1,2-Type Frieder-Graits Reaction of Friendis with N-Doc Aldinines	F09
PS37 <u>K</u> ((	<u>Kota Furukori,</u> Minami Odagi, Kazuo Nagasawa* Graduate School of Biotechnology and Life Science, Tokyo University of Agriculture and Technology)	
Synthetic Guanidir	c Studies of (+)-rishirilide B using Oxidative Kinetic Resolution with ne-Bisurea Bifunctional Organocatalyst.	P90
PS38 <u>S</u> ((	<u>Shoji Fujita</u> , Masanori Abe, Masatoshi Shibuya*, Yoshihiko Yamamoto Graduate School of Pharmaceutical Sciences, Nagoya University) ecular Hydroalkoxylation of Unactivated Alkenes/Alkynes Using I <sub>2</sub> -PhSiH <sub>3</sub> Catalytic	
System		P91
PS39 <u>H</u> (I	<u>liromitsu Miyashita,</u> Kodai Saito, Takahiko Akiyama* Faculty of Science, Gakushuin University)	
Chiral Pl	hosphoric Acid-Catalyzed Hydrogen Transfer Reaction of Indoline to Imines	P92
PS40 <u>T</u> ((	<u>omofumi Nakae</u> , Yosuke Toyoda, Keitaro Miyazaki, Toshifumi Dohi, Yasuyuki Kita* College of Pharmaceutical Sciences, Ritsumeikan University)	
A New Utilizing	Carbon-Carbon Bond Forming Strategy for Dearomatizing Spirocylization by Bis(iodoarene) Compounds	P93
PS41 <u>T</u> (I	<u>subasa Itakura,</u> Manato Kobayashi, Keiji Mori, Takahiko Akiyama* Faculty of Science, Gakushuin University)	
Enantios Catalyze	selective Route to Chiral Biaryl Chloride/Iodide by Chiral Phosphoric Acid ed Sequential Halogenation Strategy	P94
PS42 <u>M</u> K R	<u>Makoto Sato<sup>1</sup>,</u> Masahiro Yamanaka <sup>1</sup> , Takeshi Shigeta <sup>2</sup> , Takumi Huruta <sup>2</sup> , Takeo Kawabata <sup>2</sup> ( <sup>1</sup> College of Science, Rikkyo University, <sup>2</sup> Institute for Chemical Research, Kyoto University)	
Theoretic 4PPY-Ca	cal Study of Asymmertic Desymmetrization of 4-Nosylamino-1,7-heptanediol via atalyzed Enantioselective Acylation	P95
PS43 K K K <sup>3</sup>	Kosuke Arita, <sup>1</sup> Masaki Furusawa, <sup>1</sup> Tatsushi Imahori, <sup>2</sup> Kazunobu Igawa, <sup>3</sup> Katsuhiko Tomooka, <sup>3</sup> <u>Ryo Irie*</u> <sup>1</sup> ( <sup>1</sup> Graduate School of Science and Technology, Kumamoto University, <sup>2</sup> Faculty of Engineering, Tokyo University of Science, Institute for Materials Chemistry and Engineering, Kyushy University)	
Catalytic Chiral Ba	c Enantioselective Cycloisomerization of Aromatic Diyne and Enyne Systems with ases	P96
PS44 <u>Y</u>	<u>′oshitaka Yagyu,</u> Mitsuhiro Ueda,* Ilhyong Ryu* Graduate School of Science, Osaka Prefecture University)	
Asymme	etric Reaction Catalyzed by Ammonium Chiral Borate Salt	P97
PS45 <u>A</u>	<u>Mane Morita</u> , Tomonori Misaki,* Takashi Sugimura* Graduate School of Science, University of Hyogo)	
Develop Catalyst	ment of Conjugate Additions to Vinylketons and Dienones Using Chiral Guanidine Bearing a Hydroxy Group	P98
PS46 <u>Y</u> K	<u>'oshiki Shibata,</u> Makoto Yamaguchi, Takatsugu Endo, Kazuaki Ninomiya, Ryohei (akuchi*, Kenji Takahashi* (Faculty of Natural System, Institute of Science and Engineering, Kanazawa University)	
Derivatiz organoca	zation and separation of biomass components using ionic liquids based atalysts	P99

PS47 Minami Odagi, <u>Yoshiharu Yamamoto</u> , Kota Furukori, Kazuo Nagasawa* (Graduate School of Biotechnology and Life Science, Tokyo University of Agriculture and Technology)	
Total synthesis of (+)-linoxepin based upon organocatalytic oxidative kinetic resolution of tetralone derivatives	P100
PS48 <u>Tomoko Yajima</u> ,* Mako Ikegami, Chihiro Nishii, Emiko Nogami	
Photoinduced radical perfluoroalkylation with bromo perfluoroalkane using acenes as catalysts	P101
PS49 <u>Eri Yamamoto<sup>1</sup></u> , Kousaku Horiguchi <sup>2</sup> , Koudai Saito <sup>2</sup> , Takehiko Akiyama <sup>2</sup> , Masahiro Yamanaka <sup>1</sup>	
(College of Science, Rikkyo University, Faculty of Science, Gakushuin University) Theoretical Study on the Mechanism of Stereoselectivity in Chiral Phosphorus Acid Catalyzed Asymmetric Hydrogenation of 1, 5-benzodiazepine Using benzothiazoline	P102
PS50 <u>Takeshi Yamada</u> , <sup>1,2</sup> Tomoyasu Hirose, <sup>1,2</sup> Koh Suzuki, <sup>2</sup> Misato Hosaka, <sup>2</sup> Takumi Furuta, <sup>3</sup> Takeo Kawabata, <sup>3</sup> Satoshi Ōmura, <sup>1</sup> Toshiaki Sunazuka <sup>*1,2</sup> ( <sup>1</sup> Kitasato Institute for Life Sciences, <sup>2</sup> Department of Infection Control Sciences, Kitasato University : <sup>3</sup> Institute for Chemical Research, Kyoto University)	
Chemoselective Functionalization of Bioactive Polyol Natural Products using Organocatalyst	P103
PS51 <u><sup>1</sup>Hirofumi Noda</u> , <sup>2</sup> Takehiko Akiyama, <sup>1</sup> Masahiro Yamanaka ( <sup>1</sup> College of Science, Rikkyo University, <sup>2</sup> Faculty of Science, Gakushuin University) Theoretical Study on Chiral Phosphoric Acid Catalyzed Asymmetric Transfer Hydrogenation of Trifluoromethylated N-H Ketimine Using Benzothiazoline	P104
PS52 Kohei Dobashi, Naoto Iwata, Erika Ishitsubo, Hiroaki Tokiwa, Yumiko Suzuki	
(Faculty of Science and Technology, Sophia University) Experimental and Theoretical Analysis of NHC-Catalyzed Nucleophilic Aroylation	P105
PS53 <u>Shota Yoshioka</u> , Yasuhide Inokuma, Makoto Fujita	
Absolute Structure Determination of Axial and Planar Chiral Compounds by the Crystalline Sponge Method	P106
PS54 <u>Yasushi Senda</u> , Kazunari Nakajima, Yoshiaki Nishibayashi*	
Enantioselective Propargylic Substitution Reactions Using Ruthenium Complexes Bearing Chiral Phosphoric Amide Moiety	P107
<ul> <li>PS55 <u>Kazutaka Shibatomi</u>,* Kazumasa Kitahara, Takuya Okimi, Seiji Iwasa (Graduate School of Engineering, Toyohashi University of Technology)</li> <li>Primary Amine-Catayzed Enantioselective Fluorination of α-Branched Aldehydes and Subsequent Stereospecific C-F Bond Cleavage at Tertiary Carbon</li> </ul>	P108