

# 林倫年 (Michitoshi HAYASHI)

## PUBLICATION LIST (2014-up to date):

### Peer reviewed articles

1. Kuang-Lieh Lu; Abhishek Pathak; Jing-Wen Shen; Muhammad Usman; Ling-Fang Wei; Shruti Mendiratta; Yu-Shin Chang; Batjargal Sainbileg; Chin-May Ngue; Ruei-San Chen; [Michitoshi Hayashi](#); Tzuoo-Tsair Luo; Fu Chen; Kuei-Hsien Chen; Tien-Wen Tseng; Li-Chyong Chen. “Integration of a ( $-Cu-S-$ )<sub>n</sub> Plane in a Metal–Organic Framework Affords High Electrical Conductivity”, NATURE COMMUNICATIONS (accepted) (2019).
2. Batjargal Sainbileg, [Michitoshi Hayashi](#); “Possible indirect to direct bandgap transition in SnS<sub>2</sub> via nickel doping”, CHEMICAL PHYSICS 522, 59-64 (2019).
3. Usman, M (Usman, Muhammad); Bera, KP (Bera, Krishna Prasad); Haider, G (Haider, Golam); Sainbileg, B (Sainbileg, Batjargal); [Hayashi, M](#) (Hayashi, Michitoshi); Lee, GH (Lee, Gene-Hsiang); Peng, SM (Peng, Shie-Ming); Chen, YF (Chen, Yang-Fang); Lu, KL (Lu, Kuang-Lieh). “Single-Molecule-Based Electroluminescent Device as Future White Light Source”, ACS APPLIED MATERIALS & INTERFACES 11, 4084-4092 (2019).
4. Shu, GJ (Shu, G. J.); Liou, Sz-Chian (Liou, S. C.); Lin, Chih-Kai (Lin, C. K.); [Hayashi, Michitoshi](#) (Hayashi, M.); Chou, Fang-Chen (Chou, F. C.). “The dp type  $\pi$ -bond and chiral charge density waves in 1T-TiSe<sub>2</sub>”, DALTON TRANSACTIONS (2018).
5. Shu, GJ (Shu, G. J.); Tian, JC (Tian, J. C.); Lin, CK (Lin, C. K.); [Hayashi, M](#) (Hayashi, M.); Liou, SC (Liou, S. C.); Chen, WT (Chen, W. T.); Wong, DP (Wong, Deniz P.); Liou, HL (Liou, H. L.); Chou, FC (Chou, F. C.). “Reply to Comment on 'Oxygen vacancy-induced magnetic moment in edge-sharing CuO<sub>2</sub> chains of Li<sub>2</sub>CuO<sub>2</sub>-delta”, NEW J PHYSICS 20, 058002 (2018).
6. Shu, GJ (Shu, G. J.); Tian, JC (Tian, J. C.); Lin, CK (Lin, C. K.); [Hayashi, M](#) (Hayashi, M.); Liou, SC (Liou, S. C.); Chen, WT (Chen, W. T.); Wong, DP (Wong, Deniz P.); Liou, HL (Liou, H. L.); Chou, FC (Chou, F. C.). “Oxygen vacancy-induced magnetic moment in edge-sharing CuO<sub>2</sub> chains of Li<sub>2</sub>CuO<sub>2</sub>-delta”, NEW J PHYSICS 20, 059501 (2018).
7. Sainbileg, B (Sainbileg, Batjargal); Lan, YB (Lan, Yu-Bing); Wang, JK (Wang, Juen-Kai); [Hayashi, M](#) (Hayashi, Michitoshi). “Deciphering Anomalous Raman Features of Regioregular Poly(3-hexylthiophene) in Ordered Aggregation Form”, J. PHYSICAL CHEMISTRY C 122, 4224-4231 (2018).
8. Chen, PT (Chen, Po-Tuan); Yung, TY (Yung, Tung-Yuan); Liu, TY (Liu, Ting-Yu); Sher, CW (Sher, Chin-Wei); [Hayashi, M](#) (Hayashi, Michitoshi). “Water-resistance of macromolecules adsorbed on CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> surfaces: A first-principles study”, CHEMICAL PHYSICS LETTERS 686, 203-211 (2017).

9. Chen, PT (Chen, Po-Tuan); Tyo, EC (Tyo, Eric C.); **Hayashi, M** (Hayashi, Michitoshi); Pellin, MJ (Pellin, Michael J.); Safonova, O (Safonova, Olga); Nachtegaal, M (Nachtegaal, Maarten); van Bokhoven, JA (van Bokhoven, Jeroen A.); Vajda, S (Vajda, Stefan); Zapol, P (Zapol, Peter). “Size-Selective Reactivity of Subnanometer Ag-4 and Ag-16 Clusters on a TiO<sub>2</sub> Surface”, *J. PHYSICAL CHEMISTRY C* 12, 6614-6625 (2017).
10. Ruth, A (Ruth, Anthony); **Hayashi, M** (Hayashi, Michitoshi); Zapol, P (Zapol, Peter); Si, JX (Si, Jixin); McDonald, MP (McDonald, Matthew P.); Morozov, YV (Morozov, Yurii V.); Kuno, M (Kuno, Masaru); Janko, B (Janko, Boldizsar). “Fluorescence intermittency originates from reclustering in two-dimensional organic semiconductors”, *NATURE COMMUNICATIONS* 8, 14521 (2017).
11. Zhang, F (Zhang, Feng); Wang, HW (Wang, Houng-Wei); Tominaga, K (Tominaga, Keisuke); **Hayashi, M** (Hayashi, Michitoshi); Hasunuma, T (Hasunuma, Tomohisa); Kondo, A (Kondo, Akihiko). “Application of THz Vibrational Spectroscopy to Molecular Characterization and the Theoretical Fundamentals: An Illustration Using Saccharide Molecules”, *CHEMISTRY-AN ASIAN JOURNAL* 12, 324-331 (2017).
12. Zhang, F (Zhang, Feng); Wang, HW (Wang, Houng-Wei); Tominaga, K (Tominaga, Keisuke); **Hayashi, M** (Hayashi, Michitoshi); Lee, SL (Lee, Sunglin); Nishino, T (Nishino, Takashi). “Elucidation of Chiral Symmetry Breaking in a Racemic Polymer System with Terahertz Vibrational Spectroscopy and Crystal Orbital Density Functional Theory”, *J. PHYSICAL CHEMISTRY LETTERS* 7, 4671-4676 (2016).
13. Zhang, F (Zhang, Feng); Wang, HW (Wang, Houng-Wei); Tominaga, K (Tominaga, Keisuke); **Hayashi, M** (Hayashi, Michitoshi). “Mixing of intermolecular and intramolecular vibrations in optical phonon modes: terahertz spectroscopy and solid-state density functional theory”, *WILEY INTERDISCIPLINARY REVIEWS-COMPUTATIONAL MOLECULAR SCIENCE* 6, 386-409 (2016).
14. Chen, YC (Chen, Ying-Chu); Lin, YG (Lin, Yan-Gu); Hsu, LC (Hsu, Liang-Ching); Tarasov, A (Tarasov, Alexander); Chen, PT (Chen, Po-Tuan); **Hayashi, M** (Hayashi, Michitoshi); Ungelenk, J (Ungelenk, Jan); Hsu, YK (Hsu, Yu-Kuei); Feldmann, C (Feldmann, Claus). “ss-SnWO<sub>4</sub> Photocatalyst with Controlled Morphological Transition of Cubes to Spikecubes”, *ACS CATALYSIS* 6, 2357-2367 (2016).
15. Zhang, F (Zhang, Feng); Wang, HW (Wang, Houng-Wei); Tominaga, K (Tominaga, Keisuke); **Hayashi, M** (Hayashi, Michitoshi). “Characteristics of Low-Frequency Molecular Phonon Modes Studied by THz Spectroscopy and Solid-State ab Initio Theory: Polymorphs I and III of Diflunisal”, *J. PHYSICAL CHEMISTRY B* 120, 1698-1710 (2016).
16. Mishima, K (Mishima, Kenji); Kinoshita, T (Kinoshita, Takumi); **Hayashi, M** (Hayashi, Michitoshi); Jono, R (Jono, Ryota); Segawa, H (Segawa, Hiroshi); Yamashita, K (Yamashita, Koichi). “Theoretical investigation of [Ru(tpy)(2)](2+),

- [Ru(tpy)(bpy)(H<sub>2</sub>O)](2+) and [Ru(tpy)(bpy)(Cl)](+) complexes in acetone revisited: Inclusion of strong spin-orbit couplings to quantum chemistry calculations”, J. THEORETICAL & COMPUTATIONAL CHEMISTRY 15, 165000 (2016).
17. Shiu, YJ (Shiu, Ying-Jen); **Hayashi, M** (Hayashi, Michitoshi); Shih, O (Shih, Orion); Su, C (Su, Charlene); Tsai, MY (Tsai, Min-Yeh); Yeh, YQ (Yeh, Yi-Qi); Su, CJ (Su, Chun-Jen); Huang, YS (Huang, Yu-Shan); Lin, SH (Lin, Sheng-Hsien); Jeng, US (Jeng, U-Ser). “Intrinsic coordination for revealing local structural changes in protein folding-unfolding”, PHYSICAL CHEMISTRY CHEMICAL PHYSICS 18, 3179-3187 (2016).
18. Usman, M (Usman, Muhammad); Mendiratta, S (Mendiratta, Shruti); Batjargal, S (Batjargal, Sainbileg); Haider, G (Haider, Golam); **Hayashi, M** (Hayashi, Michitoshi); Gade, NR (Gade, Narsinga Rao); Chen, JW (Chen, Jenq-Wei); Chen, YF (Chen, Yang-Fang); Lu, KL (Lu, Kuang-Lieh). “Semiconductor Behavior of a Three-Dimensional Strontium-Based Metal-Organic Framework”, ACS APPLIED MATERIALS & INTERFACES 7, 22767-22774 (2015).
19. Zhang, F (Zhang, Feng); Wang, HW (Wang, Houng-Wei); Tominaga, K (Tominaga, Keisuke); **Hayashi, M** (Hayashi, Michitoshi). “Intramolecular Vibrations in Low-Frequency Normal Modes of Amino Acids: L-Alanine in the Neat Solid State”, J. PHYSICAL CHEMISTRY 12, 3008-3022 (2015).
20. Mishima, K (Mishima, Kenji); Kinoshita, T (Kinoshita, Takumi); **Hayashi, M** (Hayashi, Michitoshi); Jono, R (Jono, Ryota); Segawa, H (Segawa, Hiroshi); Yamashita, K (Yamashita, Koichi); Lin, SH (Lin, Sheng Hsien). “Theoretical studies on the absorption spectra of cis-[Ru(4,4'-COO-2,2'-bpy)(2)(X)(2)](4-), (X = NCS, Cl) and panchromatic trans-terpyridyl Ru complexes including strong spin-orbit coupling”, PHYSICAL CHEMISTRY CHEMICAL PHYSICS 17, 12317-12327 (2015).
21. Yamaki, M (Yamaki, Masahiro); Mineo, H (Mineo, Hirobumi); Teranishi, Y (Teranishi, Yoshiaki); **Hayashi, M** (Hayashi, Michitoshi); Fujimura, Y (Fujimura, Yuichi); Nakamura, H (Nakamura, Hiroki); Lin, SH (Lin, Sheng Hsien). “Quantum Localization of Coherent pi-Electron Angular Momentum in (P)-2,2'-Biphenol”, J. PHYSICAL CHEMISTRY LETTERS 5, 2044-2049 (2014).
22. Chen, PT (Chen, Po-Tuan); Pai, WW (Pai, Woei Wu); **Hayashi, M** (Hayashi, Michitoshi). “A Minimal Cluster Model of Valence Electrons in Adatom-Assisted Adsorbed Molecules: NCH<sub>3</sub>/Cu(110) and OCH<sub>3</sub>/Cu(110)”, J. PHYSICAL CHEMISTRY 18, 9443-9449 (2014).
23. Zhang, F (Zhang, Feng); **Hayashi, M** (Hayashi, Michitoshi); Wang, HW (Wang, Houng-Wei); Tominaga, K (Tominaga, Keisuke); Kambara, O (Kambara, Ohki); Nishizawa, J (Nishizawa, Jun-ichi); Sasaki, T (Sasaki, Tetsuo). “Terahertz spectroscopy and solid-state density functional theory calculation of anthracene: Effect of dispersion force on the vibrational modes”, J. CHEMICAL PHYSICS 140, 174509 (2014).

24. Lai, YH (Lai, Ying-Huang); Chen, SW (Chen, Shiaw-Woei); **Hayashi, M** (Hayashi, Michitoshi); Shiu, YJ (Shiu, Ying-Jen); Huang, CC (Huang, Chiao-Cheng); Chuang, WT (Chuang, Wei-Tsung); Su, CJ (Su, Chun-Jen); Jeng, HC (Jeng, Hu-Cin); Chang, JW (Chang, Jhe-Wei); Lee, YC (Lee, Yao-Chang); Su, AC (Su, An-Chung); Mou, CY (Mou, Chung-Yuan); Jeng, US (Jeng, U-Ser). “Mesostructured Arrays of Nanometer-spaced Gold Nanoparticles for Ultrahigh Number Density of SERS Hot Spots”, *ADVANCED FUNCTIONAL MATERIALS* 24, 2544-2552 (2014).
25. Chen, PT (Chen, Po-Tuan); Tseng, CM (Tseng, Chuan-Ming); Yung, TY (Yung, Tung-Yuan); Chu, MW (Chu, Ming-Wen); Chen, CH (Chen, Cheng-Hsuan); **Hayashi, M** (Hayashi, Michitoshi). “First-principle calculations analysis of ELNES splitting for Mn<sub>3</sub>O<sub>4</sub> spinels related to atomic local symmetry”, *ULTRAMICROSCOPY* 140, 51-56 (2014).
26. Saravanan, C (Saravanan, Chinnusamy); Easwaramoorthi, S (Easwaramoorthi, Shanmugam); Hsiow, CY (Hsiow, Chuen-Yo); Wang, K (Wang, Karen); **Hayashi, M** (Hayashi, Michitoshi); Wang, L (Wang, Leeyih). “Benzoselenadiazole Fluorescent Probes - Near-IR Optical and Ratiometric Fluorescence Sensor for Fluoride Ion”, *ORGANIC LETTERS* 16, 354-357 (2014).
27. Chou, SW (Chou, Shang-Wei); Lai, YR (Lai, Ying-Ren); Yang, YY (Yang, Ya Yun); Tang, CY (Tang, Chih-Yuan); **Hayashi, M** (Hayashi, Michitoshi); Chen, HC (Chen, Hsieh-Chih); Chen, HL (Chen, Hui-Lung); Chou, PT (Chou, Pi-Tai). “Uniform size and composition tuning of PtNi octahedra for systematic studies of oxygen reduction reactions”, *J. CATALYSIS* 309, 343-350 (2014).
28. Zhang, F (Zhang, Feng); Kambara, O (Kambara, Ohki); Tominaga, K (Tominaga, Keisuke); Nishizawa, J (Nishizawa, Jun-ichi); Sasaki, T (Sasaki, Tetsuo); Wang, HW (Wang, Houng-Wei); **Hayashi, M** (Hayashi, Michitoshi). “Analysis of vibrational spectra of solid-state adenine and adenosine in the terahertz region”, *RSC ADVANCES* 4, 269-278 (2014).

## Conference

1. Zhang, F (Zhang, Feng); Wang, HW (Wang, Houng-Wei); Tominaga, K (Tominaga, Keisuke); **Hayashi, M** (Hayashi, Michitoshi). “Effect of intermolecular interactions on mixing of intermolecular and intramolecular vibrations: Terahertz spectroscopy and solid-state density functional theory”, *ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY* 253, 129 (2017).
2. Zhang, F (Zhang, Feng); Tominaga, K (Tominaga, Keisuke); **Hayashi, M** (Hayashi, Michitoshi); Wang, HW (Wang, Houng-Wei); Nishino, T (Nishino, Takashi). “Low-frequency Vibrational Dynamics of Poly(lactic acid) Stereocomplex Studied by THz spectroscopy and Solid-state DFT Simulation”, *2015 40TH INTERNATIONAL CONFERENCE ON INFRARED, MILLIMETER AND TERAHERTZ WAVES (IRMMW-THZ)* (2015).

3. Zhang, F (Zhang, Feng); Tominaga, K (Tominaga, Keisuke); [Hayashi, M](#) (Hayashi, Michitoshi); Wang, HW (Wang, Houng-Wei). “Low-frequency Vibration Study of Amino Acids Using Terahertz Spectroscopy and Solid-state Density Functional Theory”, INFRARED, MILLIMETER-WAVE, AND TERAHERTZ TECHNOLOGIES III 9275 (2014).
4. Chou, SW (Chou, Shang-Wei); Lai, YR (Lai, Ying-Ren); Yang, YY (Yang, Ya Yun); Tang, CY (Tang, Chih-Yuan); Chen, HL (Chen, Hui-Lung); Chen, HC (Chen, Hsieh-Chih); [Hayashi, M](#) (Hayashi, Michitoshi); Chou, PT (Chou, Pi-Tai). “Composition-controlled and uniform PtNi octahedra in oxygen reduction reaction and their theoretical study”, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY 248, 163-COLL (2014).
5. Lin, CK (Lin, Chih-Kai); [Hayashi, M](#) (Hayashi, Michitoshi); Lin, SH (Lin, Sheng Hsien). “Theoretical formulation and computational simulation of electronic sum-frequency generation (ESFG) spectroscopy of surfactant on water surface”, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY 247, 323-COMP (2014).

## Book Chapter

1. Feng Zhang, Keisuke Tominaga, [Michitoshi Hayashi](#), Takashi Nishino, “Effects of Non-Covalent Interactions on Molecular and Polymer: Individuality in Crystals Studied by THz Spectroscopy and Solid-State Density Functional Theory”. In *Molecular Spectroscopy: A Quantum Chemistry Approach* (ISBN: 9783527344611): Yukihiko Ozaki, Marek Janusz Wójcik, Jürgen Popp, Eds.; WILEY-VCH Germany 2019; Vol. 2, Chap. 16, 459-496, (In press).