

Publications

*corresponding author

2021

- (1) T. Gunji*, Y. Umehashi, H. Tsunoi, K. Yokoi, A. Kawai, F. Matsumoto, Preparation of Chemical-resistant Atomically Ordered Sn-Ni Alloy Films by Electroless Plating, *J. Alloys Compd.*, (In press).
- (2) F. Nomura, T. Watanabe, H. Ochiai, T. Gunji, T. Hagiwara, J. Wu, F. Matsumoto, The effect of cooling process on the structure and charge/discharge capacities of Li-rich solid-solution layered oxide cathode materials for the Li-ion battery, *RSC Adv.* 2021, **11**, 1715.
- (3) 田中 詩乃, 加藤 友人, 渡邊 秀人, 吉田 曉弘, 郡司 貴雄*, 松本 太, Cu 配線上への無電解パラジウム/金めっきに及ぼす Pd 触媒付与溶液中の添加剤の影響, 表面技術協会誌, 2021, **72**, 43.

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- (4) T. Gunji*, H. Ochiai, T. Ohira, Y. Liu, Y. Nakajima, F. Matsumoto, Preparation of Various Pd-based Alloys for Electrocatalytic CO₂ Reduction Reaction - Selectivity Depending on Secondary Elements, *Chem. Mater.* 2020, **32**, 6855.
- (5) X. Zhao, T. Gunji (co-first author), T. Kaneko, S. Takao, T. Sakata, K. Higashi, Y. Yoshida, J. Ge, C. Liu, W. Xing, J. Zhu, M. Xiao, T. Uruga, F. F. Tao, Z. Chen, *J. Mater. Chem. A* 2020, **8**, 1368.
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- (8) T. Watanabe, K. Hirai, F. Ando, S. Kurosumi, S. Ugawa, H. Lee, Y. Irii, F. Maki, T. Gunji, J. Wu, T. Ohsaka, F. Matsumoto, Surface double coating of a LiNi_aCo_bAl_{1-a-b}O₂ (a > 0.85) cathode with TiO_x and Li₂CO₃ to apply a water-based hybrid polymer binder to Li-ion batteries, *RSC Advances* 2020, **10**, 13642.

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- (9) T. Gunji*, H. Ochiai, Y. Isawa, Y. Liu, F. Nomura, M. Miyauchi, F. Matsumoto, Electrocatalytic Conversion of Carbon Dioxide to Formic Acid over Nanosized Cu₆Sn₅

Intermetallic Compounds with a SnO₂ Shell Layer, *Catal. Sci. Technol.* 2019, **9**, 6577.

(10) X. Zhao, T. Gunji, T. Kaneko, Y. Yoshida, S. Takao, K. Higashi, T. Uruga, W. He, J. Liu, Z. Zou, An Integrated Single-Electrode Method Reveals the Template Roles of Atomic Steps: Disturb Interfacial Water Networks and Thus Affect the Reactivity of Electrocatalysts, *J. Am. Chem. Soc.* 2019, **141**, 8516. (カバー選出)

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- (19) F. Nomura, Y. Liu, T. Tanabe, N. Tamura, T. Tsuda, T. Hagiwara, T. Gunji, T. Ohsaka, F. Matsumoto, Optimization of Calcination Temperature in Preparation of a High Capacity Li-rich Solid-Solution $\text{Li}[\text{Li}_{0.2}\text{Ni}_{0.18}\text{Co}_{0.03}\text{Mn}_{0.58}]\text{O}_2$ Material and Its Cathode Performance in Lithium Ion Battery, *Electrochim. Acta* 2018, **269**, 321.
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- (24) T. Tanabe, T. Gunji, Y. Honma, K. Miyamoto, T. Tsuda, Y. Mochizuki, S. Kaneko, S. Ugawa, H. Lee, T. Ohsaka, F. Matsumoto, Preparation of Water-Resistant Surface Coated High-Voltage $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ Cathode and Its Cathode Performance to Apply a Water-Based Hybrid Polymer Binder to Li-Ion Batteries, *Electrochim. Acta* 2017, **224**, 429.
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Funding

(1) 科学研究費助成事業 若手研究 「光触媒/助触媒界面が誘発する二酸化炭素還元反応の高選択・高活性化」 3,200,000 円

(2020年4月-現在) (代表)

(2) 岩谷直治記念財団 2020年度研究助成 「卑金属金属間化合物コア-Pt シェル構造を持つ新奇電極触媒の創出」 1,500,000 円

(2020年4月-現在) (代表)

(3) 公益財団法人 泉科学技術振興財団 「金属間化合物化による光触媒用助触媒の活性点構造の修飾」 1,000,000 円

(2019年10月-現在) (代表)

(4) 公益財団法人東電記念財団 「耐久性に優れた新規電極触媒の創生」 1,000,000 円

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- (7) 池谷科学技術振興財団 「金属間化合物の表面構造と触媒特性の関係」 700,000 円 (2016 年 4 月-2017 年 3 月) (代表)
- (8) 平成 27 年度電気化学会国際交流若手助成金 (国際学会の渡航費) 100,000 円 (2015 年 5 月) (代表)
- (9) 加藤科学財団 「助触媒の電子的, 結晶学的なチューニングによる光触媒反応の高活性化高選択性化」 300,000 円 (2014 年 6 月-2015 年 3 月) (代表)

Invite lecture

- (1) 郡司貴雄「金属間化合物触媒の創出と電気化学反応への応用」電気化学会第 88 回大会、2021 年 3 月 24 日、受賞講演
- (2) T. Gunji, 第二回日中新エネルギー自動車動力電池技術研究会, 2020 年 10 月 29 日 (依頼講演)
- (3) 郡司貴雄「電極触媒材料のキャラクタリゼーションと最近の研究について」電気化学会関東支部第 38 回夏の学校, 2020 年 9 月 (招待講演)
- (4) 郡司貴雄「金属間化合物ナノ粒子の創生と電極触媒反応への適用」第 147 回燃料電池研究会セミナー, 2020 年 6 月
- (5) T. Gunji, “Photocatalytic Decomposition of Organic Compounds and CO2 Reduction Reaction over Ordered Intermetallic Compounds” 26th Topical Meeting of ISE, March 29 to 1 April of 2020 in Tainan (Cancelled)
- (6) 郡司貴雄「金属間化合物ナノ粒子の創生と電極触媒反応への適用」関東支部サイエンスレクチャー, 2019 年 2 月

Social activities

- 電気化学会関東支部幹事 2018 年～2019 年
- 表面技術協会第 139 回講演大会実行委員, 2019.3.18-19.
- 神奈川県危険物安全協会連合会 講師 2021 年 1 月～現在
- Electrochem (MDPI) 編集委員 2019 年～現在
- 先端ウェットプロセス技術研究会委員 2021 年～現在
- 電気化学会関東支部幹事 2021 年～現在