

# Publication List

Kyoto University Institute for Chemical Research  
Professor Atsushi Wakamiya  
(2023/01/27)

## <Article>

### 194. Synergistic Surface Modification of Tin–Lead Perovskite Solar Cells

Shuaifeng Hu, Pei Zhao, Kyohei Nakano, Robert D. J. Oliver, Jorge Pascual, Joel A. Smith, Takumi Yamada, Minh Anh Truong, Richard Murdey, Nobutaka Shioya, Takeshi Hasegawa, Masahiro Ehara, Michael B. Johnston, Keisuke Tajima, Yoshihiko Kanemitsu, Henry J. Snaith\*, [Atsushi Wakamiya\\*](#)  
*Adv. Mater.* **2022**, *in press*. DOI:10.1002/adma.202208320

### 193. A Universal Surface Treatment for p–i–n Perovskite Solar Cells

Shuaifeng Hu, Jorge Pascual, Wentao Liu, Tsukasa Funasaki, Minh Anh Truong, Shota Hira, Ruito Hashimoto, Taro Morishita, Kyohei Nakano, Keisuke Tajima, Richard Murdey, Tomoya Nakamura, [Atsushi Wakamiya\\*](#)  
*ACS Appl. Mater. Interfaces* **2022**, *14*, 56290–56297. DOI:10.1021/acscami.2c15989

### 192. Perovskite/Perovskite Tandem Solar Cells in the Substrate Configuration with Potential for Bifacial Operation

Lidón Gil–Escrig, Shuaifeng Hu, Kassio P. S. Zanoni, Abhyuday Paliwal, M. Angeles Hernández–Fenollosa, Cristina Roldán–Carmona, Michele Sessolo, [Atsushi Wakamiya](#), Henk J. Bolink\*  
*ACS Materials Lett.* **2022**, *4*, 2638–2644. DOI:10.1021/acsmaterialslett.2c01001

### 191. Composition–Property Mapping in Bromide–Containing Tin Perovskite Using High–Purity Starting Materials

Tomoya Nakamura, Kento Otsuka, Shuaifeng Hu, Ruito Hashimoto, Taro Morishita, Taketo Handa, Takumi Yamada, Minh Anh Truong, Richard Murdey, Yoshihiko Kanemitsu, [Atsushi Wakamiya\\*](#)  
*ACS Appl. Energy Mater.* **2022**, *5*, 14789–14798. DOI:10.1021/acsaem.2c02144

### 190. Molecular engineering of enamine–based hole–transporting materials for high–performing perovskite solar cells: influence of the central heteroatom

Deimante Vaitukaityte,† Minh Anh Truong,† Kasparas Rakstys,\* Richard Murdey, Tsukasa Funasaki, Takumi Yamada, Yoshihiko Kanemitsu, Vygintas Jankauskas, Vytautas Getautis,\* [Atsushi Wakamiya\\*](#)  
*Sol. RRL* **2022**, *6*, 2200590. DOI:10.1002/solr.202200590

### 189. Rapidly expanding spin–polarized exciton halo in a two–dimensional halide perovskite at room temperature

Go Yumoto, Fumiya Sekiguchi, Ruito Hashimoto, Tomoya Nakamura, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*Sci. Adv.* **2022**, *8*, eabp8135. DOI:10.1126/sciadv.abp8135

### 188. Operational stability, low light performance, and long–lived transients in mixed–halide perovskite solar cells with a monolayer–based hole extraction layer

Richard Murdey, Yasuhisa Ishikura, Yuko Matsushige, Shuaifeng Hu, Jorge Pascual, Minh Anh Truong, Tomoya Nakamura, [Atsushi Wakamiya](#)  
*Sol. Energy Mater. Sol. Cells* **2022**, *245*, 111885. DOI:10.1016/j.solmat.2022.111885

- 187. Metal-free ferroelectric halide perovskite exhibits visible photoluminescence correlated with local ferroelectricity**  
Taketo Handa, Ruito Hashimoto, Go Yumoto, Tomoya Nakamura, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu\*  
*Sci. Adv.* **2022**, *8*, eabo1621. DOI:10.1126/sciadv.abo1621
- 186. Multivariate Analysis of Mixed Ternary and Quaternary A-Site Organic Cations in Tin Iodide Perovskite Solar Cells**  
Eita Nakanishi, Ryosuke Nishikubo, Fumitaka Ishiwari, Tomoya Nakamura, [Atsushi Wakamiya](#), Akinori Saeki\*  
*ACS Materials Lett.* **2022**, *4*, 1124–1134. DOI:10.1021/acsmaterialslett.2c00229
- 185. Anti-Stokes photoluminescence from CsPbBr<sub>3</sub> nanostructures embedded in a Cs<sub>4</sub>PbBr<sub>6</sub> crystal**  
Yuto Kajino, Shuji Otake, Takumi Yamada, Kazunobu Kojima, Tomoya Nakamura, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu, Yasuhiro Yamada  
*Phys. Rev. Mater.* **2022**, *6*, L043001. DOI:10.1103/PhysRevMaterials.6.L043001
- 184. Optimized Carrier Extraction at Interfaces for 23.6% Efficient Tin-Lead Perovskite Solar Cells**  
Shuaifeng Hu, Kento Otsuka, Richard Murdey, Tomoya Nakamura, Minh Anh Truong, Takumi Yamada, Taketo Handa, Kazuhiro Matsuda, Kyohei Nakano, Atsushi Sato, Kazuhiro Marumoto, Keisuke Tajima, Yoshihiko Kanemitsu, [Atsushi Wakamiya](#)  
*Energy Environ. Sci.* **2022**, *15*, 2096–2107. DOI:10.1039/D2EE00288D
- 183. Carrier lifetime measurement of perovskite films by differential microwave photoconductivity decay**  
Keisuke OHDAIRA, Huynh Thi Cam Tu, Ai Shimazaki, Ryuji KANEKO, Yuuka Sumai, Md Shahiduzzaman, Tetsuya TAIMA, [Atsushi Wakamiya](#)  
*Jpn. J. Appl. Phys.* **2022**, *61*, 068001. DOI:10.35848/1347-4065/ac5d22
- 182. Starburst Carbazole Derivatives as Efficient Hole Transporting Materials for Perovskite Solar Cells**  
Aisté Jegorové,† Minh Anh Truong,† Richard Murdey, Maryte Daskeviciene, Tadas Malinauskas, Kristina Kantminiene, Vyginas Jankauskas, Vytautas Getautis, [Atsushi Wakamiya](#)  
( A.J. and M.A.T. contributed equally to this work )  
*Sol. RRL* **2021**, *6*, 2100877. DOI:10.1002/solr.202100877
- 181. Mixed lead-tin perovskite films with >7 μs charge carrier lifetimes realized by maltol post-treatment**  
Shuaifeng Hu, Minh Anh Truong, Kento Otsuka, Taketo Handa, Takumi Yamada, Ryosuke Nishikubo, Yasuko Iwasaki, Akinori Saeki, Richard Murdey, Yoshihiko Kanemitsu, [Atsushi Wakamiya](#)  
*Chem. Sci.* **2021**, *12*, 13513–13519. DOI:10.1039/D1SC04221A
- 180. Immediate and Temporal Enhancement of Power Conversion Efficiency in Surface-Passivated Perovskite Solar Cells**  
Yongyoon Cho, Jueming Bing, Hyung Do Kim, Yong Li, Jianghui Zheng, Shi Tang, Martin A. Green, [Atsushi Wakamiya](#), Shujuan Huang, Hideo Ohkita, Anita W. Y. Ho-Baillie  
*ACS Appl. Mater. Interfaces* **2021**, *13*, 39178–39185. DOI:10.1021/acsmi.1c06878

- 179. Ultrastrong coupling between THz phonons and photons caused by an enhanced vacuum electric field**  
Zhenya Zhang, Hideki Hirori, Fumiya Sekiguchi, Ai Shimazaki, Yasuko Iwasaki, Tomoya Nakamura, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*Phys. Rev. Res.* **2021**, *3*, L032021. DOI:10.1103/PhysRevResearch.3.L032021 Highlighted in Kyoto-u, ICR HP
- 178. Formation of trans-Poly(thienylenevinylene) Thin Films by Solid-State Thermal Isomerization**  
Masayuki Wakioka, Natsumi Yamashita, Hiroki Mori, Richard Murdey, Takafumi Shimoaka, Nobutaka Shioya, [Atsushi Wakamiya](#), Yasushi Nishihara, Takeshi Hasegawa, Fumiyuki Ozawa  
*Chem. Mater.* **2021**, *33*, 5631–5638. DOI:10.1021/acs.chemmater.1c01016
- 177. Enhancing the Hot-Phonon Bottleneck Effect in a Metal Halide Perovskite by Terahertz Phonon Excitation**  
Fumiya Sekiguchi, Hideki Hirori, Go Yumoto, Ai Shimazaki, Tomoya Nakamura, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*Phys. Rev. Lett.* **2021**, *126*, 077401. DOI:10.1103/PhysRevLett.126.077401
- 176. Elucidating Mechanisms behind Ambient Storage-Induced Efficiency Improvements in Perovskite Solar Cells**  
Yongyoon Cho, Hyung Do Kim, Jianghui Zheng, Jueming Bing, Yong Li, Meng Zhang, Martin A. Green, [Atsushi Wakamiya](#), Shujuan Huang, Hideo Ohkita, Anita W.Y. Ho-Baillie  
*ACS Energy Lett.* **2021**, *6*, 925–933. DOI:10.1021/acsenergylett.0c02406 Highlighted in Kyoto-u, Press Release
- 175. Near-Ultraviolet Transparent Organic Hole-Transporting Materials Containing Partially Oxygen-Bridged Triphenylamine Skeletons for Efficient Perovskite Solar Cells**  
Minh Anh Truong, Hayoon Lee, Ai Shimazaki, Ryota Mishima, Masashi Hino, Kenji Yamamoto, Kento Otsuka, Taketo Handa, Yoshihiko Kanemitsu, Richard Murdey, [Atsushi Wakamiya](#)  
*ACS Appl. Energy Mater.* **2021**, *4*, 1484–1495. DOI:10.1021/acsaem.0c02677
- 174. Ag-(Bi, Sb, In, Ga)-I Solar Cells: Impacts of Elemental Composition and Additive on the Charge Carrier Dynamics and Crystal Structures**  
Fumiya Iyoda, Ryosuke Nishikubo, [Atsushi Wakamiya](#), Akinori Saeki  
*ACS Appl. Energy Mater.* **2020**, *3*, 8224–8232. DOI:10.1021/acsaem.0c00628
- 173. Large thermal expansion leads to negative thermo-optic coefficient of halide perovskite CH<sub>3</sub>NH<sub>3</sub>PbCl<sub>3</sub>**  
Taketo Handa, Hirokazu Tahara, Tomoko Aharen, Ai Shimazaki, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*Phys. Rev. Mater.* **2020**, *4*, 074604. DOI:10.1103/PhysRevMaterials.4.074604
- 172. Hole-Transporting Polymers Containing Partially Oxygen-Bridged Triphenylamine Units and Their Application for Perovskite Solar Cells**  
Ruito Hashimoto, Minh Anh Truong, Anesh Gopal, Alwani Imanah Rafieh, Tomoya Nakamura, Richard Murdey, [Atsushi Wakamiya](#)  
*J. Photopolym. Sci. Technol.* **2020**, *33*, 505–516. DOI:10.2494/photopolymer.33.505

- 171. Additive-free Cost-Effective Hole-Transporting Materials for Perovskite Solar Cells Based on Vinyl Triarylamines**  
H. Nishimura, I. Okada, Taro Tanabe, Tomoya Nakamura, Richard Murdey, [Atsushi Wakamiya](#)  
*ACS Appl. Mater. Interfaces* **2020**, *12*, 32994–33003. DOI:10.1021/acsami.0c06055
- 170. Sn(IV)-free tin perovskite films realized by in situ Sn(0) nanoparticle treatment of the precursor solution**  
Tomoya Nakamura, Shinya Yakumaru, Minh Anh Truong, Kyusun Kim, Jiewei Liu, Shuaifeng Hu, Kento Otsuka, Ruito Hashimoto, Richard Murdey, Takahiro Sasamori, Hyung Do Kim, Hideo Ohkita, Taketo Handa, Yoshihiko Kanemitsu, [Atsushi Wakamiya](#)  
*Nat. Commun.* **2020**, *11*, 3008. DOI:10.1038/s41467-020-16726-3
- 169. How the Mixed Cations (Guanidium, Formamidinium, and Phenylethylamine) in Tin Iodide Perovskites Affect Their Charge Carrier Dynamics and Solar Cell Characteristics**  
Eita Nakanishi, Ryosuke Nishikubo, [Atsushi Wakamiya](#), Akinori Saeki  
*J. Phys. Chem. Lett.* **2020**, *11*, 4043–4051. DOI:10.1021/acs.jpcclett.0c00686 Suppl Cover
- 168. Recycled Utilization of a Nanoporous Au Electrode for Reduced Fabrication Cost of Perovskite Solar Cells**  
Fengjiu Yang, Jinzhe Liu, Zheng Lu, Pengfei Dai, Tomoya Nakamura, Shenghao Wang, Luyang Chen, [Atsushi Wakamiya](#), Kazunari Matsuda  
*Adv. Sci.* **2020**, *7*, 1902474. DOI:10.1002/advs.201902474
- 167. How to Make Dense and Flat Perovskite Layers for >20% Efficient Solar Cells: Oriented, Crystalline Perovskite Intermediates and their Thermal Conversion**  
Masashi Ozaki, Yumi Nakaïke, Ai Shimazaki, Mina Jung, Naoki Maruyama, Shinya Yakumaru, Alwani Imanah Rafieh, Piyasiri Ekanayake, Takashi Saito, Yuichi Shimakawa, Takahiro Sasamori, Yasujiro Murata, Richard Murdey, [Atsushi Wakamiya](#)  
*Bull. Chem. Soc. Jpn.* **2019**, *92*, 1972–1979. DOI:10.1246/bcsj.20190241
- 166. Single crystal structure and electroluminescence efficiency of blue fluorescence OLED emitters using triple core chromophores**  
Hyocheol Jung, Seokwoo Kang, Yeonhee Sim, Mina Jung, [Atsushi Wakamiya](#), Ji-Hoon Leed, Jongwook Park  
*Org. Electron.* **2019**, *73*, 261–265. DOI:10.1016/j.orgel.2019.06.018
- 165. Propeller-Shaped Aluminum Complexes with an Azaperylene Core in the Ligands**  
Masahiro Tsukao, Yoshifumi Hashikawa, Nana Toyama, Masahiro Muraoka, Michihisa Murata, Takahiro Sasamori, [Atsushi Wakamiya](#), Yasujiro Murata  
*Inorganics* **2019**, *7*, 109. DOI:10.3390/inorganics7090109
- 164. Photophysics of lead-free tin halide perovskite films and solar cells**  
Taketo Handa, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*APL Materials* **2019**, *7*, 080903. DOI:10.1063/1.5109704

- 163. Iodine-rich mixed composition perovskites optimised for tin(IV) oxide transport layers: the influence of halide ion ratio, annealing time, and ambient air aging on solar cell performance**  
Masashi Ozaki, Yasuhisa Ishikura, Minh Anh Truong, Jiewei Liu, Iku Okada, Taro Tanabe, Shun Sekimoto, Tsutomu Ohtsuki, Yasujiro Murata, Richard Murdey, [Atsushi Wakamiya](#)  
*J. Mater. Chem. A* **2019**, *7*, 16947–16953. DOI:10.1039/C9TA02142F
- 162. Influence of hole mobility on charge separation and recombination dynamics at lead halide perovskite and spiro-ometad interface**  
Maning Liu, Hanming Liu, Safna Ravindi Padmaperuma, Masaru Endo, Ai Shimazaki, [Atsushi Wakamiya](#), Yasuhiro Tachibana  
*J. Photopolym. Sci. Technol.* **2019**, *32*, 727–733. DOI:10.2494/photopolymer.32.727
- 161. Phthalimide-Based Transparent Electron-Transport Materials with Oriented-Amorphous Structures: Preparation from Solution-Processed Precursor Films**  
Tomoya Nakamura, Nobutaka Shioya, Takeshi Hasegawa, Yasujiro Murata, Richard Murdey, [Atsushi Wakamiya](#)  
*ChemPlusChem* **2019**, *84*, 1396–1404. DOI:10.1002/cplu.201900274
- 160. Planar Perovskite Solar Cells with High Efficiency and Fill Factor Obtained Using Two-Step Growth Process**  
Fengjiu Yang, Jiewei Liu, Xiaofan Wang, Kenya Tanaka, Keisuke Shinokita, Yuhei Miyauchi, [Atsushi Wakamiya](#), Kazunari Matsuda  
*ACS Appl. Mater. Interfaces* **2019**, *11*, 15680–15687. DOI:10.1021/acsami.9b02948
- 159. A Purified, Solvent-Intercalated Precursor Complex for Wide Process Window Fabrication of Efficient Perovskite Solar Cells and Modules**  
Masashi Ozaki, Ai Shimazaki, Mina Jung, Yumi Nakaike, Naoki Maruyama, Shinya Yakumaru, Alwani Imanah Rafieh, Takahiro Sasamori, Norihiro Tokitoh, Piyasiri Ekanayake, Yasujiro Murata, Richard Murdey, [Atsushi Wakamiya](#)  
*Angew. Chem., Int. Ed.* **2019**, *58*, 9389–9393. DOI:10.1002/anie.201902235
- 158. Iodide-Mediated or Iodide-Catalyzed Demethylation and Friedel-Crafts C–H Borylative Cyclization Leading to Thiophene-Fused 1,2-Oxaborine Derivatives**  
Keisuke Shigemori, Momoka Watanabe, Julie Kong, Koichi Mitsudo, [Atsushi Wakamiya](#), Hiroki Mandai, Seiji Suga  
*Org. Lett.* **2019**, *21*, 2171–2175. DOI:10.1021/acs.orglett.9b00485
- 157. High-order harmonic generation from hybrid organic-inorganic perovskite thin films**  
Hideki Hirori, Peiyu Xia, Yasushi Shinohara, Tomohito Otobe, Yasuyuki Sanari, Hirokazu Tahara, Nobuhisa Ishii, Jiro Itatani, Kenichi L. Ishikawa, Tomoko Aharen, Masashi Ozaki, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*APL Materials* **2019**, *7*, 041107. DOI:10.1063/1.5090935
- 156. Direct observation of charge transfer at the interface between PEDOT:PSS and perovskite layers**  
Takeshi Gotanda, Haru Kimata, Dong Xue, Haruka Asai, Ai Shimazaki, [Atsushi Wakamiya](#), Kazuhiro Marumoto  
*Appl. Phys. Express* **2019**, *12*, 041002. DOI:10.7567/1882-0786/ab051f

- 155. Molecular Orientation Change in Naphthalene Diimide Thin Films Induced by Removal of Thermally Cleavable Substituents**  
Tomoya Nakamura, Nobutaka Shioya, Takafumi Shimoaka, Ryosuke Nishikubo, Takeshi Hasegawa, Akinori Saeki, Yasujiro Murata, Richard Murdey, [Atsushi Wakamiya](#)  
*Chem. Mater.* **2019**, *31*, 1729–1737. DOI:10.1021/acs.chemmater.8b05237
- 154. Donor–Acceptor Polymers Containing Thiazole–Fused Benzothiadiazole Acceptor Units for Organic Solar Cells**  
Tomoya Nakamura, Yasuhisa Ishikura, Noriko Arakawa, Megumi Hori, Motoi Satou, Masaru Endo, Hisashi Masui, Shinichiro Fuse, Takashi Takahashi, Yasujiro Murata, Richard Murdey, [Atsushi Wakamiya](#)  
*RSC Adv.* **2019**, *9*, 7107–7114. DOI:10.1039/c9ra00229d
- 153. Influence of Alkoxy Chain Length on the Properties of Two–Dimensionally Expanded Azulene Core–Based Hole–Transporting Materials for Efficient Perovskite Solar Cells**  
Minh Anh Truong, Jaehyun Lee, Tomoya Nakamura, Ji–Youn Seo, Mina Jung, Masashi Ozaki, Ai Shimazaki, Nobutaka Shioya, Takeshi Hasegawa, Yasujiro Murata, Shaik Mohammed Zakeeruddin, Michael Gratzel, Richard Murdey, [Atsushi Wakamiya](#)  
*Chem. Eur. J.* **2019**, *25*, 6741–6752. DOI:10.1002/chem.201806317 Inside Cover
- 152. Structure–Property Relations in Ag–Bi–I Compounds: Potential Pb–free Absorbers in Solar Cells**  
Anucha Koedtrud, Masato Goto, Midori Amano Patino, Zhenhong Tan, Haichuan Guo, Tomoya Nakamura, Taketo Handa, Wei–tin Chen, Yu–Chun Chuang, Hwo–Shuenn Sheu, Takashi Saito, Daisuke Kan, Yoshihiko Kanemitsu, [Atsushi Wakamiya](#), Yuichi Shimakawa  
*J. Mater. Chem. A.* **2019**, *7*, 5583–5588. DOI:10.1039/C8TA11227D
- 151. Enhanced performance of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub>–based perovskite solar cells by tuning the electrical and structural properties of mesoporous TiO<sub>2</sub> layer via Al and Mg doping**  
Alwani Imanah Rafieh, Piyasiri Ekanayake, [Atsushi Wakamiya](#), Hideki Nakajima, Chee Ming Lim  
*Solar Energy* **2019**, *177*, 374–381. DOI:10.1016/j.solener.2018.11.024
- 150. Doping Polycyclic Arenes with Nitrogen–Boron–Nitrogen (NBN) Units**  
Deng–Tao Yang, Tomoya Nakamura, Zhechang He, Xiang Wang, [Atsushi Wakamiya](#), Tai Peng, Suning Wang  
*Org. Lett.* **2018**, *20*, 6741–6745. DOI:10.1021/acs.orglett.8b02850
- 149. Calixazulenes: azulene–based calixarene analogues – an overview and recent supramolecular complexation studies**  
Paris E. Georghiou, Shofiur Rahman, Abdullah Alodhayb, Hidetaka Nishimura, Jaehyun Lee, [Atsushi Wakamiya](#), Lawrence T. Scott,  
*Beilstein J. Org. Chem.* **2018**, *14*, 2488–2494. DOI:10.3762/bjoc.14.225
- 148. NIR–Absorbing Dye Based on BF<sub>2</sub>–Bridged Azafulvene Dimer as a Strong Electron–Accepting Unit**  
Hiroyuki Shimogawa, Yasujiro Murata, [Atsushi Wakamiya](#),  
*Org. Lett.* **2018**, *20*, 5135–5138. DOI:10.1021/acs.orglett.8b02056

147. **Identifying an Optimum Perovskite Solar Cell Structure by Kinetic Analysis: Planar, Mesoporous Based, or Extremely Thin Absorber Structure**  
Maning Liu, Masaru Endo, Ai Shimazaki, [Atsushi Wakamiya](#), Yasuhiro Tachibana  
*ACS Appl. Energy Mater.* **2018**, *1*, 3722–3732. DOI:10.1021/acsaem.8b00515
146. **Lead-Free Solar Cells based on Tin Halide Perovskite Films with High Coverage and Improved Aggregation**  
Jiewei Liu, Masashi Ozaki, Shinya Yakumaru, Taketo Handa, Ryosuke Nishikubo, Yoshihiko Kanemitsu, Akinori Saeki, Yasujiro Murata, Richard Murdey, [Atsushi Wakamiya](#)  
*Angew. Chem., Int. Ed.* **2018**, *57*, 13221–13225. DOI:10.1002/anie.201808385
145. **High Bending Durability of Efficient Flexible Perovskite Solar Cells Using Metal Oxide Electron Transport Layer**  
Fengjiu Yang, Jiewei Liu, Hong Lim, Yasuhisa Ishikura, Keisuke Shinokita, Yuhei Miyauchi, [Atsushi Wakamiya](#), Yasujiro Murata, Kazunari Matsuda  
*J. Phys. Chem. C* **2018**, *122*, 17088–17095. DOI:10.1021/acs.jpcc.8b05008
144. **Radiative recombination and electron-phonon coupling in lead-free CH<sub>3</sub>NH<sub>3</sub>SnI<sub>3</sub> perovskite thin films**  
Taketo Handa, Tomoko Aharen, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*Phys. Rev. Mater.* **2018**, *2*, 075402. DOI:10.1103/PhysRevMaterials.2.075402
143. **Excitation Wavelength Dependent Interfacial Charge Transfer Dynamics in a CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Film**  
Maning Liu, Masaru Endo, Ai Shimazaki, [Atsushi Wakamiya](#), Yasuhiro Tachibana  
*J. Photopolym. Sci. Technol.* **2018**, *31*, 633–642. DOI:10.2494/photopolymer.31.633
142. **Efficient Synthesis and Properties of [1]Benzothieno[3,2-b]thieno[2,3-d]furans and [1]Benzothieno[3,2-b]thieno[2,3-d]thiophenes**  
Yuji Kurimoto, Koichi Mitsudo, Hiroki Mandai, [Atsushi Wakamiya](#), Yasujiro Murata, Hiroki Mori, Yasushi Nishihara, Seiji Suga,  
*Asian J. Org. Chem.* **2018**, *7*, 1635–1641. DOI:10.1002/ajoc.201800270
141. **Highly efficient pyrene blue emitters for OLEDs based on substitution position effect**  
Mina Jung, Jaehyun Lee, Hyocheol Jung, Seokwoo Kang, [Atsushi Wakamiya](#), Jongwook Park  
*Dyes and Pigments* **2018**, *158*, 42–49. DOI:10.1016/j.dyepig.2018.05.024
140. **Photorefractive Effect in Organic-Inorganic Hybrid Perovskites and Its Application to Optical Phase Shifter**  
Hirokazu Tahara, Tomoko Aharen, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*Adv. Opt. Mater.* **2018**, *6*, 1701366. DOI:10.1002/adom.201701366
139. **Roles of Polymer Layer in Enhanced Photovoltaic Performance of Perovskite Solar Cells via Interface Engineering**  
Fengjiu Yang, Hong En Lim, Feijiu Wang, Masashi Ozaki, Ai Shimazaki, Jiewei Liu, Nur Baizura Mohamed, Keisuke Shinokita, Yuhei Miyauchi, [Atsushi Wakamiya](#), Yasujiro Murata, Kazunari Matsuda  
*Adv. Mater. Interfaces* **2018**, *5*, 1701256. DOI:10.1002/admi.201701256

138. **Mechanochemically-generated solid state complex of C<sub>60</sub>-fullerene with tetra-(5,7-diphenyl)calix[4]azulene, NMR, XRD and DFT studies**  
Celine Schneider, Hidetaka Nishimura, Jaehyun Lee, Lawrence T. Scott, [Atsushi Wakamiya](#), Roy Forbes, Paris E. Georghiou  
*Supramol Chem.* **2018**, *30*, 575–582. DOI:10.1080/10610278.2017.1415435
137. **Hole-Transporting Materials Based on Thiophene-Fused Arenes from Sulfur-Mediated Thienannulations**  
Hsing-An Lin, Nobuhiko Mitoma, Linghui Meng, Yasutomo Segawa, [Atsushi Wakamiya](#), Kenichiro Itami  
*Mater. Chem. Front.* **2018**, *2*, 275–280. DOI:10.1039/C7QM00473G
136. **New blue emitting materials based on triple-core chromophores for organic light-emitting diodes**  
Jaehyun Lee, Jaemin Ryu, [Atsushi Wakamiya](#), Jongwook Park  
*Mol. Cryst. Liq. Cryst.* **2017**, *654*, 40–46. DOI:10.1080/15421406.2017.1355201
135. **Palladium-Catalyzed Cyclization: Regioselectivity and Structure of Arene-Fused C<sub>60</sub> Derivatives**  
Yoshifumi Hashikawa, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*J. Am. Chem. Soc.* **2017**, *139*, 16350–16358. DOI:10.1021/jacs.7b09459
134. **Solvent-Coordinated Tin Halide Complexes as Purified Precursors for Tin-Based Perovskites**  
Masashi Ozaki, Yukie Katsuki, Jiwei Liu, Taketo Handa, Ryosuke Nishikubo, Shinya Yakumaru, Yoshifumi Hashikawa, Yasujiro Murata, Takashi Saito, Yuichi Shimakawa, Yoshihiko Kanemitsu, Akinori Saeki, [Atsushi Wakamiya](#)  
*ACS Omega* **2017**, *2*, 7016–7021. DOI:10.1021/acsomega.7b01292
133. **Antiaromatic Dithieno-1,2-dihydro-1,2-diborin Splits Diatomic Hydrogen**  
Takafumi Araki, Masato Hirai, [Atsushi Wakamiya](#), Warren E. Piers, Shigehiro Yamaguchi  
*Chem. Lett.* **2017**, *46*, 1714–1717. DOI:10.1246/cl.170812 Editor's Choice
132. **Minute-Scale Degradation and Shift of Valence-Band Maxima of (CH<sub>3</sub>NH<sub>3</sub>)SnI<sub>3</sub> and HC(NH<sub>2</sub>)<sub>2</sub>SnI<sub>3</sub> Perovskites upon Air Exposure**  
Ryosuke Nishikubo, Naoki Ishida, Yukie Katsuki, [Atsushi Wakamiya](#), Akinori Saeki  
*J. Phys. Chem. C* **2017**, *121*, 19650–19656. DOI:10.1021/acs.jpcc.7b06294
131. **Light Intensity Dependence of Performance of Lead Halide Perovskite Solar Cells**  
Maning Liu, Masaru Endo, Ai Shimazaki, [Atsushi Wakamiya](#), Yasuhiro Tachibana  
*J. Photopolym. Sci. Technol.* **2017**, *30*, 577–582. DOI:10.2494/photopolymer.30.577
130. **Synthesis of Azole-fused Benzothiadiazoles as Key Units for Functional  $\pi$ -Conjugated Compounds**  
Tomoya Nakamura, Shuhei Okazaki, Noriko Arakawa, Motoi Satou, Masaru Endo, Yasujiro Murata, [Atsushi Wakamiya](#)  
*J. Photopolym. Sci. Technol.* **2017**, *30*, 561–568. DOI:10.2494/photopolymer.30.561
129. **Origin of Open-Circuit Voltage Loss in Polymer Solar Cells and Perovskite Solar Cells**  
Hyung Do Kim, Nayu Yanagawa, Ai Shimazaki, Masaru Endo, [Atsushi Wakamiya](#), Hideo Ohkita, Hiroaki Bente, Shinzaburo Ito  
*ACS Appl. Mater. Interfaces* **2017**, *9*, 19988–19997. DOI:10.1021/acsami.7b03694



128. **Rh-Catalyzed Dehydrogenative Cyclization Leading to Benzosilolothiophene Derivatives via Si-H/C-H Bond Cleavage**  
Koichi Mitsudo, Seiichi Tanaka, Ryota Isobuchi, Tomohiro Inada, Hiroki Mandai, Toshinobu Korenaga, [Atsushi Wakamiya](#), Yasujiro Murata, OrcidSeiji Suga  
*Org. Lett.* **2017**, *19*, 2564–2567. DOI:10.1021/acs.orglett.7b00878
127. **Oxygen-bridged Diphenylnaphthylamine as a Scaffold for Full-color Circularly Polarized Luminescent Materials**  
Hidetaka Nishimura, Kazuo Tanaka, Yasuhiro Morisaki, Yoshiki Chujo, [Atsushi Wakamiya](#), Yasujiro Murata  
*J. Org. Chem.* **2017**, *82*, 5242–5249. DOI:10.1021/acs.joc.7b00511
126. **Synthesis, Properties, and Crystal Structures of pi-Extended Double [6]helicenes: Contorted Multi-Dimensional Stacking Lattice**  
Takao Fujikawa, Nobuhiko Mitoma, [Atsushi Wakamiya](#), Akinori Saeki, Yasutomo Segawa, Kenichiro Itami  
*Org. Biomol. Chem.* **2017**, *15*, 4697–4703. DOI:10.1039/C7OB00987A
125. **Fullerene C<sub>70</sub> as a Nanoflask that Reveals the Chemical Reactivity of Atomic Nitrogen**  
Yuta Morinaka, Rui Zhang, Satoru Sato, Hidefumi Nikawa, Tatsuhisa Kato, Ko Furukawa, Michio Yamada, Yutaka Maeda, Michihisa Murata, [Atsushi Wakamiya](#), Shigeru Nagase, Takeshi Akasaka, Yasujiro Murata  
*Angew. Chem., Int. Ed.* **2017**, *56*, 6488–6491. DOI:10.1002/anie.201701158
124. **Isolation of the Simplest Hydrated Acid**  
Rui Zhang, Michihisa Murata, [Atsushi Wakamiya](#), Takafumi Shimoaka, Takeshi Hasegawa, Yasujiro Murata  
*Sci. Adv.* **2017**, *3*, e1602833. DOI:10.1126/sciadv.1602833
123. **Orientation of a Water Molecule: Effects on Electronic Nature of the C<sub>59</sub>N Cage**  
Yoshifumi Hashikawa, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*J. Org. Chem.* **2017**, *82*, 4465–4469. DOI:10.1021/acs.joc.7b00453
122. **Unsymmetric Twofold Scholl Cyclization of a 5,11-Dinaphthyltetracene: Selective Formation of Pentagonal and Hexagonal Rings via Dicationic Intermediates**  
Chaolumen, ichihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Angew. Chem., Int. Ed.* **2017**, *56*, 5082–5086. DOI:10.1002/anie.201701054
121. **Development of Transparent Organic Hole-transporting Materials Using Partially Oxygen-bridged Triphenylamine Skeletons**  
Hidetaka Nishimura, Yuta Hasegawa, [Atsushi Wakamiya](#), Yasujiro Murata  
*Chem. Lett.* **2017**, *46*, 817–820. DOI:10.1246/cl.170164 Editor's Choice
120. **Synthesis and Structure of an Open-cage C<sub>69</sub>O Derivative**  
Rui Zhang, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Chem. Lett.* **2017**, *46*, 543–546. DOI:10.1246/cl.161178

119. **A Stable, Soluble, and Crystalline Supramolecular System with a Triplet Ground State**  
Tsukasa Futagoishi, Tomoko Aharen, Tatsuhisa Kato, Azusa Kato, Toshiyuki Ihara, Tomofumi Tada, Michihisa Murata, [Atsushi Wakamiya](#), Hiroshi Kageyama, Yoshihiko Kanemitsu, Yasujiro Murata  
*Angew. Chem., Int. Ed.* **2017**, *56*, 4261–4265. DOI:10.1002/anie.201701212
118. **Structural Modification of Open-Cage Fullerene C<sub>60</sub> Derivatives Having a Small Molecule inside Their Cavities.**  
Yoshifumi Hashikawa, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Can. J. Chem.* **2017**, *95*, 320–328. DOI:10.1139/cjc-2016-0465
117. **D- $\pi$ -A Dyes with Diketopyrrolopyrrole and Boryl-substituted Thienylthiazole Units for Dye-sensitized Solar Cells with High  $J_{sc}$  Values**  
Hiroyuki Shimogawa, Masaru Endo, Yumi Nakaike, Yasujiro Murata, [Atsushi Wakamiya](#)  
*Chem. Lett.* **2017**, *46*, 715–718. DOI:10.1246/cl.170087
116. **Synthesis of 8-Aryl-O-methylcyanidins and Their Usage for Dye-Sensitized Solar Cell Devices**  
Yuki Kimura, Kin-ichi Oyama, Yasujiro Murata, [Atsushi Wakamiya](#), Kumi Yoshida  
*Int J Mol Med Sci* **2017**, *18*, 427. DOI:10.3390/ijms18020427
115. **Characterization of Dye-sensitized Solar Cells Using Five Pure Anthocyanidin 3-O-glucosides Possessing Different Chromophores,**  
Yuki Kimura, Takeshi Maeda, Satoru Iuchi, Nobuaki Koga, Yasujiro Murata, [Atsushi Wakamiya](#), Kumi Yoshida  
*J. Photochem. Photobiol., A* **2017**, *335*, 230–238. DOI:10.1016/j.jphotochem.2016.12.005
114. **Charge Injection Mechanism at Heterointerfaces in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Solar Cells Revealed by Simultaneous Time-Resolved Photoluminescence and Photocurrent Measurements**  
Taketo Handa, David M. Tex, Ai Shimazaki, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*J. Phys. Chem. Lett.* **2017**, *8*, 954–960. DOI:10.1021/acs.jpcllett.6b02847
113. **Cycloaddition of Benzyne to Naphthalene-Fused Tetracene with a Twisted  $\pi$ -Surface**  
Chaolumen, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Chem. Lett.* **2017**, *46*, 591–593. DOI:10.1246/cl.161170
112. **Encapsulation and Dynamic Behavior of Methanol and Formaldehyde inside Open-Cage C<sub>60</sub> Derivatives**  
Tsukasa Futagoishi, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Angew. Chem., Int. Ed.* **2017**, *56*, 2758–2762. DOI:10.1002/anie.201611903
111. **Dithieno-Fused Polycyclic Aromatic Hydrocarbon with a Pyracylene Moiety: Strong Antiaromatic Contribution to the Electronic Structure**  
Chaolumen, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Org. Lett.* **2017**, *19*, 826–829. DOI:10.1021/acs.orglett.6b03819

110. **D- $\pi$ -A Dyes with an Intramolecular B-N Coordination Bond as a Key Scaffold for Electronic Structural Tuning and Their Application in Dye-Sensitized Solar Cells,**  
Hiroyuki Shimogawa, Masaru Endo, Takuhiro Taniguchi, Yumi Nakaike, Masahide Kawaraya, Hiroshi Segawa, Yasujiro Murata, [Atsushi Wakamiya](#)  
*Bull. Chem. Soc. Jpn.* **2017**, *90*, 441–450. DOI:10.1246/bcsj.20160421 Selected Paper
109. **Unprecedented Photochemical Rearrangement of An Open-cage C<sub>60</sub> Derivative**  
Tsukasa Futagoishi, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Chem. Commun.* **2017**, *53*, 1712–1714. DOI:10.1039/C6CC10103H
108. **Highly Efficient and Stable Perovskite Solar Cells by Interfacial Engineering Using Solution-Processed Polymer Layer,**  
Feijiu Wang, Ai Shimazaki, Fengjiu Yang, Kaito Kanahashi, Keiichiro Matsuki, Yuhei Miyauchi, Taishi Takenobu, [Atsushi Wakamiya](#), Yasujiro Murata, Kazunari Matsuda  
*J. Phys. Chem. C.* **2017**, *121*, 1562–1568. DOI:10.1021/acs.jpcc.6b12137
107. **4,7-Bis[3-(dimesitylboryl)thien-2-yl]benzothiadiazole: Solvato-, Thermo-, and Mechanochromism Based on the Reversible Formation of an Intramolecular B-N Bond,**  
Hiroyuki Shimogawa, Osamu Yoshikawa, Yoshitaka Aramaki, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Chem. Eur. J.* **2017**, *23*, 3784–3791. DOI:10.1002/chem.201606041
106. **Photon Emission and Reabsorption Processes in CH<sub>3</sub>NH<sub>3</sub>PbBr<sub>3</sub> Single Crystals Revealed by Time-Resolved Two-Photon-Excitation Photoluminescence Microscopy**  
Takumi Yamada, Yasuhiro Yamada, Yumi Nakaike, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*Phys. Rev. Applied* **2017**, *7*, 014001. DOI:10.1103/PhysRevApplied.7.014001 Top 1% Highly Cited Papers
105. **Co(I)-Mediated Removal of Addends on the C<sub>60</sub> Cage and Formation of Monovalent Cobalt Complex CpCo(CO)( $\eta$ -2-C<sub>60</sub>)**  
Yoshifumi Hashikawa, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Org. Lett.* **2016**, *18*, 6348–6351. DOI:10.1021/acs.orglett.6b03238
104. **Free Excitons and Exciton-Phonon Coupling in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Single Crystals Revealed by Photocurrent and Photoluminescence Measurements at Low Temperatures,**  
Le Quang Phuong, Yumi Nakaike, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*J. Phys. Chem. Lett.* **2016**, *7*, 4905–4910. DOI:10.1021/acs.jpcllett.6b02432
103. **Water Entrapped inside Fullerene Cages: A Potential Probe for Evaluation of Bond Polarization,**  
Yoshifumi Hashikawa, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Angew. Chem., Int. Ed.* **2016**, *55*, 13109–13113. DOI:10.1002/anie.201607040
102. **Quantifying Hole Transfer Yield from Perovskite to Polymer Layer: Statistical Correlation of Solar Cell Outputs with Kinetic and Energetic Properties,**  
Naoki Ishida, [Atsushi Wakamiya](#), Akinori Saeki  
*ACS Photonics* **2016**, *3*, 1678–1688. DOI:10.1021/acsp Photonics.6b00331

101. **Charge Injection at the Heterointerface in Perovskite CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Solar Cells Studied by Simultaneous Microscopic Photoluminescence and Photocurrent Imaging Spectroscopy,**  
Daiki Yamashita, Taketo Handa, Toshiyuki Ihara, Hirokazu Tahara, Ai Shimazaki, [Atsushi Wakamiya](#),  
Yoshihiko Kanemitsu  
*J. Phys. Chem. Lett.* **2016**, *7*, 3186–3191. DOI:10.1021/acs.jpcclett.6b01231
100. **Free Carriers versus Excitons in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Thin Films at Low Temperatures: Charge Transfer from the Orthorhombic Phase to the Tetragonal Phase,**  
Le Quang Phuong, Yasuhiro Yamada, Masaya Nagai, Naoki Maruyama, [Atsushi Wakamiya](#), oshihiko  
Kanemitsu  
*J. Phys. Chem. Lett.* **2016**, *7*, 2316–2321. DOI:10.1021/acs.jpcclett.6b00781
99. **Efficient Synthesis of One- and Two-Dimensional Multimetallic Gold-Bis(dithiolene) Complexes.**  
Michihisa Murata, Shoji Kaji, Hidetaka Nishimura, [Atsushi Wakamiya](#), Yasujiro Murata  
*Eur. J. Inorg. Chem.* **2016**, –, 3228–3232. DOI:10.1002/ejic.201600595
98. **Near-Infrared Emissive Donor-Acceptor-Type Molecules Containing Thiazole-Fused Benzothiadiazole as an Electron-Acceptor Moiety.**  
Motoi Satou, Tomoya Nakamura, Yoshitaka Aramaki, Shuhei Okazaki, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Chem. Lett.* **2016**, *45*, 892–894. DOI:10.1246/cl.160519 Editors' Choice, Cover Picture
97. **Interfacial Charge-Carrier Trapping in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub>-Based Heterolayered Structures Revealed by Time-Resolved Photoluminescence Spectroscopy**  
Yasuhiro Yamada, Takumi Yamada, Ai Shimazaki, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*J. Phys. Chem. Lett.* **2016**, *7*, 1972–1977. DOI:10.1021/acs.jpcclett.6b00653
96. **Highly Stable Perovskite Solar Cells with An All-carbon Hole Transport Layer,**  
Feijiu Wang, Masaru Endo, Shinichiro Mouri, Yuhei Miyauchi, Yutaka Ohno, [Atsushi Wakamiya](#),  
Yasujiro Murata, Kazunari Matsuda  
*Nanoscale* **2016**, *8*, 11882–11888. DOI:10.1039/C6NR01152G
95. **Optical characterization of voltage-accelerated degradation in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> perovskite solar cells,**  
Taketo Handa, David M. Tex, Ai Shimazaki, Tomoko Aharen, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*Opt. Express* **2016**, *24*, 259393. DOI:10.1364/OE.24.00A917
94. **Synthesis and Properties of Endohedral Aza[60]fullerenes: H<sub>2</sub>O@C<sub>59</sub>N and H<sub>2</sub>@C<sub>59</sub>N as Their Dimers and Monomers.**  
Yoshifumi Hashikawa, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*J. Am. Chem. Soc.* **2016**, *138*, 4096–4104. DOI:10.1021/jacs.5b12795
93. **Experimental Evidence of Localized Shallow States in Orthorhombic Phase of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Thin Films Revealed by Photocurrent Beat Spectroscopy.**  
Hirokazu Tahara, Masaru Endo, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*J. Phys. Chem. C* **2016**, *120*, 5347–5352. DOI:10.1021/acs.jpcc.6b01283

- 92. The Influence of Quasiplanar Structures of Partially Oxygen-Bridged Triphenylamine Dimers on the Properties of their Bulk Films.**  
Hidetaka Nishimura, Tatsuya Fukushima, [Atsushi Wakamiya](#), Yasujiro Murata, Hironori Kaji  
*Bull. Chem. Soc. Jpn.* **2016**, *89*, 726–732. DOI:10.1246/bcsj.20160031 Selected Paper, Inside Cover
- 91. Synthesis of a Distinct Water Dimer Inside Fullerene C70**  
Rui Zhang, Michihisa Murata, Tomoko Aharen, [Atsushi Wakamiya](#), Takafumi Shimoaka, Takeshi Hasegawa, Yasujiro Murata  
*Nat. Chem.* **2016**, *8*, 435–441. DOI:10.1038/nchem.2464 Top 1% Highly Cited Papers
- 90. Excimer Emission Based on The Control of Molecular Structure and Intermolecular Interactions**  
Jaehyun Lee, Hyocheol Jung, Hwangyu Shin, Joonghan Kim, Daisuke Yokoyama, Hidetaka Nishimura, [Atsushi Wakamiya](#), Jongwook Park  
*J. Mater. Chem. C.* **2016**, *4*, 2784–2792. DOI:10.1039/C5TC03289J
- 89. Fast Free-Carrier Diffusion in CH<sub>3</sub>NH<sub>3</sub>PbBr<sub>3</sub> Single Crystals Revealed by Time-Resolved One- and Two-Photon Excitation Photoluminescence Spectroscopy.**  
Takumi Yamada, Yasuhiro Yamada, Hidetaka Nishimura, Yumi Nakaike, [Atsushi Wakamiya](#), Yasujiro Murata, Yoshihiko Kanemitsu  
*Adv. Electron. Mater.* **2016**, *2*, 1500290. DOI:10.1002/aelm.201500290
- 88. Facile Synthesis of 1,4-Bis(diaryl)-1,3-butadiynes Bearing Two Amino Moieties by Electrochemical Reaction-Site Switching, and Their Solvatochromic Fluorescence**  
Natsuyo Kamimoto, Nariaki Nakamura, Akina Tsutsumi, Hiroki Mandai, Koichi Mitsudo, [Atsushi Wakamiya](#), Yasujiro Murata, Jun-ya Hasegawa, Seiji Suga  
*Asian J. Org. Chem.* **2016**, *5*, 373–379. DOI:10.1002/ajoc.201500502
- 87. Hole-Transporting Materials with a Two-Dimensionally Expanded  $\pi$ -System around an Azulene Core for Efficient Perovskite Solar Cells.**  
Hidetaka Nishimura, Naoki Ishida, Ai Shimazaki, [Atsushi Wakamiya](#), Akinori Saeki, Lawrence T. Scott, Yasujiro Murata  
*J. Am. Chem. Soc.* **2015**, *137*, 15656–15659. DOI:10.1021/jacs.5b11008 Top 1% Highly Cited Papers, Highlighted in 京都新聞, 京大ホームページ, Mynabi News, アルファステーション(ラジオ)
- 86. Triarylboron-based Fluorescent Organic Light-emitting Diodes with External Quantum Efficiencies Exceeding 20%**  
Katsuaki Suzuki, Shosei Kubo, Katsuyuki Shizu, Tatsuya Fukushima, [Atsushi Wakamiya](#), Yasujiro Murata, Chihaya Adachi, Hironori Kaji  
*Angew. Chem., Int. Ed.* **2015**, *54*, 15231–15235. DOI:10.1002/anie.201508270 German Edition:DOI:10.1002/ange.201508270 (Vol.127, Issue50, Pages 15446–15450)
- 85. Photo-excitation Intensity Dependent Electron and Hole Injections from Lead Iodide Perovskite to Nanocrystalline TiO<sub>2</sub> and Spiro-OMeTAD**  
Satoshi Makuta, Maning Liu, Masaru Endo, Hidetaka Nishimura, [Atsushi Wakamiya](#), Yasuhiro Tachibana  
*Chem. Commun.* **2016**, *52*, 673–676. DOI:10.1039/C5CC06518F

- 84. In Situ Solid-State Generation of (BN)<sub>2</sub>-Pyrenes and Electroluminescent Devices**  
Suning Wang, Deng-Tao Yang, Jiasheng Lu, Hiroyuki Shimogawa, Shaolong Gong, Xiang Wang, Soren K. Møllerup, [Atsushi Wakamiya](#), Yi-Lu Chang, Chuluo Yang, Zheng-Hong Lu  
*Angew. Chem., Int. Ed.* **2015**, *54*, 15074–15078. DOI:10.1002/anie.201507770
- 83. Purely organic electroluminescent material realizing 100% conversion from electricity to light**  
Hironori Kaji, Hajime Suzuki, Tatsuya Fukushima, Katsuyuki Shizu, Katsuaki Suzuki, Shosei Kubo, Takeshi Komino, Hajime Oiwa, Furitsu Suzuki, [Atsushi Wakamiya](#), Yasujiro Murata, Chihaya Adachi  
*Nat. Commun.* **2015**, *6*, 8476. DOI:10.1038/ncomms9476 Top 1% Highly Cited Papers
- 82. Trapping N<sub>2</sub> and CO<sub>2</sub> on the Sub-Nano Scale in the Confined Internal Spaces of Open-Cage C<sub>60</sub> Derivatives: Isolation and Structural Characterization of the Host-Guest Complexes**  
Tsukasa Futagoishi, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Angew. Chem., Int. Ed.* **2015**, *54*, 14791–14794. DOI:10.1002/anie.201507785
- 81. Degradation Mechanism of Perovskite CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Diode Devices Studied by Electroluminescence and Photoluminescence Imaging Spectroscopy**  
Makoto Okano, Masaru Endo, [Atsushi Wakamiya](#), Masahiro Yoshita, Hidefumi Akiyama, Yoshihiko Kanemitsu  
*Appl. Phys. Express* **2015**, *8*, 102302. DOI:10.7567/APEX.8.102302
- 80. Dynamic Optical Properties of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Single Crystals As Revealed by One- and Two-photon Excited Photoluminescence Measurements**  
Yasuhiro Yamada, Takumi Yamada, Le Quang Phuong, Naoki Maruyama, Hidetaka Nishimura, [Atsushi Wakamiya](#), Yasujiro Murata, Yoshihiko Kanemitsu  
*J. Am. Chem. Soc.* **2015**, *137*, 10456–10459. DOI:10.1021/jacs.5b04503 Top 1% Highly Cited Papers
- 79. Electron Deficient Tetrabenzo-Fused Pyracylene and Conversions into Curved and Planar  $\pi$ -Systems with Distinct Emission Behaviors**  
Chaolumen, Michihisa Murata, Yasunori Sugano, [Atsushi Wakamiya](#), Yasujiro Murata  
*Angew. Chem., Int. Ed.* **2015**, *54*, 9308–9312. DOI:10.1002/anie.201503783
- 78. Designs of Functional  $\pi$ -Electron Materials based on the Characteristic Features of Boron**  
[Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Bull. Chem. Soc. Jpn.* **2015**, *88*, 1357–1377. DOI:10.1246/bcsj.20150151
- 77. 1,3,5,7-Tetra(Bpin)azulene by Exhaustive Direct Borylation of Azulene and 5,7-Di(Bpin)azulene by Selective Subsequent Deborylation**  
Hidetaka Nishimura, Maria N. Eliseeva, [Atsushi Wakamiya](#), Lawrence T. Scott  
*Synlett* **2015**, *26*, 1578–1580. DOI:10.1055/s-0034-1380686
- 76. Spontaneous Defect Annihilation in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Thin Films at Room Temperature Revealed by Time-resolved Photoluminescence Spectroscopy**  
Yasuhiro Yamada, Masaru Endo, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*J. Phys. Chem. Lett.* **2015**, *6*, 482–486. DOI:10.1021/jz5026596

75. **Photoelectronic Responses in Solution-Processed Perovskite CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Solar Cells Studied by Photoluminescence and Photoabsorption Spectroscopy**  
Yasuhiro Yamada, Toru Nakamura, Masaru Endo, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*IEEE J. Photovolt.* **2014**, *5*, 401–405. DOI:10.1109/JPHOTOV.2014.2364115 Top 1% Highly Cited Papers
74. **Excimer Formation in Organic Emitter Films Associated with a Molecular Orientation Promoted by Steric Hindrance**  
Jaehyun Lee, Beomjin Kim, Ji Eon Kwon, Joonghan Kim, Daisuke Yokoyama, Katsuaki Suzuki, Hidetaka Nishimura, [Atsushi Wakamiya](#), Soo Young Park and Jongwook Park  
*Chem. Commun.* **2014**, *50*, 14145–14148. DOI:10.1039/C4CC05348F
73. **Dibenzo[a,f]perylene Bisimide: Effects of Introducing Two Fused Rings**  
Chaolun, Hiroki Enno, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Asian J. Chem.* **2014**, *9*, 3136–3140. DOI:10.1002/asia.201402688
72. **Thiazole-Fused Benzothiaziazole as a Key Skeleton for T-Shaped Electron Accepting Building Blocks**  
Motoi Satou, Kensuke Uchinaga, [Atsushi Wakamiya](#), Yasujiro Murata  
*Chem. Lett.* **2014**, *43*, 1386–1388. DOI:10.1246/cl.140487 Highlighted in 日刊工業新聞
71. **Elucidation of the Structure-Property Relationship of p-Type Organic Semiconductors through Rapid Library Construction via a One-pot, Suzuki-Miyaura Coupling Reaction**  
Shinichiro Fuse, Keisuke Matsumura, [Atsushi Wakamiya](#), Hisashi Masui, Hiroshi Tanaka, Susumu Yoshikawa, Takashi Takahashi  
*ACS Comb. Sci.* **2014**, *16*, 494–499. DOI:10.1021/co500071x
70. **Photocarrier Recombination Dynamics in Perovskite CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> for Solar Cell Applications**,  
Yasuhiro Yamada, Toru Nakamura, Masaru Endo, [Atsushi Wakamiya](#), Yoshihiko Kanemitsu  
*J. Am. Chem. Soc.* **2014**, *136*, 11610–11613. DOI:10.1021/ja506624n Top 1% Highly Cited Papers, Highlighted in JACS Spotlight, Mynabi News, 日刊工業新聞, 京大ホームページ
69. **Inhomogeneous Deactivation with UV Excitation in Submicron Grains of Lead Iodide Perovskite-based Solar Cell as Revealed by Femtosecond Transient Absorption Microscopy**  
Tetsuro Katayama, Akira Jinno, Eisuke Takeuchi, Syoji Ito, Masaru Endo, [Atsushi Wakamiya](#), Yasujiro Murata, Yuhei Ogomi, Shuji Hayase, Hiroshi Miyasaka  
*Chem. Lett.* **2014**, *43*, 1656–1658. DOI:10.1246/cl.140551
68. **Synthesis and Structure of an Open-cage Thiafullerene C<sub>69</sub>S: Reactivity Differences of an Open-cage C<sub>70</sub> Tetraketone Relative to Its C<sub>60</sub> Analogue**  
Rui Zhang, Tsukasa Futagoishi, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*J. Am. Chem. Soc.* **2014**, *136*, 8193–8196. DOI:10.1021/ja504054s
67. **Synthesis of Open-Cage Ketolactam Derivatives of Fullerene C<sub>60</sub> Encapsulating a Hydrogen Molecule**  
Yoshifumi Hashikawa, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Org. Lett.* **2014**, *16*, 2970–2973. DOI:10.1021/ol501113y

- 66. A Crystalline Porous Coordination Polymer Decorated with Nitroxyl Radicals Catalyzes Aerobic Oxidation of Alcohols**  
Liangchun Li, Ryotaro Matsuda, Iku Tanaka, Hiroshi Sato, Prakash Kanoo, Hyung Joon Jeon, Maw Lin Foo, Atsushi Wakamiya, Yasujiro Murata, Susumu Kitagawa  
*J. Am. Chem. Soc.* **2014**, *136*, 7543–7546. DOI:10.1021/ja5019095
- 65. On–Top  $\pi$ -Stacking of Quasiplanar Molecules in Hole–Transporting Materials: Inducing Anisotropic Carrier Mobility in Amorphous Films**  
Atsushi Wakamiya, Hidetaka Nishimura, Tatsuya Fukushima, Furitsu Suzuki, Akinori Saeki, Shu Seki, Itaru Osaka, Takahiro Sasamori, Michihisa Murata, Yasujiro Murata, Hironori Kaji  
*Angew. Chem., Int. Ed.* **2014**, *53*, 5800–5804. DOI:10.1002/anie.201400068 Highlighted in Mynabi News, 日刊工業新聞, ワイリーサイエンスカフェ, 京大ホームページ, 月刊化学 2014年7月号フラッシュニュース
- 64. A Designed Fluorescent Anthracene Derivative: Theory, Calculation, Synthesis, and Characteriation**  
Motoyuki Uejima, Tohru Sato, Masahiro Detani, Atsushi Wakamiya, Furitsu Suzuki, Hajime Suzuki, Tatsuya Fukushima, Kazuyoshi Tanaka, Yasujiro Murata, Chihaya Adachi, Hironori Kaji  
*Chem. Phys. Lett.* **2014**, *602*, 80–83. DOI:10.1016/j.cplett.2014.04.017
- 63. Reproducible Fabrication of Efficient Perovskite–based Solar Cells: X–ray Crystallographic Studies on the Formation of  $\text{CH}_3\text{NH}_3\text{PbI}_3$  Layers**  
Atsushi Wakamiya, Masaru Endo, Takahiro Sasamori, Norihiro Tokitoh, Yuhei Ogomi, Shuzi Hayase, Yasujiro Murata  
*Chem. Lett.* **2014**, *43*, 711–713. DOI:10.1246/cl.140074 Top 1% Highly Cited Papers
- 62. Near–band Edge Optical Responses of Solution–processed Organic–inorganic Hybrid Perovskite  $\text{CH}_3\text{NH}_3\text{PbI}_3$  on Mesoporous  $\text{TiO}_2$  Electrodes**  
Yasuhiro Yamada, Toru Nakamura, Masaru Endo, Atsushi Wakamiya, Yoshihiko Kanemitsu  
*Appl. Phys. Express* **2014**, *7*, 032302. DOI:10.7567/APEX.7.032302
- 61. Modification and Unexpected Reactivity of 2–Borylbenzaldimines: Acylated and Silylated Derivatives as Well as Dimeric Compounds**  
Benedikt Neue, Atsushi Wakamiya, Roland Fröhlich, Birgit Wibbeling, Shigehiro Yamaguchi, Ernst–Ulrich Würthwein  
*J. Org. Chem.* **2013**, *78*, 11747–11755. DOI:10.1021/jo401748d
- 60. Constraint–induced Structural Deformation of Planarized Triphenylboranes in The Excited State**  
Tomokatsu Kushida, Cristopher Gamacho, Ayumi Shuto, Stephan Irle, Masayasu Muramatsu, Tetsuro Katayama, Syoji Ito, YutakNagasawa, Hiroshi Miyasaka, Eri Sakuda, Noboru Kitamura, Zhiguo Zhou, Atsushi Wakamiya, Shigehiro Yamaguchi  
*Chem. Sci.* **2014**, *5*, 1296–1304. DOI:10.1039/C3SC52751D Selected as a CoverPicture
- 59. Impacts of Dibenzo– and Dithieno–Fused Structures at the  $b$ ,  $g$  Bonds in the BODIPY Skeleton**  
Hiroyuki Shimogawa, Haruki Mori, Atsushi Wakamiya, Yasujiro Murata  
*Chem. Lett.* **2013**, *42*, 986–988. DOI:10.1246/cl.130360



58. **Synthesis and X-ray Structure of Endohedral Fullerene C<sub>60</sub> Dimer Encapsulating a Water Molecule in Each C<sub>60</sub> Cage**  
Rui Zhang, Michihisa Murata, [Atsushi Wakamiya](#), Yasujiro Murata  
*Chem. Lett.* **2013**, *42*, 879–881. DOI:10.1246/cl.130358
57. **Expansion of Orifices of Open C<sub>60</sub> Derivatives and Formation of an Open C<sub>59</sub>S Derivative by Reaction with Sulfur**  
Tsukasa Futagoishi, Michihisa Murata, [Atsushi Wakamiya](#), Takahiro Sasamori, Yasujiro Murata  
*Org. Lett.* **2013**, *15*, 2750–2753. DOI:10.1021/ol401083c
56. **Synthesis and Photovoltaic Properties of Acceptor Materials Based on the Dimerization of Fullerene C<sub>60</sub> for Efficient Polymer Solar Cells**  
Yuta Morinaka, Masahiro Nobori, Michihisa Murata, [Atsushi Wakamiya](#), Takashi Sagawa, Susumu Yoshikawab, Yasujiro Murata  
*Chem. Commun.* **2013**, *49*, 3670–3672. DOI:10.1039/C3CC41084F
55. **X-ray observation of a helium atom and placing a nitrogen atom inside He@C<sub>60</sub> and He@C<sub>70</sub>**  
Yuta Morinaka, Satoru Sato, [Atsushi Wakamiya](#), Hidefumi Nikawa, Naomi Mizorogi, Fumiyuki Tanabe, Michihisa Murata, Koichi Komatsu, Ko Furukawa, Tatsuhi Kato, Shigeru Nagase, Takeshi Akasaka, Yasujiro Murata  
*Nat. Commun.* **2013**, *4*, 1554/1–1554/5. DOI:10.1038/ncomms2574 Highlighted in 京都新聞
54. **Synthesis of Hexa(furan-2-yl)benzenes and Their  $\pi$ -Extended Derivatives**  
Koichi Mitsudo, Junji Harada, Yo Tanaka, Hiroki Mandai, Chie Nishioka, Hideo Tanaka, [Atsushi Wakamiya](#), Yasujiro Murata, Seiji Suga  
*J. Org. Chem.* **2013**, *78*, 2763–2768. DOI:10.1021/jo302652r
53. **Benzene-fused BODIPY and fully-fused BODIPY dimer: impacts of the ring-fusing at the b bond in the BODIPY skeleton**  
[Atsushi Wakamiya](#), Takanori Murakami, Shigehiro Yamaguchi  
*Chem. Sci.* **2013**, *4*, 1002–1007. DOI:10.1039/C2SC21768F
52. **Site-selective Sequential Coupling Reactions Controlled by “Electrochemical Reaction Site Switching”: a straightforward approach to 1,4-bis(diaryl)buta-1,3-diyne**  
Koichi Mitsudo, Natsuyo Kamimoto, Hiroki Murakami, Hiroki Mandai, [Atsushi Wakamiya](#), Yasujiro Murata, Seiji Suga  
*Org. Biomol. Chem.* **2012**, *10*, 9562–9569. DOI:10.1039/C2OB26567B
51. **Planarized *B*-Phenylborataanthracene Anions: Structural and Electronic Impacts of Coplanar Constraint**  
Tomokatsu Kushida, Zhiguo Zhou, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Chem. Commun.* **2012**, *48*, 10715–10717. DOI:10.1039/C2CC35874C Selected as Cover Picture
50. **Palladium-catalyzed Tetraallylation of C<sub>60</sub> with Allyl Chloride and Allylstannane: mechanism, regioselectivity, and enantioselectivity**  
Masakazu Nambo, [Atsushi Wakamiya](#), Kenichiro Itami  
*Chem. Sci.* **2012**, *3*, 3474–3481. DOI:10.1039/C2SC21126B

49. **Synthesis of a Library of Fluorescent 2-Aryl-3-trifluoromethylnaphthofurans from Naphthols by Using a Sequential Pummerer–Annulation/Cross–Coupling Strategy and their Photophysical Properties**  
Yuuya Ookubo, [Atsushi Wakamiya](#), Hideki Yorimitsu, Atsuhiko Osuka  
*Chem. Eur. J.* **2012**, *18*, 12690–12697. DOI:10.1002/chem.201201261
48. **Elucidation of  $\pi$ -Conjugation Modes in Diarene–Fused 1,2-Dihydro-1,2-diboron Dianions**  
Takafumi Araki, [Atsushi Wakamiya](#), Kenji Mori, Shigehiro Yamaguchi  
*Chem. Asian J.* **2012**, *7*, 1594–1603. DOI:10.1002/asia.201200055 Selected as VIP & Inside Cover, Highlighted in ワイリーサイエンスカフェ
47. **Planarized Triarylboranes: Stabilization by Structural Constraint and Their Plane–to–Bowl Conversion**  
Zhiguo Zhou, [Atsushi Wakamiya](#), Tomokatsu Kushida, Shigehiro Yamaguchi  
*J. Am. Chem. Soc.* **2012**, *134*, 4529–4532. DOI:10.1021/ja211944q Highlighted in MynaviNews, 日経産業新聞, 日刊工業新聞, 化学工業日報, 中日新聞, AngewChem
46. **Synthesis and Photophysical Properties of Aryl Substituted 2-Borylbenzaldimines and their Extended p-Conjugated Congeners**  
Benedikt Neue, Roland Fröhlich, Birgit Wibbeling, Aiko Fukazawa, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Ernst-Ulrich Würthwein  
*J. Org. Chem.* **2012**, *77*, 2176–2184. DOI:10.1021/jo202212s
45. **Halichonines A, B, and C, Novel Sesquiterpene Alkaloids from the Marine Sponge Halichondria Okadai Kadota**  
Osamu Ohno, Tatsuhiko Chiba, Seiji Todoroki, Hideaki Yoshimura, Norihito Maru, Ken Maekawa, Hiroshi Imagawa, Kaoru Yamada, [Atsushi Wakamiya](#), Kiyotake Suenaga, Daisuke Uemura  
*Chem. Commun.* **2011**, *47*, 12453–12455. DOI:10.1039/c1cc15557a
44. **Synthesis of 1-Phospha-2-boraacenaphthenes: Reductive 1,2-Aryl Migration of 1-Diarylboryl-8-dichlorophosphinonaphthalenes**  
Akihiro Tsurusaki, Takahiro Sasamori, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Kazuhiko Nagura, Stephan Irle, Norihiro Tokitoh  
*Angew. Chem., Int. Ed.* **2011**, *50*, 10940–10943. DOI:10.1002/anie.201104971
43. **Design, Synthesis, and Characterization of Functionalized Silepins: High Quantum Yield Blue Emitters**  
Lauren G. Mercier, Shunsuke Furukawa, Warren E. Piers, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Masood Parvez, Ross W. Harrington, William Clegg  
*Organometallics* **2011**, *30*, 1719–1729. DOI:10.1021/om2000597
42. **Electronic Tuning of Thiazolyl-Capped  $\pi$ -Conjugated Compounds via a Coordination/Cyclization Protocol with B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub>.**  
Andre Job, [Atsushi Wakamiya](#), Gerald Kehr, Gerhard Erker, Shigehiro Yamaguchi  
*Org. Lett.* **2010**, *12*, 5470–5473. DOI:10.1021/ol102282x

41. **Selective Introduction of Organic Groups to C<sub>60</sub> and C<sub>70</sub> Using Organoboron Compounds and Rhodium Catalyst: A New Synthetic Approach to Organo(hydro)fullerenes**  
Masakazu Nambo, Yasutomo Segawa, [Atsushi Wakamiya](#), Kenichiro Itami  
*Chem. Asian J.* **2010**, *6*, 590–598. DOI:10.1002/asia.201000583 Special Issue: In Honor of Professor Eiichi Nakamura for His 60th Birthday
40. **Tetraaryl-tetradecahydroporphyrins: Novel Porphyrin Derivatives Featuring a Cyclic Benzene Ring Tetramer**  
Simon Janich, Roland Fröhlich, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Ernst-Ulrich Würthwein  
*Chem. Eur. J.* **2009**, *15*, 10457–10463. DOI:10.1002/chem.200901187
39. **Highly Emissive Diborylphenylene-Containing Bis(phenylethynyl)benzenes: Structure-Photophysical Property Correlations and Fluoride Ion Sensing**  
Cui-Hua Zhao, Eri Sakuda, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Chem. Eur. J.* **2009**, *15*, 10603–10612. DOI:10.1002/chem.200900864
38. **Regioselective Unsymmetrical Tetraallylation of C<sub>60</sub> through Palladium Catalysis**  
Masakazu Nambo, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Kenichiro Itami  
*J. Am. Chem. Soc.* **2009**, *131*, 15112–15113. DOI:10.1021/ja9071173 Highlighted in SYNFACTS
37. **A B–B Bond-Containing Polycyclic  $\pi$ -Electron System: Dithieno-1,2-dihydro-1,2-diborin and Its Dianion**  
[Atsushi Wakamiya](#), Kenji Mori, Takafumi Araki, Shigehiro Yamaguchi  
*J. Am. Chem. Soc.* **2009**, *131*, 10850–10851. DOI:10.1021/ja905007s Highlighted in SYNFACTS
36. **Aromatic  $\pi$ -Systems More Curved Than C<sub>60</sub>. The Complete Family of All Indenocorannulenes Synthesized by Iterative Microwave-Assisted Intramolecular Arylations**  
Brian D. Steinberg, Edward A. Jackson, Alexander S. Filatov, [Atsushi Wakamiya](#), Marina A. Petrukhina, Lawrence T. Scott  
*J. Am. Chem. Soc.* **2009**, *131*, 10537–10545. DOI:10.1021/ja9031852
35. **Intramolecular Reductive Double Cyclization of  $o,o'$ -Bis(arylcarbonyl)diphenylacetylenes: Synthesis of Ladder  $\pi$ -Conjugated Skeletons**  
Hongyu Zhang, Takashi Karasawa, Hiroshi Yamada, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Org. Lett.* **2009**, *11*, 3076–3079. DOI:10.1021/ol901148p
34. **Structural Modification of Silicon-Bridged Ladder Stilbene Oligomers and Distyrylbenzenes**  
Hiroshi Yamada, Caihong Xu, Aiko Fukazawa, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Macro. Chem. Phys.* **2009**, *210*, 904–916. DOI:10.1002/macp.200900037
33. **3,4-Dihydro-3H-pyrrol-2-imines as Conformationally Restrained 1,3-Diazabutadienes: Synthesis, Structural Properties and Protonation**  
Simon Janich, Roland Fröhlich, Andrea Wilken, Jan von Zamory, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Ernst-Ulrich Würthwein  
*Eur. J. Org. Chem.* **2009**, *2009*, 2077–2087. DOI:10.1002/ejoc.200900045

32. **Coordination-Induced Intramolecular Double Cyclization: Synthesis of Boron-Bridged Dipyridylvinylenes and Dithiazolylvinylenes**  
Qiang Zhao, Hongyu Zhang, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Synthesis* **2008**, , 127–132. DOI:10.1055/s-0028-1083271 40th special issue
31. **Synthesis and Electronic Spectra of Disilatriptycene Oligomers: Evidence for Electronic Delocalization along the One-Dimensional Arrangement of Bridge-Head Disilanes**  
Shohei Sase, Yoen-Seok Cho, Atsushi Kawachi, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Hayato Tsuji, Kohei Tamao  
*Organometallics* **2008**, *27*, 5441–5445. DOI:10.1021/om701283e
30. **Highly Electron-Donating 3,3'-Diaryl-1,1'-bi(isobenzofuran)s Synthesized by Photochemical Exocyclic [2+2+2] Cycloaddition**  
Hongyu Zhang, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Org. Lett.* **2008**, *10*, 3591–3594. DOI:10.1021/ol801358c
29. **Electronic Modulation of Fused Oligothiophenes by Chemical Oxidation**  
Yoshitake Suzuki, Toshihiro Okamoto, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Org. Lett.* **2008**, *10*, 3393–3396. DOI:10.1021/ol801136k
28. **Red-Emissive Polyphenylated BODIPY Derivatives: Effect of Peripheral Phenyl Groups on the Photophysical and Electrochemical Properties**  
[Atsushi Wakamiya](#), Naoya Sugita, Shigehiro Yamaguchi  
*Chem. Lett.* **2008**, *37*, 1094–1095. DOI:10.1246/cl.2008.1094
27. **Synthesis and Structural Characterization of Pentaarylboroles and Their Dianions**  
Cheuk-Wai So, Daisuke Watanabe, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Organometallics* **2008**, *27*, 3496–3501. DOI:10.1021/om8002812
26. **Aryl-Aryl Bond Formation by Flash Vacuum Pyrolysis of Benzannulated Thiopyrans**  
Aaron W. Amick, [Atsushi Wakamiya](#), Lawrence T. Scott  
*J. Org. Chem.* **2008**, *73*, 5119–5122. DOI:10.1021/jo800379x
25. **Kinetically Stabilized Dibenzoborole as an Electron-Accepting Building Unit**  
[Atsushi Wakamiya](#), Kotaro Mishima, Kanako Ekawa, Shigehiro Yamaguchi  
*Chem. Commun.* **2008**, , 579–581. DOI:10.1039/B716107G
24. **3-Boryl-2,2'-Bithiophene as a Versatile Core Skeleton for Full-Color Highly Emissive Organic Solids**  
[Atsushi Wakamiya](#), Kenji Mori, Shigehiro Yamaguchi  
*Angew. Chem., Int. Ed.* **2007**, *46*, 4273–4276. DOI:10.1002/anie.200604935 Top 1% Highly Cited Papers Selected as a VIP and a Cover Picture & Highlighted in Angew Chem
23. **Relative Stereochemistries of the Ether Rings and Sugar Moieties in Durinskiol A**  
Masaki Kita, Michael C.Roy, Eric R.O.Siw,Isao Noma, Takahiro Takiguchi, Kaoru Yamada, Tomoyuki Koyama, Takeshi Iwashita, [Atsushi Wakamiya](#), Daisuke Uemura  
*Tetrahedron Lett.* **2007**, *48*, 3429–3432. DOI:10.1016/j.tetlet.2007.03.039 Highlighted as a Cover Picture

22. **Highly Emissive Poly(aryleneethynylene)s Containing 2,5-Diboryl-1,4-phenylene as a Building Unit**  
Cui-Hua Zhao, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Macromolecules* **2007**, *40*, 3898–3900. DOI:10.1021/ma0702997
21. **Single Crystal Field Effect Transistors of Benzo-Annulated Fused Oligothiophenes and Oligoselenophenes**  
Koichi Yamada, Toshihiro Okamoto, Kenichi Kudoh, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Jun Takeya  
*Appl. Phys. Lett.* **2007**, *90*, 072102. DOI:10.1063/1.2535617
20. **Crystallographic and Chiroptical Studies on Tetraarylferrocenes for Use as Chiral Rotary Modules for Molecular Machines**  
Takahiro Muraoka, Kazushi Kinbara, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Takuzo Aida  
*Chem. Eur. J.* **2007**, *13*, 1724–1730. DOI:10.1002/chem.200601098
19. **Ladder Distyrylbenzenes with Silicon and Chalcogen Bridges: Synthesis, Structures, and Properties**  
Kazuhiro Mouri, [Atsushi Wakamiya](#), Hiroshi Yamada, Takashi Kajiwara, Shigehiro Yamaguchi  
*Org. Lett.* **2007**, *9*, 93–96. DOI:10.1021/ol062615s
18. **Pentaindenocorannulene and Tetraindenocorannulene: New Aromatic p Systems with Curvatures Surpassing That of C<sub>60</sub>**  
Edward A. Jackson, Brian D. Steinberg, Mihail Bancu, [Atsushi Wakamiya](#), Lawrence T. Scott  
*J. Am. Chem. Soc.* **2007**, *129*, 484–485. DOI:10.1021/ja067487h Highlighted in Nature, 2007, 445, 128
17. **General Synthesis of Extended Fused Oligothiophenes Consisting of Even Number of Thiophene Rings**  
Toshihiro Okamoto, Kenichi Kudoh, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Chem. Eur. J.* **2007**, *13*, 548–556. DOI:10.1002/chem.200601064
16. **Highly Emissive Organic Solids Containing 2,5-Diboryl-1,4-phenylene Unit**  
Cui-Hua Zhao, [Atsushi Wakamiya](#), Yuko Inukai, Shigehiro Yamaguchi  
*J. Am. Chem. Soc.* **2006**, *128*, 15934–15935. DOI:10.1021/ja0637550
15. **High Fidelity Self-Sorting Assembling of meso-Cinchomeronimide Appended meso-meso Linked Zn(II) Diporphyrins**  
Taisuke Kamada, Naoki Aratani, Toshiaki Ikeda, Naoki Shibata, Yoshiki Higuchi, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Kil Suk Kim, Zin Seok Yoon, Dongho Kim, Atsuhiko Osuka  
*J. Am. Chem. Soc.* **2006**, *128*, 7670–7678. DOI:10.1021/ja0611137
14. **Intramolecular B–N Coordination as a New Scaffold for Design of Electron-Transporting Materials: Synthesis and Properties of Boryl-Substituted Thienylthiazoles**  
[Atsushi Wakamiya](#), Takuhiro Taniguchi, Shigehiro Yamaguchi  
*Angew. Chem., Int. Ed.* **2006**, *45*, 3170–3173. DOI:10.1002/anie.200504391

13. **Synthesis, structures, and photophysical properties of silicon and carbon-bridged ladder oligo(*p*-phenylenevinylene)s and related  $\pi$ -electron systems**  
Shigehiro Yamaguchi, Caihong Xu Hiroshi Yamada, [Atsushi Wakamiya](#)  
*J. Organomet. Chem. (Special Issue for 40th Anniversary)* **2005**, *690*, 5365–5377.  
DOI:10.1016/j.jorganchem.2005.05.019
12. **General Synthesis of Thiophene and Selenophene-Based Heteroacenes**  
Toshihiro Okamoto, Kenichi Kudoh, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Org.Lett.* **2005**, *7*, 5301–5304. DOI:10.1021/ol0523650
11. **Toward *p*-Conjugated Molecule Bundles; Synthesis of a Series of *B,B',B''*-Trianthryl-*N,N,N'*-triarylborazines and the Bundle Effects on their Properties**  
[Atsushi Wakamiya](#), Toshihisa Ide, Shigehiro Yamaguchi  
*J. Am. Chem. Soc.* **2005**, *127*, 14859–14866. DOI:10.1021/ja0537171
10. **Ladder Oligo(*p*-phenylenevinylene)s with Silicon and Carbon Bridges**  
Caihong Xu, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*J. Am. Chem. Soc.* **2005**, *127*, 1638–1639. DOI:10.1021/ja042964m
9. **Ladder Bis-Silicon-Bridged Stilbenes as a New Building Unit for Fluorescent  $\pi$ -Conjugated Polymers**  
Caihong Xu, Hiroshi Yamada, [Atsushi Wakamiya](#), Shigehiro Yamaguchi, Kohei Tamao  
*Macromolecules* **2004**, *37*, 8978–8983. DOI:10.1021/ma0486546
8. **General Silaindene Synthesis Based on Intramolecular Reductive Cyclization toward New Fluorescent Silicon-Containing  $\pi$ -Electron Materials**  
Caihong Xu, [Atsushi Wakamiya](#), Shigehiro Yamaguchi  
*Org. Lett.* **2004**, *6*, 3707–3710. DOI:10.1021/ol0486932
7. **Crystal Structures and Spectroscopic Characterization of Radical Cations and Dications of Oligothiophenes Stabilized by Annelation with Bicyclo[2.2.2]octene Units: Sterically Segregated Cationic Oligothiophenes**  
Tohru Nishinaga, [Atsushi Wakamiya](#), Daisuke Yamazaki, Koichi Komatsu  
*J. Am. Chem. Soc.* **2004**, *126*, 3163–3174. DOI:10.1021/ja039434v
6. **Synthesis and Properties of Novel Oligothiophenes Surrounded by Bicyclo[2.2.2]octene Frameworks**  
[Atsushi Wakamiya](#), Daisuke Yamazaki, Tohru Nishinaga, Toshikazu Kitagawa, Koichi Komatsu  
*J. Org. Chem.* **2003**, *68*, 8305–8314. DOI:10.1021/jo034754i
5. **Synthesis, Structure, and, Dynamic Behavior of Cyclopentadienyl-Lithium, -Sodium, and -Potassium Annelated with Bicyclo[2.2.2]octene Units: A Systematic Study on Site Exchange of Alkali Metals on a Cyclopentadienyl Ring in Tetrahydrofuran**  
Tohru Nishinaga, Daisuke Yamazaki, Helmut Stahr, [Atsushi Wakamiya](#), Koichi Komatsu  
*J. Am. Chem. Soc.* **2003**, *125*, 7324–7335. DOI:10.1021/ja0346431

4. **1,2-Dithiin Annelated with Bicyclo[2.2.2]octene Frameworks. One-Electron and Two-Electron Oxidations and Formation of a Novel 2,3,5,6-Tetrathiabicyclo[2.2.2]oct-7-ene Radical Cation with Remarkable Stability Owing to a Strong Transannular Interaction**  
Atsushi Wakamiya, Tohru Nishinaga, Koichi Komatsu  
*J. Am. Chem. Soc.* **2002**, *124*, 15038–15050. DOI:10.1021/ja028297j
3. **The Stable Radical Cation of Thiophene Annelated with Bicyclo[2.2.2]octene and Its Reaction with Triplet Oxygen to Give a Protonated Cation of 2-Butene-1,4-dione Derivative**  
Atsushi Wakamiya, Tohru Nishinaga, Koichi Komatsu  
*Chem. Commun.* **2002**, , 1192–1193. DOI:10.1039/B201958B
2. **The First Isolation of the Hexafluoroantimonate Salt of a 1,4-Dithiin Radical Cation Stabilized by Bicyclo[2.2.2]octene Annelation**  
Tohru Nishinaga, Atsushi Wakamiya, Koichi Komatsu  
*Tetrahedron Lett.* **1999**, *40*, 4375–4378. DOI:10.1016/S0040-4039(99)00752-2
1. **1,4-Dithiin Annelated with Bicyclo[2.2.2]octene Units: Experimental and Theoretical Evidence for the Aromaticity of 1,4-Dithiin Dication**  
Tohru Nishinaga, Atsushi Wakamiya, Koichi Komatsu  
*Chem. Commun.* **1999**, , 777–778. DOI:10.1039/A901216H

## <Review>

9. **Challenges and strategies toward long-term stability of lead-free tin-based perovskite solar cells**  
Ece Aktas, Nagalingam Rajamanickam, Jorge Pascual, Shuaifeng Hu, Mahmoud H. Aldamasy, Diego Di Girolamo, Wenhui Li, Giuseppe Nasti, Eugenia Martínez-Ferrero, Atsushi Wakamiya, Emilio Palomares, Antonio Abate  
*Commun. Mater.* **2022**, *3*, , 104. DOI:10.1038/s43246-022-00327-2
8. **Materials Chemistry Approach for Efficient Lead-Free Tin Halide Perovskite Solar Cells**  
Tomoya Nakamura, Taketo Handa, Richard Murdey, Yoshihiko Kanemitsu, Atsushi Wakamiya  
*ACS Appl. Electron. Mater.* **2020**, *2*, , 3794–3804. DOI:10.1021/acsaem.0c00859 Spotlight
7. **Progress in recycling organic-inorganic perovskite solar cells for eco-friendly fabrication**  
Fengjiu Yang, Shenghao Wang, Pengfei Dai, Luyang Chen, Atushi Wakamiya, Kazunari Matsuda  
*J. Mater. Chem. A* **2021**, *9*, , 2612–2627. DOI:10.1039/D0TA07495K
6. **Partially Oxygen-Bridged Triphenylamines with a Quasiplanar Structure as a Key Scaffold for Hole-Transporting Materials**  
Atsushi Wakamiya, Hidetaka Nishimura, Yasujiro Murata  
*J. Synth. Org. Chem Jpn.* **2016**, *74*, , 1128–1135. DOI:10.5059/yukigoseikyokaishi.74.1128

5. Design of Functional  $\pi$ -Electron Materials based on the Characteristic Features of Boron  
Atsushi Wakamiya, Shigehiro Yamaguchi  
*Bull. Chem. Soc. Jpn. (Award Account)* **2015**, *88*, , 1357–1377. DOI:10.1246/bcsj.20150151
4. ホウ素の特性を利用した高発光性有機固体の開発 (Exploiting Boron Characteristics to Develop Highly Emissive Organic Solids)  
Atsushi Wakamiya  
*光化学協会会誌* **2012**, *43*, , 35–38. DOI:09134689
3. ホウ素を含む機能性  $\pi$  電子系材料の設計と合成 (Design and Synthesis of Boron-Containing Functional  $\pi$ -Electron Materials)  
Atsushi Wakamiya, Shigehiro Yamaguchi  
*J. Synth. Org. Chem Jpn.* **2008**, *66*, , 858–868. DOI:10.5059/yukigoseikyokaisi.66.858
2. Ir錯体を用いた芳香族化合物の触媒的 direct ホウ素化反応 (IP-Catalyzed Direct Borylation of Arenes)  
Atsushi Wakamiya  
*J. Synth. Org. Chem Jpn.* **2006**, *64*, , 1304–1305. DOI:10.5059/yukigoseikyokaisi.64.1304
1. Boron as a Key Component for New  $\pi$  - Electron Materials  
 Shigehiro Yamaguchi, Atsushi Wakamiya  
*Pure Appl. Chem.* **2006**, *78*, , 1413–1424. DOI:10.1351/pac200678071413

## <Book>

5. 若宮淳志  
 「第6章 高効率ペロブスカイト太陽電池のための材料開発と塗布技術」,  
 「ペロブスカイト太陽電池の開発最前線」瀬川浩司 監修  
 シーエムシー出版、2019年発行、ISBN:978-4-7813-1427-3 p.62-70
4. Atsushi Wakamiya  
 “Chapter 1 Incorporation of Boron into  $\pi$ -Conjugated Scaffolds to Produce Electron-Accepting  $\pi$ -Electron Systems”,  
 “Main Group Strategies towards Functional Hybrid Materials” Editor(s):Thomas Baumgartner, Frieder Jäkle  
 Wiley、2017年発行、ISBN:9781119235941 p.1–26
3. 若宮淳志  
 「第2章 有機系太陽電池の新展開 12 準平面構造を鍵骨格に用いた有機半導体材料の開発」,  
 「太陽光と光電変換機能—異分野融合から生まれる次世代太陽電池—」早瀬修二 監修  
 シーエムシー出版、2016年発行、ISBN:978-4-7813-1137-1 p.154-160



## 2. 若宮淳志, 山田康弘, 金光義彦

「第2編 ペロブスカイト太陽電池の材料技術 第5章 有機金属ハライドペロブスカイト材料のX線結晶構造解析」,

「ペロブスカイト薄膜太陽電池の開発と最新技術」宮坂 力, 瀬川浩司 編

技術教育出版、2014年発行、ISBN:978-4-907837-25-9 p.78-91

## 1. 若宮淳志, 山口茂弘

「含ホウ素環状  $\pi$  電子系の化学」,

「ヘテロ元素の特性を活かした新機能材料」監修: 中條善樹

CMC出版、2010年発行、ISBN:978-4781302638 p.18-30