

燃料電池に関連する研究論文

中性子小角散乱によるその場計測

- 1-1. S. Koizumi, S. Ueda, P. Ananda, and Y. Tsutsumi, “Heterogeneous cell performance of polymer electrolyte fuel cell at high current operation: Respiration mode as non-equilibrium phenomenon”. *AIP Advances*, **9** (2019) 065206(9).
- 1-2. S. Ueda, S. Koizumi, Y. Tsutsumi, “Initial conditioning of a polymer electrolyte fuel cells: The relationship between microstructure development and cell performance, investigated by small-angle neutron scattering”. *Results in Physics*, **12** (2019) 1871-1879.
- 1-3. S. Ueda, S. Koizumi, Y. Tsutsumi, “Flooding and performance of polymer electrolyte fuel cell, investigated by small-angle neutron scattering, neutron radiography and segmented electrode”. *Results in Physics*, **12** (2019) 504-511.
- 1-4. 特許取得 発明の名称「燃料電池、燃料電池システムおよび発電方法」 特許第 5504498 号 (2014 年 3 月 28 日登録)

反射率計や斜入射散乱への発展

- 1-5. S. Koizumi, S. Ueda, Y. Noda, “Time-resolved total reflection detects mass transfer along thickness direction of bulk Nafion® film.” *Physica B: Condensed Matter*, **551** (2018) 163-166.
- 1-6. S. Koizumi, S. Ueda, T. Inada, Y. Noda and R. A. Robinson, “Microstructure and water distribution in catalysts for polymer electrolyte fuel cells, elucidated by contrast variation small-angle neutron scattering”. *J. Appl. Cryst.*, **52** (2019) 791–799.
- 1-7. S. Ueda, S. Koizumi, A. Ohira, S. Kuroda, H. Frielinghaus, “Grazing-incident neutron scattering to access catalyst for polymer electrolyte fuel cell”. *Physica B: Condensed Matter*, **551** (2018) 309-314.

走査型電子顕微鏡と中性子小角散乱

- 1-8. S. Koizumi, S. Ueda, Y. Nishikawa, T. Terao and N. Kubo, “New attempt to combine scanning electron microscopy and small-angle scattering in reciprocal space”. *J. Appl. Cryst.*, **52** (2019) 783–790.
- 1-9. S. Ueda, Y. Kobayashi, S. Koizumi, and Yasuyuki Tsutsumi, “In-situ Observation of Water at Fuel Cell Catalyst Using Scanning Electron Microscope”. *Microscopy*, **64** (2014) 87-96.

中性子小角散乱とラジオグラフィーの同時計測

- 1-10. H. Iwase, S. Koizumi, H. Iikura, M. Matsubayashi, D. Yamaguchi, Y. Maekawa, T. Hashimoto, “A combined method of small-angle neutron scattering and neutron radiography to visualize water in an operating fuel cell over a wide length scale from micron to millimeter” *Nucl. Inst. & Meth. in Phys. Res. A*, **605** (2009) 95-98.
- 1-11. 小泉 智, 他 “中性子小角散乱は生きたままをみる分析技術—作動状態にある燃料電池の内部を可視化する” 燃料電池, Vol. 9 (2010) 7-14.
- 1-12. 小泉 智 “中性子小角散乱 原子炉と加速器” エレクトロニクス実装学会誌 Vol.15 No.4 (2012) 283-289.