

CV

- **Name:** KOTOBUKI Masashi
- **Title:** Professor
- **Year of Birth:** 1974

(a) Professional Preparation

Toyohashi University of Technology	Aichi, Japan	Materials Science	B.Sc; 1996
Toyohashi University of Technology	Aichi, Japan	Materials Science	M.Sc; 1998
University of Yamanashi	Yamanashi, Japan	Materials Science	Ph.D; 2006

(b) Appointments

- Professor, Ming Chi University of Technology, Taiwan, August 2021 -
- Senior Research Fellow, National University of Singapore, Singapore, May 2019 – May 2021
- Research Fellow, NUS, Singapore, Oct. 2014–Dec. 2018
- Associate Professor, Hakodate National College of Technology, Japan, Apr. 2011–Sep. 2014
- Assistant Professor, Tokyo Metropolitan University, Japan, Feb. 2009–Mar. 2011
- Researcher, Ulm University, Germany, Jun. 2006–Jan. 2009

(c) Publications

89 Journal articles with total citations 4228 and h-index 29 (Google scholar as of 02/12/2022)

Representative publications

- (1) **M. Kotobuki**, C. Zhou, Z. Su, L. Yang, Y. Wang, J. Jason, Z. Liu, L. Lu, "Importance of substrate materials for sintering $\text{Li}_{1.5}\text{Al}_{0.5}\text{Ge}_{1.5}(\text{PO}_4)_3$ solid electrolyte", **J. Solid State Chem.**, 310 (2022) 123043. DOI: <https://doi.org/10.1016/j.jssc.2022.123043>
- (2) Y. Wang, Z. Wang, F. Zheng, J. Sun, O. Sam, T. Wu, G. Chen, Q. Huang, **M. Kotobuki**, K. Zeng, L. Lu, "Ferroelectric Engineered Electrode-composite Polymer Electrolyte Interfaces for All-Solid-State Sodium Metal Battery", **Advanced Science**, (2022) 2105849. DOI: <https://doi.org/10.1002/advs.202105849>.
- (3) M. Koishi, **M. Kotobuki**, "Preparation of Y-doped $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ by co-precipitation method", *Ionics*, *in-press*. DOI: <https://doi.org/10.1007/s11581-022-04489-4>.
- (4) **M. Kotobuki**, S. Yanagiya, "Li-ion conductivity of NASICON-type $\text{Li}_{1+2x}\text{Zr}_{2-x}\text{Ca}_x(\text{PO}_4)_3$ solid electrolyte prepared by spark plasma sintering", **J. Alloy Compounds**, 862 (2021) 158641. DOI: <https://doi.org/10.1016/j.jallcom.2021.158641>
- (5) **M. Kotobuki**, E. Hanc, B. Yang, J. Molenda, L. Lu, "Stabilization of cubic $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ by Al substitution in various atmospheres", **Solid State Ionics**, 350 (2020) 115323. DOI: <https://doi.org/10.1016/j.ssi.2020.115323>
- (6) Y. Wang, Z. Wang, J. Sun, F. Zheng, **M. Kotobuki**, T. Wu, K. Zeng, L. Lu, "Flexible,

- stable, fast-ion-conducting composite electrolyte composed of nanostructured Na-superion-conductor framework and continuous Poly (ethylene oxide) for all-solid-state Na battery”, *J. Power Sources* 454 (2020) 227949. DOI: <https://doi.org/10.1016/j.jpowsour.2020.227949>
- (7) **M. Kotobuki**, H. Lei, Y. Chen, S. Song, C. Xu, N. Hu, J. Molenda, L. Lu, “Preparation of thin solid electrolyte by hot-pressing and diamond wire slicing”, *RSC Advances*, 9 (2019) 11670-11675. DOI: <https://doi.org/10.1039/c9ra00711c>
- (8) **M. Kotobuki**, L. Lu, S. V. Savilov, S. M. Aldoshin, “Poly(vinylidene fluoride)-based Al ion conductive solid polymer electrolyte for Al battery”, *J. Electrochem. Soc.* 164(14) (2017) A3868-A3875. DOI: <https://doi.org/10.1149/2.1601714jes>
- (9) **Masashi Kotobuki**, Shufeng Song, Rika Takahashi, Shunichi Yanagiya, Li Lu, “Improvement of Li ion conductivity of $\text{Li}_5\text{La}_3\text{Ta}_2\text{O}_{12}$ solid electrolyte by substitution of Ge for Ta”, *J. Power Sources*, 349 (2017) 105-110. DOI: <https://doi.org/10.1016/j.jpowsour.2017.03.032>
- (10) **Masashi Kotobuki**, Masaki Koishi, “Preparation of $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ solid electrolyte via a sol-gel method”, *Ceramics International*, 40 (2014) pp. 5043-5047. DOI: <https://doi.org/10.1016/j.ceramint.2013.09.009>
- (11) **Masashi Kotobuki**, Yuji Suzuki, Kiyoshi Kanamura, Yosuke Sato, Kazuhiro Yamamoto, Toshihiro Yoshida, “A Novel Structure of Ceramics Electrolyte for Future Lithium Battery”, *Journal of Power Sources*, 196 (2011) 9815-9819. DOI: <https://doi.org/10.1016/j.jpowsour.2011.07.005>
- (12) **Masashi Kotobuki**, Kiyoshi Kanamura, Yosuke Sato, Toshihiro Yoshida, “Fabrication of all-solid-state Lithium battery with Lithium metal anode using Al_2O_3 -added $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ solid electrolyte”, *Journal of power sources*, 196 (2011) 7750-7754. DOI: <https://doi.org/10.1016/j.jpowsour.2011.04.047>
- (13) **Masashi Kotobuki**, Yuji Suzuki, Hirokazu Munakata, Kiyoshi Kanamura, Yosuke Sato, Kazuhiro Yamamoto, Toshihiro Yoshida, “Compatibility of LiCoO_2 and LiMn_2O_4 cathode materials for $\text{Li}_{0.55}\text{La}_{0.35}\text{TiO}_3$ electrolyte to fabricate all-solid-state lithium battery”, *Journal of Power Sources*, 195 (2010) pp. 5784-5788. DOI: <https://doi.org/10.1016/j.jpowsour.2010.03.004>

(D) Mentoring and supervision of graduate students

Supervising PhD student (2022~)

- ✓ Development of novel electrolytes for chloride-ion battery (2022~)
- ✓ Development of thin-film battery using plasma-based technique (2022~)

Mentoring PhD students (2014~2020)

- ✓ Sodium-ion battery based on NASICON structure (2017~2020, graduated)
- ✓ Study on novel pyroelectric ceramics (2017~2020, graduated)
- ✓ Development of halide based sodium ion battery for next generation energy storage (2017~2020, graduated)

- ✓ Solid state electrolyte for energy storage (2017~2020, graduated)
- ✓ Study of lead-free pyroelectric ceramics for infrared sensors (2016~2019, graduated)
- ✓ Synergistic effect of dual doping on fast lithium ion conductor $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ (2016 ~2019, graduated)
- ✓ Development of solid electrolyte and integration technology for all-solid-state Lithium-ion batteries (2016 ~ 2019, graduated)
- ✓ Preparation and application of perovskite-type solid electrolytes for all-solid-state Lithium-ion batteries (2015 ~ 2018, graduated)
- ✓ Spinel-based cathode materials for high energy/power lithium ion batteries (2014 ~ 2017, graduated)
- ✓ High-capacity layered cathode materials for high-energy Li-ion batteries (2014 ~ 2017, graduated)
- ✓ NASICON-structures solid Li-ionic conductor for next wave of energy storage devices (2014 ~ 2017, graduated)

Supervising master students (2012~2013)

- ✓ Electrochemical properties of $\text{Li}_{1.5}\text{Al}_{0.5}\text{Ti}_{1.5}(\text{PO}_4)_3$ solid electrolyte prepared by a sol-gel method, 2012 ~ 13, graduated
- ✓ Properties of sol-gel prepared $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ solid electrolyte, 2012 ~ 13, graduated