

研究期間全年度 研究業績

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1. 発表論文等 (査読付き論文, 著書, 総説等の発表状況)

- (1) Facile Synthesis of 3,3'-Disubstituted 2,2'-Binaphthyls by Transition Metal-Catalyzed Double Benzannulations  
Umeda, R.; Tabata, H.; Tobe, Y.; Nishiyama, Y.\* *Chem. Lett.* **2014**, accepted.
- (2) [4.2](2,2')(2,2')Biphenylophanetriyne: A Twisted Biphenylophane with a Highly Distorted Diacetylene Bridge  
Nobusue, S.; Yamane, H.; Miyoshi, H.; Tobe, Y.\* *Org. Lett.* **2014**, in press. (10.1021/ol5004934)
- (3) 4-Substituted 3,5-Dinitro-1,4-dihydropyridines by the Self-Condensation of  $\beta$ -Formyl- $\beta$ -nitroenamine  
Nakaike, Y.; Nishiwaki, N.\*; Ariga, M.; Tobe, Y.\* *J. Org. Chem.* **2014**, 79, 2163-2169. (10.1021/jo5000187)
- (4) Multifunctional  $\pi$ -Expanded Macrocyclic Oligothiophene 6-Mers and Related Macrocyclic Oligomers  
Iyoda, M.\*; Tanaka, K.; Shimizu, H.; Hasegawa, M.; Nishinaga, T.; Nishiuchi, T.; Kunugi, Y.; Ishida, T.; Otani, H.; Sato, H.; Inukai, K.; Tahara, K.; Tobe, Y. *J. Am. Chem. Soc.* **2014**, 136, 2389-2396. (10.1021/ja4101744)
- (5) Direct Observation of Adsorption Geometry for the van der Waals Adsorption of a Single  $\pi$ -Conjugated Hydrocarbon Molecule on Au(111)  
Kim, J.-H.; Jung, J.; Tahara, K.; Tobe, Y.\*; Kim, Y.\*; Kawai, M.\* *J. Chem. Phys.* **2014**, 140, 074709. (10.1063/1.4864458)
- (6) Harnessing a Diacetylene Unit: A Molecular Design for Porous Two-Dimensional Network Formation by Self-Assembly of Alkoxy Dehydrobenzo[12]annulene Derivatives at the Liquid/Solid Interface  
Tahara, K.; Adisoejoso, J.; Inukai, K.; Lei, S.; Noguchi, A.; Li, B.; Vanderlinden, W.; De Feyter, S.\*; Tobe, Y.\* *Chem. Commun.* **2014**, 50, 2831-2833. (10.1039/C3CC47949H)
- (7) Benz[c]indeno[2,1-a]fluorene: A 2,3-Naphthoquinodimethane Incorporated into an Indenofluorene Frame  
Miyoshi, H.; Nobusue, S.; Shimizu, A.; Hisaki, I.; Miyata, M.; Tobe, Y.\* *Chem. Sci.* **2014**, 5, 163-168. (10.1039/c3sc52662d)
- (8) Indenofluorene Congeners: Biradicaloids and Beyond  
Shimizu, A.; Nobusue, S.; Miyoshi, H. Tobe, Y.\* *Pure Appl. Chem.* **2014**, in press.

- (9) Synergistic Effect on Superlattice Formation in Self-Assembled Monolayers at Liquid-Solid Interfaces  
Tahara, K.; De Feyter, S.; Tobe, Y. In *Synergy in Supramolecular Chemistry*; CRC Press: 2014; Chapter 6, in press.
- (10) Self-Assembled Air-Stable Supramolecular Porous Networks on Graphene  
Li, B.; Tahara, K.; Adisoejoso, J.; Vanderlinden, W.; Mali, K.; De Gendt, S.; Tobe, Y.\*; De Feyter, S.\* *ACS Nano* **2013**, *7*, 10764-10772. (10.1021/nl401265f)
- (11) Self-Assembly of Molecular Tripods in Two Dimensions: Structure and Thermodynamics from Computer Simulations.  
Szabelski, P.\*; Rżysko, W.; Pańczyk, T.; Ghijsens, E.; Tahara, K.; Tobe, Y.; De Feyter, S. *RSC Advances* **2013**, *3*, 25159-25165. (10.1039/c3ra45342a)
- (12) Synthesis and Physical Properties of Zethrene Derivatives Bearing Donor/Acceptor Substituents at 7,14-Positions  
Hibi, D.; Kitabayashi, K.; Shimizu, A.; Umeda, R.; Tobe, Y.\* *Org. Biomol. Chem.* **2013**, *11*, 8256-8261. (10.1039/C3OB41674G)
- (13) A Tale of Tails: Alkyl Chain Directed Formation of 2D Porous Networks Reveals Odd-Even Effects and Unexpected Bicomponent Phase Behavior  
Ghijsens, E.; Ivasenko, O.; Tahara, K.; Yamaga, H.; Itano, S.; Balandina, T.; Tobe, Y.\*; De Feyter, S.\* *ACS Nano* **2013**, *7*, 8031-8042. (10.1021/nn4032036)
- (14) Temperature-Induced Structural Phase Transitions in a Two-Dimensional Self-Assembled Network  
Blunt, M. O.\*; Adisoejoso, J.; Tahara, K.; Katayama, K.; Van der Auweraer, M.\*; Tobe, Y.\*; De Feyter, S.\* *J. Am. Chem. Soc.* **2013**, *135*, 12068-12075. (10.1021/ja405585s)
- (15) Tailoring Surface-Confined Nanopores with Photoresponsive Groups  
Tahara, K.\*; Inukai, K.; Adisoejoso, J.; Yamaga, H.; Balandina, T.; Blunt, M. O.; De Feyter, S.\*; Tobe, Y.\* *Angew. Chem. Int. Ed.* **2013**, *52*, 8373-8376. (10.1002/anie.201303745)
- (16) Syntheses and Properties of Graphyne Fragments: Trigonally Expanded Dehydrobenzo[12]annulenes  
Tahara, K.; Yamamoto, Y.; Gross, D. E.; Kozuma, H.; Arikuma, Y.; Ohta, K.; Koizumi, Y.; Gao, Y.; Shimizu, Y.\*; Seki, S.\*; Kamada, K.\*; Moore, J. S.\*; Tobe, Y.\* *Chem. Eur. J.* **2013**, *19*, 11251-11260. (10.1002/chem.201300838)
- (17) Indeno[2,1,-b]fluorene: A  $20\pi$  Electron Hydrocarbon with Very Low Energy Light Absorption

- Shimizu, A.; Kishi, R.; Nakano, M.; Shiomi, D.; Sato, K.; Takui, T.; Hisaki, I.; Miyata, M.; Tobe, Y.\* *Angew. Chem. Int. Ed.* **2013**, *52*, 6076-6079. (10.1002/anie.20130291)
- (18) Synthesis of Indoles: Sulfur-Assisted Reaction of 2-Nitrostilbenes with Carbon Monoxide  
Umeda, R.; Nishimoto, Y.; Mashino, T.; Nishiyama, Y.\* *Heterocycles* **2013**, *87*, 1241-1247. (10.3987/COM-13-12708)
- (19) Oxidative Cyclodimerization that Follows Tandem Cyclization of Dehydro[14]annulenes Induced by Alkylolithium  
Nobusue, S.; Shimizu, A.; Hori, K.; Hisaki, I.; Miyata, M.; Tobe, Y.\* *Angew. Chem. Int. Ed.* **2013**, *52*, 4184-4188. (10.1002/anie.201210233)
- (20) Rhenium-Catalyzed Regioselective Synthesis of 1,2-Disubstituted Naphthalenes  
Umeda, R.; Nishi, S.; Kojima, A.; Kaiba, K.; Nishiyama, Y.\* *Tetrahedron Lett.* **2013**, *54*, 179-182. (10.1016/j.tetlet.2012.10.123)
- (21) Selective Introducing of Aryl and Amino Groups: Reaction of Benzanthrone and Organometallic Reagents  
Umeda, R.; Namba, T.; Yoshimura, T.; Nakatsukasa, M.; Nishiyama, Y.\* *Tetrahedron* **2013**, *69*, 1526-1531. (10.1016/j.tet.2012.12.013)
- (22) 直接観察から探る  $\pi$  電子科学  
戸部 義人\*, 田原 一邦, CSJ Current Review 未来材料を創出する  $\pi$  電子系の科学, 未来材料を創出する  $\pi$  電子系の科学, **2013**, *12*, 105-111.
- (23) Solvent-Induced Homochirality in Surface-Confined Low-Density Nanoporous Molecular Networks  
Destoop, I.; Ghijssens, E.; Katayama, K.; Tahara, K.; Mali, K. S.; Tobe, Y.\*; De Feyter, S.\* *J. Am. Chem. Soc.* **2012**, *134*, 19568-19571. (10.1002/ja2106652)
- (24) Ordering of Molecules with  $\pi$ -Conjugated Triangular Core by Switching Hydrogen Bonding and van der Waals Interactions  
Kim, J.-H.; Tahara, K.; Jung, J.; De Feyter, S.; Tobe, Y.\*; Kim, Y.\*; Kawai, M.\* *J. Phys. Chem. C* **2012**, *116*, 17082-17088. (10.1002/jp3048949)
- (25) The Role of Substrate in Directing the Self-Assembly of Multicomponent Supramolecular Networks at the Liquid-Solid Interface  
Balandina, T.; Tahara, K.; Sandig, N.; Blunt, M.; Adisojojoso, J.; Lei, S.; Zerbetto, F.\*; Tobe, Y.\*; De Feyter, S.\* *ACS Nano* **2012**, *6*, 8381-8389. (10.1002/nn303144r)
- (26) Molecular Propellers that Consist of Dehydrobenzo[14]annulene Blades  
Nobusue, S.; Mukai, Y.; Fukumoto, Y.; Umeda, R.; Tahara, K.; Sonoda, M.; Tobe, Y.\* *Chem. Eur. J.* **2012**, *18*, 12814-12824. (10.1002/chem.201201061)

- (27) Synthesis and Structure of 1,4,5,8-Tetraethylnaphthalene Derivatives  
Takeda, T.; Tobe, Y.\* *Chem. Commun.* **2012**, 48, 7841-7843. (10.1039/c2cc33740a)
- (28) 固液界面における多孔性二次元分子集合体の形成と制御  
戸部 義人 \*, 有機合成化学協会誌, **2012**, 70, 1255-1266.  
(10.5059/yukigoseikyokaishi.70.1255)
- (29) One Building Block, Two Different Nanoporous Self-Assembled Monolayers: a Combined STM and Monte Carlo Study  
Adisoejoso, J.; Tahara, K.; Lei, S.; Szabelski, P.; Rzyzsko, W.; Inukai, K.; Blunt, M. O.; Tobe, Y.\*; De Feyter, S.\* *ACS Nano* **2012**, 6, 897-903. (10.1021/nn204398m)
- (30) Chemistry of Anthracene–Acetylene Oligomers XX: Synthesis, Structures, and Self-Association of Anthracene–Anthraquinone Cyclic Compounds with Ethynylene Linkers  
Iwanaga, T.; Miyamoto, K.; Tahara, K.; Inukai, K.; Okuhata, S.; Tobe, Y.; Toyota, S.\* *Chem. Asian. J.* **2012**, 7, 935-943. (10.1002/asia.201101000)
- (31) Synthesis of Dibenz[*a,h*]anthracenes by Pd-Catalyzed Intramolecular Double-Cyclization of (*Z,Z*)-*p*-Styrylstilbenes  
Umeda, R.; Miyake, S.; Nishiyama, Y.\* *Chem. Lett.* **2012**, 41, 215-217. (10.1246/cl.2012.215)
- (32) 幾何学模様をもつ二次元の多孔性分子ネットワーク  
田原一邦, 戸部義人\*, 化学, **2012**, 67 (3), 12-16.
- (33) Electrophilic Transannular Cyclization of Octadehydrodibenzo[12]annulene Reexamined: Indication of the Formation of Both *anti*- and *syn*-Indenofluorenes  
Takeda, T.; Inukai, K.; Tahara, K.; Tobe, Y.\* *J. Org. Chem.* **2011**, 76, 9116-9121. (10.1021/jo2014593)
- (34) Formation of a Non-Crystalline Bimolecular Porous Network at a Liquid/Solid Interface  
Tahara, K.; Ghijssens, E.; Matsushita, M.; Szabelski, P.; De Feyter, S.\*; Tobe, Y.\* *Chem. Commun.* **2011**, 47, 11459-11461. (10.1039/c1cc14362j)
- (35) Control and Induction of Surface Confined Homochiral Porous Molecular Networks  
Tahara, K.; Yamaga, H.; Ghijssens, E.; Inukai, K.; Adisoejoso, J.; Blunt, M. O.; De Feyter, S.\*; Tobe, Y.\* *Nat. Chem.* **2011**, 3, 714-719. (10.1038/nchem.901)
- (36) Indeno[2,1-*a*]fluorene: An Air-Stable *ortho*-Quinodimethane Derivatives  
Shimizu, A.; Tobe, Y.\* *Angew. Chem. Int. Ed.* **2011**, 50, 6906-6910. (10.1002/anie.201101950)
- (37) Molecular Pentagonal Tiling: Self-Assemblies of Pentagonal-Shaped Macrocycles at Liquid/Solid Interfaces

- Tahara, K.; Balandina, T.; Furukawa, S.; De Feyter, S.\*; Tobe, Y.\* *CrystEngComm* **2011**, *14*, 5551-5558. (10.1039/C1CE05336A)
- (38) Mixing Behavior of Alkoxylated Dehydrobenzo[12]annulenes at the Solid-Liquid Interface: Scanning Tunneling Microscopy and Monte Carlo Simulations  
Lei, S.\*; Tahara, K.; Müllen, K.; Szabelski, P.\*; Tobe, Y.\*; De Feyter, S.\* *ACS Nano* **2011**, *5*, 4145-4157. (10.1021/nn200874k)
- (39) Direct Dendronization of Polystyrenes using Dendritic Diarylcarbenium Ion Pools  
Nokami, T.; Watanabe, T.; Musya, N.; Morofuji, T.; Tahara, K.; Tobe, Y.; Yoshida, J.\* *Chem. Commun.* **2011**, *47*, 5575-5577. (10.1039/c1cc10923e)
- (40) PtCl<sub>2</sub>-Catalyzed Cyclization of *o*-Diethynylbenzene Derivatives Triggered by Intramolecular Nucleophilic Attack  
Miki, K.; Kuge, H.; Umeda, R.; Sonoda, M.; Tobe, Y.\* *Synth. Commun.* **2011**, *41*, 1077-1087. (10.1080/00397911003797817)
- (41) Rhenium-Catalyzed Benzannulation of *o*-Alkynylbenzaldehyde with Alkynes to Multiple 2,3-Disubstituted Naphthalenes  
Umeda, R.; Kaiba, K.; Morishita, S.; Nishiyama, Y.\* *ChemCatChem* **2011**, *3*, 1743-1746. (10.1002/cctc.201100203)
- (42) Self-Assembled Monolayers of Alkoxy-Substituted Octadehydrodibenzo[12]annulenes on a Graphite Surface: Attempts at *peri*-Benzopolyacene Formation by On-Surface Polymerization  
Tahara, K.; Inukai, K.; Hara, N.; Johnson, C. A., II; Haley, M. M.; Tobe, Y.\* *Chem. Eur. J.* **2010**, *16*, 8319-8328. (10.1002/chem.201000711)
- (43) Conductance of Single Triangular Dehydrobenzo[12]annulene Derivative Bridged between Au Electrodes  
Kiguchi, M.\*; Tahara, K.; Takahashi, Y.; Hasui, K.; Tobe, Y.\* *Chem. Lett.* **2010**, *39*, 788-789. (10.1246/cl.2010.788)
- (44) Role of Pseudopolymorphism on Concentration Dependent Competitive Adsorption at a Liquid/Solid Interface  
Lei, S.; Tahara, K.; Tobe, Y.\*; De Feyter, S.\* *Chem. Commun.* **2010**, *46*, 9125-9127. (10.1039/C0CC03445B)
- (45) Synthesis, Structure, and Photophysical Properties of Dibenzo[*de,mn*]naphthalenes  
Wu, T.-C.; Chen, C.-H.; Hibi, D.; Shimizu, A.; Tobe, Y.; Wu, Y.-T.\* *Angew. Chem. Int. Ed.* **2010**, *49*, 7059-7062. (10.1002/anie.201001929)

- (46) 3-(2-Aminocarbonylphenyl)propanoic Acid Analogs as Potent and Selective EP3 Receptor Antagonists. Part 3: Synthesis, Metabolic Stability, and Biological Evaluation of Optically Active Analogs  
Asada, M.\*; Obitsu, T.; Kinoshita, A.; Nagase, T.; Yoshida, T.; Yamaura, Y.; Takizawa, H.; Yoshikawa, K.; Sato, K.; Narita, M.; Nakai, H.; Toda, M.; Tobe, Y. *Bioorg. Med. Chem.* **2010**, *18*, 3212-3223. (10.1016/j.bmc.2010.03.028)
- (47) Towards Two-Dimensional Nanoporous Networks: Crystal Engineering at the Solid-Liquid Interface.  
Lei, S.; Tahara, K.; Adisoejoso, J.; Balandina, T.; Tobe, Y.\*; De Feyter, S.\* *CrystEngComm* **2010**, *12*, 3369-3381. (10.1039/C0CE00282H)
- (48) Supramolecular Surface-Confined Architectures Created by Self-Assembly of Triangular Phenylene-Ethynylene Macrocycles via van der Waals Interaction.  
Tahara, K.\*; Lei, S.\*; Adisoejoso, J.; De Feyter, S.\*; Tobe, Y.\* *Chem. Commun.* **2010**, *46*, 8507-8525. (10.1039/C0CC02780D)
- (49) Tetradehydrodinaphtho[10]annulene and its Transformation into Zethrene: A Hitherto Unknown Dehydroannulene and a Forgotten Aromatic Hydrocarbon  
Umeda, R.; Hibi, D.; Miki, K.; Tobe, Y.\* *Pure Appl. Chem.* **2010**, *82*, 871-878. (10.1351/PAC-CON-09-10-12)
- (50) Two-Dimensional Networks of Rhombic-Shaped Fused Dehydrobenzo[12]annulenes: Structural Variants under Concentration Control  
Tahara, K.; Okuhata, S.; Adisoejoso, J.; Lei, S.; Fujita, T.; De Feyter, S.\*; Tobe, Y.\* *J. Am. Chem. Soc.* **2009**, *131*, 17583-175907. (10.1021/ja904481j)
- (51) Tetradehydrodinaphtho[10]annulene: A Hitherto Unknown Dehydroannulene and a Viable Precursor to Stable Zethrene Derivatives  
Umeda, R.; Hibi, D.; Miki, K.; Tobe, Y.\* *Org. Lett.* **2009**, *11*, 4104-4106. (10.1021/ol9015942)
- (52) Two-Dimensional Crystal Engineering: A Four-Component Architecture at a Liquid-Solid Interface  
Adisoejoso, J.; Tahara, K.\*; Okuhata, S.; Lei, S.; Tobe, Y.\*; De Feyter, S.\* *Angew. Chem. Int. Ed.* **2009**, *48*, 7553-7556. (10.1002/anie.200900436)
- (53) Selective Metallation of 3-Halothiophenes: Practical Methods for the Synthesis of 2-Bromo-3-formylthiophene  
Sonoda, M.; Kinoshita, S.; Luu, T.; Fukuda, H.; Miki, K.; Umeda, R.; Tobe, Y.\* *Synth. Commun.* **2009**, *39*, 3315-3323. (10.1080/00397910902763904)
- (54) Polynuclear Cyclophanes

Tobe, Y.\*; Takeda, T. In *Science of Synthesis*; Siegel, J. S., Tobe, Y. Eds.; Aromatic Ring Assemblies, Polycyclic Aromatic Hydrocarbons, and Conjugated Polyenes; Georg Thieme: Stuttgart, 2010; Vol. 45b, Product Class 29, pp 1311-1348.

(55) 巨大共役パイ電子系炭化水素の創出と機能

戸部義人\*, 信末俊平, 化学工業, **2009**, *60*, 20-24.

## 2. 学会発表等 (国内外の招待講演および国際会議での発表状況)

(1) Adaptable Molecular Building Block in On-Surface Self-Assembly

Tobe, Y. 247th ACS National Meeting & Exposition, Dallas, USA, 2014.3.16-20 (招待講演) .

(2) Tailoring Surface-Confined Nanopores within 2D Porous Molecular Networks

Tahara, K.; Inukai, K.; Katayama, K.; Adisoejoso, J.; Blunt, M. O.; De Feyter, S.; Tobe, Y. 247th ACS National Meeting & Exposition, Dallas, USA, 2014.3.16-20 (招待講演) .

(3) 新奇的な構造をもつ共役パイ電子系炭化水素の創出に関する研究

戸部義人, 第7回有機 $\pi$ 電子系シンポジウム, 高崎, 2013.12.13-14 (受賞講演) .

(4) Harnessing Diacetylene Units for Formation of Porous Two-Dimensional Network of Dehydrobenzo[12]annulene Derivatives at the Liquid/Solid Interface.

Tahara, K.; Adisoejoso, J.; Inukai, K.; Li, B.; De Feyter, S.; Tobe, Y. Aachen-Osaka Joint Symposium, RWTH Aachen, Aachen, Germany, 2013.12.2-3 (口頭発表) .

(5) Synthesis of Twisted Cyclooctatetraenes by Formal [4+4] Cyclodimerization of Highly Reactive Indenofluorenes

Tobe, Y. 8th International Conference on Cutting-Edge Organic Chemistry in Asia, Osaka, Japan, 2013.11.25-28 (ポスター発表) .

(6) Synthesis and Photophysical Properties of 9,10-Di(3-aryl-2-naphthyl)anthracenes

Umeda, R.; Kimura, M.; Nishiyama, Y.; Tobe, Y. 8th International Symposium on Integrated Synthesis, Nara, Japan, 2013.11.29-12.1 (ポスター発表) .

(7) Synthesis of Diindenopyrenes by Intramolecular Cyclization of Tetrakis(mesitylethynyl)naphthalene

Hibi, D.; Tobe, Y. 8th International Symposium on Integrated Synthesis, Nara, Japan, 2013.11.29-12.1 (ポスター発表) .

(8) Synthesis of Twisted Cyclooctatetraenes by Formal [4+4] Cyclodimerization of in-situ Generated Indenofluorenes

Nobusue, S.; Fujita, K.; Tobe, Y. 8th International Symposium on Integrated Synthesis, Nara, Japan, 2013.11.29-12.1 (ポスター発表) .

(9) 有機合成化学で挑む2次元超分子化学の世界

戸部義人 日本化学会近畿支部北陸地区講演会, 石川, 2013.11.22-22 (招待講演).

- (10) An Approach to Periodically Ordered Modification of Graphene via Non-Covalent Interactions

Tobe, Y. 2nd Erlangen Symposium on Synthetic Carbon Allotropes, Erlangen-Nürnberg, Germany, 2013.9.29-10.2 (招待講演) .

- (11) Formation and Reactivity of Two-Dimensional Porous Molecular Network Having Photo-reactive Diazirine Units as Carbene Sources

Hada, K.; Tahara, K.; Tobe, Y. 5th International Conference on Recent Progress in Graphene Research (RPGR 2013), Tokyo, Japan, 2013.9.9-13 (ポスター発表) .

- (12) The Indenofluorene Business

Tobe, Y. 15th Asian Chemical Congress, Singapore, Singapore, 2013.8.19-23 (招待講演) .

- (13) Indenofluorene Congeners: Biradicaloids and Beyond

Tobe, Y. 15th International Symposium on Novel Aromatic Compounds, Taipei, Taiwan, 2013.7.28-8.2 (基調講演) .

- (14) Synthesis of Diindenopyrene by Intramolecular Cyclization of

Tetrakis(mesitylethynyl)naphthalene

Hibi, D.; Kitabayashi, K.; Takeda, T.; Tobe, Y. 15th International Symposium on Novel Aromatic Compounds, Taipei, Taiwan, 2013.7.28-8.2 (ポスター発表) .

- (15) Two-Dimensional Self-Assemblies of Octadehydro[12]annulenes at the Liquid/solid Interfaces

Tahara, K.; Ando, D.; Kawamoto, Y.; Tobe, Y. 15th International Symposium on Novel Aromatic Compounds, Taipei, Taiwan, 2013.7.28-8.2 (ポスター発表) .

- (16) Host-Guest Chemistry in Two-Dimensional Space

Tobe, Y. 8th International Symposium on Macrocyclic and Supramolecular Chemistry, Arlington, USA, 2013.7.7-11 (招待講演) .

- (17) Construction of Functionalized Two-Dimensional Pores by Zinc Porphyrin Units

Iritani, K.; Tahara, K.; Tobe, Y. 8th International Symposium on Macrocyclic and Supramolecular Chemistry (8th ISMSC), Arlington, USA, 2013.7.7-11 (ポスター発表) .

- (18) Tailoring Nanopores Formed by Molecular Self-Assembly at Liquid-Solid Interfaces

Tobe, Y. Mini-Symposium on Supramolecular Materials, Stony Brook, USA, 2013.7.5 (招待講演) .

- (19) Synthesis of Covalently Linked 2D Molecular Network using Imine Forming Reaction at the Liquid/solid Interface

Tahara, K.; Kaneko, K.; Tobe, Y. 11th International Symposium on Functional  $\pi$ -Electron Systems, Arcachon, France, 2013.6.2-7 (口頭発表) .



- (20) 新しい分野への挑戦：有機合成化学で挑む2次元分子集合の世界  
戸部義人, 日本化学会近畿支部研究最前線講演会, 大阪, 2013.5.14 (招待講演) .
- (21) Approaches to Synthesis of Covalently Linked 2D Molecular Networks at Liquid/Solid Interfaces  
Tahara, K.; Kaneko, K.; Inukai, K.; Adisoejoso, J.; De Feyter, S.; Tobe, Y. FNANO-13 - 10th Annual Conf on Foundations of Nanoscience: Self-Assembled Architectures and Devices, Snowbird, USA, 2013.4.15-18 (口頭発表) .
- (22) The Role of Substrate in Directing the Self-Assembly of Multicomponent Supramolecular Networks at the Liquid-Solid Interface  
Tahara, K.; Balandina, T.; Sändig, N.; Blunt, M. O.; Adisoejoso, J.; Lei, S.; Zerbetto, F.; De Feyter, S.; Tobe, Y. The Twelfth International Kyoto Conference on New Aspects of Organic Chemistry (IKCOC-12), Kyoto, Japan, 2012. 11.12-16 (口頭発表) .
- (23) Tetracyclopenta[*def,jkl,pqr,vwx*]tetraphenylene: Synthesis and Properties of Conjugated Macrocyclic System Consisting of *as*-Indacene Substructure  
Nobusue, S.; Shimizu, S.; Tobe, Y. The Twelfth International Kyoto Conference on New Aspects of Organic Chemistry (IKCOC-12), Kyoto, Japan, 2012. 11.12-16 (ポスター発表) .
- (24) Fluorophilic Interactions in Design of Two-Dimensional Molecular Self-Assemblies: Formation and Guest Recognition  
Katayama, K.; Tahara, K.; Tobe, Y. The Twelfth International Kyoto Conference on New Aspects of Organic Chemistry (IKCOC-12), Kyoto, Japan, 2012. 11.12-16 (ポスター発表) .
- (25) Synthesis of Tetraethylnaphthalene and Transformation into Polycyclic Aromatic Compounds  
Hibi, D.; Kitabayashi, K.; Takeda, T.; Tobe, Y. The Twelfth International Kyoto Conference on New Aspects of Organic Chemistry (IKCOC-12), Kyoto, Japan, 2012. 11.12-16 (ポスター発表) .
- (26) Facile Synthesis of 2,2'-Binaphthyl Derivatives by Benzannulation Reaction  
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- (27) Synthesis and Physical Properties of Sterically Hindered 9,10-Dinaphthylanthracenes  
Umeda, R.; Kimura, M.; Nishiyama, Y.; Tobe, Y. The Twelfth International Kyoto Conference on New Aspects of Organic Chemistry (IKCOC-12), Kyoto, Japan, 2012.12.12-16 (ポスター発表) .

- (28) ゼトレンとインデノフルオレン：古くて新しい芳香族化合物の化学  
戸部義人, 平成 24 年度有機合成化学北陸セミナー, 富山, 2012.10.5-6 (招待講演) .
- (29) 固体表面における多孔性二次元分子集合体の形成と制御  
戸部義人, 第 23 回基礎有機化学討論会, 京都, 2012.9.19-21 (招待講演) .
- (30) Indenofluorenes: Old Yet New Aromatic Hydrocarbons with Singlet Biradical Characters  
Shimizu, A.; Tobe, Y. 6th Spanish Portuguese Japanese Organic Chemistry Symposium, Lisboa, Portugal, 2012.7.18-20 (ポスター発表) .
- (31) Zethrenes and Indenofluorenes: Old yet New Aromatic Hydrocarbons with Singlet Biradical Characters  
Tobe, Y. UDS-JSPS Joint Seminar, Strasbourg, France, 2012.6.12 (招待講演) .
- (32) Homochiral Two-Dimensional Porous Molecular Networks of Dehydrobenzo[12]annulene Derivatives: Control and Induction  
Tahara, K.; Yamaga, H.; Ghijssens, E.; Inukai, K.; De Feyter, S.; Tobe Y. Supramolecular Chemistry Conference 2012, Lanzarote, Spain, 2012.2.20-23 (口頭発表) .
- (33) Functional Nano Pores Created on Surfaces by Self-Assembly of Triangular-Shaped Macrocycles via van der Waals Interactions  
Tobe Y. Supramolecular Chemistry Conference 2012, Lanzarote, Spain, 2012.2.20-23 (招待講演) .
- (34) Synthesis of Multiple 2,3-Disubstituted Naphthalenes by Rhenium-Catalyzed Benzannulation of *o*-Alkynylbenzaldehyde with Alkynes  
Umeda, R.; Morishita, S.; Nishiyama, Y.; Tobe Y. International Symposium on Catalysis and Fine Chemicals (C&FC2011), Nara, Japan, 2011.12.4-8 (ポスター発表) .
- (35) Tailored Pores in Two-Dimensional Molecular Networks on a Surface: Light Driven Pore Size Modulation  
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- (36) Metastable Aromatic Hydrocarbons: Zethrenes and Indenofluorenes  
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- (37) Indeno[2,1-a]fluorene Dimers Formed by Transannular Cyclization of Dehydrobenzo[14]annulene  
Nobusue, S.; Shimizu, A.; Tahara, K.; Tobe, Y. The Seventh International Symposium on Integrated Synthesis (ISIS-7), Hyogo, Japan, 2011.10.9-10 (ポスター発表) .

- (38) Benzannulation Approach to Synthesis of Highly Elaborated Helical Molecules Having 2,3-Disubstituted Naphthalene Units  
Umeda, R.; Morishita, S.; Nishiyama, Y.; Tobe, Y. The Seventh International Symposium on Integrated Synthesis (ISIS-7), Hyogo, Japan, 2011.10.9-10 (ポスター発表) .
- (39) 分子をならべてつくる幾何学模様－2次元分子集合体のSTM観測－  
戸部義人, 化学千一夜 2011, 和歌山, 2011.7.29-30 (招待講演)
- (40) Control and Induction of Surface Confined Homochiral Porous Molecular Networks  
Tahara, K.; Yamaga, H.; Ghijsens, E.; Inukai, K.; Adisojoso, J.; Blunt, M. O.; De Feyter, S.; Tobe, Y. 14th International Symposium on Novel Aromatic Compounds (ISNA-14), Eugene, Oregon, USA, 2011.7.24-29 (口頭発表) .
- (41) Benzannulation of *o*-Alkynylbenzaldehyde with Alkyne to Highly Elaborated Polycyclic Aromatic Compounds  
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- (42) Molecular Propellers Consisting of Three Dehydrobenzo[14]annulene Blades  
Nobusue, S.; Mukai, Y.; Tahara, K.; Tobe, Y. 14th International Symposium on Novel Aromatic Compounds (ISNA-14), Eugene, Oregon, USA, 2011.7.24-29 (ポスター発表) .
- (43) Formation of Unprecedented Polycyclic Aromatic Hydrocarbons by BuLi-induced Tandem Cyclization of Dehydrobenzo[14]annulene  
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- (44) Synthesis and Photophysical Properties of 1,4,5,8-Tetrakis(arylethynyl)naphthalene  
Takeda, T.; Tobe, Y. 14th International Symposium on Novel Aromatic Compounds (ISNA-14), Eugene, Oregon, USA, 2011.7.24-29 (ポスター発表) .
- (45) Indenofluorene Isomers: 6-5-6-5-6 Membered Ring Hydrocarbons with Singlet Biradical Character  
Tobe, Y.; Shimizu, A. 14th International Symposium on Novel Aromatic Compounds (ISNA-14), Eugene, Oregon, USA, 2011.7.24-29 (ポスター発表) .
- (46) Transannular Approaches to Polycyclic Aromatic Hydrocarbons from Dehydrobenzoannulenes  
Tobe, Y. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (招待講演) .
- (47) 2D Self-Assembly of Trinagular Molecules on Surfaces via Alkyl Group Interdigitation: Dynamics and Control

Tobe, Y. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (招待講演) .

(48) Synthesis of *syn*- and *anti*-Indenofluorenes by Intramolecular Tandem Annulation Reaction of Octadehydrodibenzo[12]annulene Derivative

Takeda, T.; Inukai, K.; Tahara, K.; Tobe, Y. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(49) 2D Homochiral Nanoporous Molecular Network of Dehydrobenzo[12]annulenes: Design Strategy, Control, and Induction

Yamaga, H.; Tahara, K.; Tobe, Y. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(50) Synthesis and Physical Properties of Zethrene Derivatives

Hibi, D.; Umeda, R.; Takeda, T.; Shimizu, A.; Tobe, Y. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(51) Intramolecular Tandem Cyclization and Subsequent Dimerization of Dehydrobenzo[14]annulene Derivatives

Nobusue, S.; Shimizu, A.; Tahara, K.; Tobe, Y. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(52) Synthesis of Star-Shaped Tetrakisdehydrobenzo[12]annulene by Alkyne Metathesis Reaction

Yamamoto, Y.; Gao, Y.; Gross, D.; Tahara, K.; Tobe, Y. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(53) Formation of an Unexpected Polycyclic Aromatic Hydrocarbon by BuLi-Induced Tandem Cyclization of Dehydrobenzo[14]annulene

Nobusue, S.; Shimizu, A.; Tahara, K.; Tobe, Y. The 6th International Symposium on Intergrated Synthesis (ISIS-6), Maiko Villa Kobe, Kobe, Hyogo, Japan , 2010.10.23-24 (ポスター発表) .

(54) Two-Dimensional Self-Assembly of Triangular Molecules on Surfaces via Alkyl Group Interdigitation: Control and Dynamics

Tobe, Y. The 11th Eurasia Conference on Chemical Sciences, King Hussein bin Talal Convention Center at the Dead Sea, Jordan, Jordan, 2010.10.6-10 (招待講演)

- (55) Control and Dynamics of Two-Dimensional Self-Assembly of Triangular Molecules on Surfaces via Alkyl Chain Interdigitiation  
Tahara, K.; Inukai, K.; Okuhata, S.; Tobe, Y. 3rd Aachen-Osaka Joint, RWTH Aachen, Aachen, Germany, 2010.9.6-7 (口頭発表) .
- (56) 固液界面において形成される 2次元分子ネットワークのダイナミクスと制御, 戸部義人, 第22回万有札幌シンポジウム, 札幌芸術文化の館, 札幌, 北海道, 2010.7.3 (招待講演)
- (57) Two-Dimensional Homochiral Nanoporous Molecular Network of Dehydrobenzo[12]annulenes: Design Strategy, Control, and Induction  
Yamaga, H.; Tahara, K.; Tobe, Y. Joint Symposium of (POST-ISMSC5) and The 6th Symposium on Host-Guest Chemistry (HGCS2010), Osaka International House, Osaka, Japan, 2010.6.11-12 (ポスター発表) .
- (58) Modular Molecular Networks of Butadiyne-Bridged Macrocycles  
Tahara, K.; Gotoda, J.; Stimpson, C. N.; De Feyter, S.; Tobe, Y. Joint Symposium of (POST-ISMSC5) and The 6th Symposium on Host-Guest Chemistry (HGCS2010), Osaka International House, Osaka, Japan, 2010.6.11-12 (ポスター発表) .
- (59) Two-Dimensional Porous Molecular Networks of Dehydrobenzo[12]annulenes Bearing Azobenzene Units: Effect of Pore Size Modulation on Guest Co-Adsorption  
Tahara, K.; Inukai, K.; De Feyter, S.; Tobe, Y. 5th International Symposium on Macrocyclic and Supramolecular Chemistry (ISMSC-2010), Nara Public Hall, Nara, Japan, 2010.6.6-10 (ポスター発表) .
- (60) Two-Dimensional Homochiral Nanoporous Molecular Network of Dehydrobenzo[12]annulenes: Design Strategy, Control, and Induction  
Yamaga, H.; Tahara, K.; Tobe, Y. 5th International Symposium on Macrocyclic and Supramolecular Chemistry (ISMSC-2010), Nara Public Hall, Nara, Japan, 2010.6.6-10 (ポスター発表) .
- (61) 2D Crystal Engineering: A Four-Component Architecture at a Liquid-Solid Interface  
Tahara, K.; Adisoejoso, J.; Okuhata, S.; Lei, S.; De Feyter, S.; Tobe, Y. The 9th International Symposium on Functional  $\pi$ -Electron System, Georgia Institute of Technology, Atlanta, USA, 2010.5.23-28 (口頭発表) .
- (62) Self-Assembly of Functionalized Hexakis(phenylethynyl)dehydrobenzo[12]annulenes  
Yamamoto, Y.; Kozuma, H.; Arikuma, Y.; Shimizu, Y.; Tahara, K.; Tobe, Y.\* The Eleventh International Kyoto Conference on New Aspects on Organic Chemistry (IKCOC-11), Kyoto, Japan, 2009.11.9-13 (ポスター発表)

- (63) Tetradehydronaphtho[10]annulene: A Hitherto Unknown Dehydroannulenes and a Viable Precursor to Stable Zethrene Derivatives  
Umeda, R.; Hibi, D.; Miki, K.; Tobe, Y.\* The Eleventh International Kyoto Conference on New Aspects on Organic Chemistry (IKCOC-11), Kyoto, Japan, 2009.11.9-13 (ポスター発表)
- (64) A New Strategy for Generation of Benzoannulene Diocations Based on Platinum Catecholate Complex: The First  $10\pi$  Aromatic Dehydrobenzo[12]annulene Dication  
Tahara, K.; Kozuma, H.; Tobe, Y.\* The 14th Japan-Korea Seminar on Organic Chemistry, Shizuoka, Japan, 2009.10.23-26 (口頭発表)
- (65) Synthesis and Properties of Trinuclear Platinum Complex of Catecholate Type Dehydrobenzo[12]annulene: Clues of Aromatic [12]Annulene Dication  
Tahara, K.; Kozuma H.; Kishi, R.; Takahashi, H.; Nakano, M.; Shiro, M.; Tobe, Y.\* The 13th International Symposium on Novel Aromatic Compounds (ISNA-13), Luxembourg, 2009.7.19-24 (ポスター発表)
- (66) 2D Crystal Engineering: A Four-Component Architecture at a Liquid-Solid Interface  
Tahara, K.; Adisojoso, J.; Okuhata, S.; Lei, S.; De Feyter, S.; Tobe, Y.\* The 13th International Symposium on Novel Aromatic Compounds (ISNA-13), Luxembourg, 2009.7.19-24 (ポスター発表)
- (67) Some Uncovered Facets in Dehydroannulene Chemistry: Reactivity, Aromaticity, and Self-Assembly on Solid Surface  
Tobe, Y.\* The 13th International Symposium on Novel Aromatic Compounds (ISNA-13), Luxembourg, 2009.7.19-24 (招待講演)
- (68) 2次元ポリマーは合成化学者の夢にすぎないか？  
戸部義人, 特定領域研究「炭素資源の高度分子変換」ポストシンポジウム, 札幌, 2009.10.16 (招待講演)
- (69) 有機分子をならべてつくる幾何学模様：固液界面における2次元分子ネットワークの構築  
戸部義人, 第26回有機合成化学セミナー, 前橋, 2009.9.16-18 (招待講演)

### 3. 特許

- (1) 光起電力素子用化合物、光起電力素子用材料および光起電力素子  
戸部義人、信末俊平、清水章弘、北澤大輔、山本修平  
特願 2013-035113, 2013.2.25

#### 4. 学会・シンポジウム等の開催状況

- (1) The Twelfth International Kyoto Conference on New Aspects of Organic Chemistry (IKCOC-12), 京都, 2012.11.12-16 (戸部義人, プログラム委員長)
- (2) 新学術領域研究「反応集積化の合成化学 革新的手法の開拓と有機物質創成への展開」第1回成果報告会, 大阪大学, 2012.11.11-12 (戸部義人, 総括班班員).
- (3) 新学術領域研究「反応集積化の合成化学 革新的手法の開拓と有機物質創成への展開」第2回成果報告会, 大阪大学, 2012.1.28-29 (戸部義人, 総括班班員).
- (4) The Seventh International Symposium on Integrated Synthesis (ISIS-7), Hyogo, 2011.10.9-10 (戸部義人, 総括班班員).
- (5) Joint Symposium of (POST-ISMSC5) and The 6th Symposium on Host-Guest Chemistry (HGCS2010), 大阪国際交流センター, 大阪, 2010.6.11-12 (戸部義人, 組織委員長).
- (6) 5th International Symposium on Macrocyclic and Supramolecular Chemistry (ISMSC-2010), 奈良県新公会堂, 奈良, 2010.6.6-10 (戸部義人, 国内組織委員).
- (7) The Eleventh International Kyoto Conference on New Aspects of Organic Chemistry (IKCOC-11), 京都, 2009.11.9-13 (戸部義人, プログラム委員長).

#### 5. 受賞等

- (1) 戸部義人 (教授)  
2013年度有機 $\pi$ 電子系学会賞、2013.12.14
- (2) 三好宏和 (修士2年)  
優秀ポスター賞 第3回CSJ化学フェスタ2013、2013.11.15
- (3) 日比大治朗 (博士3年)  
学生講演賞 第93回日本化学会年会、2013.4.25
- (4) 清水章弘 (元助教)  
優秀講演賞 日本化学会第92春季年会、2012.4.23
- (5) 信末俊平 (博士3年)  
優秀ポスター賞 第23回基礎有機化学討論会、2012.9.21
- (6) 金子恭平 (修士2年)  
優秀ポスター賞 第2回CSJ化学フェスタ2012、2012.11.13
- (7) 入谷康平 (修士1年)  
優秀ポスター賞 第2回CSJ化学フェスタ2012、2012.11.13
- (8) 野口綾 (修士1年)  
優秀ポスター賞 第2回CSJ化学フェスタ2012、2012.11.13
- (9) 田原一邦 (助教)  
2011年度日本化学会進歩賞、2012.3.26

(10) 戸部義人 (教授)

2011 年度有機合成化学協会賞 (学術的)、2012.2.17

(11) 信末俊平 (博士 2 年)

ポスター賞 The Seventh International Symposium on Integrated Synthesis (ISIS-7), Hyogo, 2011.10.10

(12) 古谷創 (修士 1 年)

Student Poster Competition Winner, The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.19

(13) 山家裕之 (修士 1 年)

ポスター賞 Joint Symposium of (POST-ISMSC5) and The 6th Symposium on Host-Guest Chemistry (HGCS2010), 2010.6.6.12

(14) 山家裕之 (修士 1 年)

ポスター賞 5th International Symposium on Macrocyclic and Supramolecular Chemistry (ISMSC-2010), 2010.6.6.8

(15) 中池由美 (博士 2 年)

学生講演賞 第 89 回日本化学会年会、2009.4.13

## 6. 新聞報道等

なし

## 7. 国民との科学・技術対話

(1) 大阪大学「出身高校での講演」、大阪教育大学附属高校天王寺校舎、題目：「ますます広がる化学の世界」科学技術や社会における化学の役割が今後ますます重要になることに関連して、反応集積合成化学に言及した。対象者：高校生 13 名 (男子 12 名、女子 1 名)、教員 2 名、平成 25 年 6 月 26 日、アンケートなし

## 8. 領域内の共同研究の準備・実施状況とその成果

(1) 共同研究先：首都大学東京，伊与田研究室 (A03 班，公募班員)

共同研究内容：新規パイ共役化合物が固液界面において形成する二次元分子配列の走査型トンネル (STM) 顕微鏡観察。サンプル測定。

共同研究成果：論文発表



- (2) 共同研究先：岡山理科大学，豊田研究室（A03 班，公募班員）  
受け入れ人員：津屋卓也（博士課程学生）  
受け入れ期間：2012.10.12-18, 2013.2.18-20  
共同研究内容：新規共役化合物が形成する単分子膜の走査型トンネル顕微鏡 (STM) による観察  
共同研究成果：論文作成中
- (3) 共同研究先：京都大学，吉田研究室（A01 班，公募班員）  
派遣人員（受入）：野上敏材（助教），武者直樹（修士 1 年），諸藤達也（学部 4 年）  
派遣期間（受入）：2010.5.31, 2010.6.19, 2010.6.29  
共同研究内容：原子間力顕微鏡(AFM)を用いたデンドロナイズドポリマーの観察  
共同研究成果：論文発表
- (4) 共同研究先：岡山理科大学，豊田研究室（A03 班，公募班員）  
派遣人員（受入）：津田哲哉（博士 2 年）  
派遣期間（受入）：2010.4.26-2010.5.1  
共同研究内容：新規パイ共役化合物が固液界面において形成する二次元分子配列の走査型トンネル(STM)顕微鏡観察  
共同研究成果：論文発表、学会発表

## 9. その他特記事項

- (1) 共同機器測定サンプルの受け入れ  
サンプル依頼元：京都大学、吉田研究室（A01 班、計画班員）  
測定内容：持ち込まれたデンドロナイズドポリマーのサンプルを、新学術領域研究により本学に導入した AFM を用いて測定した。
- (2) 共同機器測定サンプルの受け入れ  
サンプル依頼元：大阪大学、久保研究室（A03 班、計画班員）  
測定内容：持ち込まれた拡張トリプチセンのサンプルを、新学術領域研究により本学に導入した STM を用いて測定した。
- (3) 共同機器測定サンプルの受け入れ  
サンプル依頼元：首都大学東京、伊與田研究室（A03 班、公募班員）  
測定内容：持ち込まれた環状オリゴチオフエンのサンプルを、新学術領域研究により本学に導入した STM を用いて測定した。

- (4) 共同機器測定サンプルの受け入れ  
サンプル依頼元：岡山理科大学、豊田研究室（A03 班、公募班員）  
測定内容：持ち込まれた環状アントラセン誘導体のサンプルを、新学術領域研究により本学に導入した STM を用いて測定した。
- (5) *Angew.Chem.Int.Ed* 誌 Back Cover 掲載  
戸部義人教授（A03 班）の論文（Indeno[2,1-b]fluorene: A 20- $\pi$ -Electron Hydrocarbon with Very Low-Energy Light Absorption. Shimizu, A.; Kishi, R.; Nakano, M.; Shiomi, D.; Sato, K.; Takui, T.; Hisaki, I.; Miyata, M.; Tobe, Y. *Angew. Chem. Int. Ed.* **2013**, *52*, 6076-6079.）が、雑誌 Back Cover に採用された。
- (6) *Angew.Chem.Int.Ed* 誌 Inside Cover 掲載  
戸部義人教授（A03 班）の論文（Oxidative Cyclodimerization After Tandem Cyclization of Dehydrobenzo[14]annulenes Induced by Alkylolithium. Nobusue, S.; Shimizu, A.; Hori, K.; Hisaki, I.; Miyata, M.; Tobe, Y. *Angew. Chem. Int. Ed.* **2013**, *52*, 4042.）が、雑誌 Inside Cover に採用された。
- (7) *Chem. Commun.* 誌 Cover 掲載  
戸部義人教授（A03 班）の論文（Harnessing a Diacetylene Unit: A Molecular Design for Porous Two-Dimensional Network Formation by Self-Assembly of Alkoxy Dehydrobenzo[12]annulene Derivatives at the Liquid/Solid Interface. Tahara, K.; Adisojoso, J.; Inukai, K.; Lei, S.; Noguchi, A.; Li, B.; Vanderlinden, W.; De Feyter, S.; Tobe, Y. *Chem. Commun.* **2014**, *50*, 2831-2833.）が、雑誌 Cover に採用された。
- (8) *Angew.Chem.Int.Ed* 誌 Cover 掲載  
戸部義人教授（A03 班）の論文（Two-Dimensional Crystal Engineering: A Four-Component Architecture at a Liquid-Solid Interface. Adisojoso, J.; Tahara, K.; Okuhata, S.; Lei, S.; Tobe, Y.; De Feyter, S. *Angew. Chem. Int. Ed.* **2009**, *48*, 7553-7556.）が、雑誌 Cover に採用された。