

Publications on battery materials, NAFUMA research group, University of Oslo

29. **First-principles study of the structural stability and electrochemical properties of Na_2MSiO_4 ($M = \text{Mn, Fe, Co and Ni}$) polymorphs**
Bianchini, Federico; Fjellvåg, Helmer; Vajeeston, Ponniah; *Physical Chemistry Chemical Physics* DOI: 10.1039/c7cp01395g
28. **First-principles study of structural stability, dynamical properties of $\text{Li}_2\text{MSiPO}_4$ ($M = \text{Mn, Co, Ni}$) polymorphs** Vajeeston, Ponniah;; Bianchini, Federico; Fjellvåg, Helmer; (submitted)
27. **The intriguing mechanism of phosphorus anodes for sodium ion batteries revealed by operando pair distribution function and X-ray diffraction computed tomography**
Sottmann, Jonas; Di Michiel, Marco; Fjellvåg, Helmer; Malavasi, Lorenzo; Margadonna, Serena; Vajeeston, Ponniah; Vaughan, Gavin; Wragg, David S., *arXiv:1703.04337*
26. **Enhanced process and composition control for atomic layer deposition with lithium trimethylsilanolate**
Ruud, Amund; Miikkulainen, Ville; Fjellvåg, Helmer; Nilsen, Ola, *Journal of Vacuum Science & Technology A: Vacuum, Surfaces, and Films* 35, 01B133 (2017)
25. **Bismuth Vanadate and Molybdate: Stable Alloying Anodes for Sodium-Ion Batteries**
Sottmann, Jonas; Herrmann, Matthias; Vajeeston, Ponniah; Ruud, Amund; Drathen, Christina; Emerich, Hermann; Wragg, David S.; Fjellvåg, Helmer, *Chemistry of Materials* 2017 (29) 2803-2810
24. **First-principles study of structural stability, dynamical and mechanical properties of $\text{Li}_2\text{FeSiO}_4$ polymorphs** Vajeeston, P.; Fjellvåg, H. *RSC Advances* 2017 (7) 16843-53
23. **Electrical characterization of amorphous LiAlO_2 thin films deposited by atomic layer deposition**
Hu, Yang; Ruud, Amund; Miikkulainen, Ville; Norby, Truls; Nilsen, Ola; Fjellvåg, Helmer *RSC Advances* (2016), 6(65), 60479-60486.
22. **In situ synchrotron study of ordered and disordered $\text{LiMn}_{1.5}\text{Ni}_{0.5}\text{O}_4$ as lithium ion battery positive electrode** Samarasingha, Pushpaka B.; Sottmann, Jonas; Margadonna, Serena; Emerich, Hermann; Nilsen, Ola; Fjellvåg, Helmer; *Acta Materialia* (2016), 116, 290-297.
21. **Versatile electrochemical cell for Li-/Na-ion batteries and high-throughput setup for combined operando X-ray diffraction and absorption spectroscopy** Sottmann, Jonas; Homs-Regojo, Roberto; Wragg, David S.; Fjellvåg, Helmer; Margadonna, Serena and Emerich, Hermann; *Journal of Applied Crystallography* (2016), 49, 1972-1981
20. **In operando Synchrotron XRD/XAS Investigation of Sodium Insertion into the Prussian Blue Analogue Cathode Material $\text{Na}_{1.32}\text{Mn}[\text{Fe}(\text{CN})_6]_{0.83} \cdot z \text{H}_2\text{O}$** Sottmann, Jonas; Bernal, Fabian L. M.; Yussenko, Kirill V.; Herrmann, Matthias; Emerich, Hermann; Wragg, David S.; Margadonna, Serena *Electrochimica Acta* (2016), 200, 305-313.
19. **A novel polytype - the stacking fault based $\gamma\text{-MoO}_3$ nanobelts** Slawinski, Wojciech A.; Fjellvåg, Øystein S.; Ruud, Amund; Fjellvåg, Helmer *Acta Crystallographica, Section B*: (2016), 72(2), 201-208.
18. **How Crystallite Size Controls the Reaction Path in Nonaqueous Metal Ion Batteries: The Example of Sodium Bismuth Alloying** Sottmann, Jonas; Herrmann, Matthias; Vajeeston, Ponniah; Hu, Yang; Ruud, Amund; Drathen, Christina; Emerich, Hermann; Fjellvåg, Helmer; Wragg, David S. *Chemistry of Materials* 2016, 28(8), 2750-2756.
17. **Neutron diffraction and Raman analysis of $\text{LiMn}_{1.5}\text{Ni}_{0.5}\text{O}_4$ spinel type oxides for use as lithium ion battery cathode and their capacity enhancements.** Samarasingha, Pushpaka; Andersen, Niels Højmark; Sørby, Magnus Helgerud; Kumar, Susmit; Nilsen, Ola; Fjellvåg, Helmer. *Solid State Ionics* 2016; 284, 28-36
16. **Ultra-high power capabilities in amorphous FePO_4 thin films** Gandrud, Knut Bjarne; Nilsen, Ola; Fjellvåg, Helmer. *Journal of Power Sources* 2016, 306, 454-458
15. **Freeze-dried Li_xMoO_3 nanobelts used as cathode materials for lithium-ion batteries: A bulk and interface study.** Villevieille, Claire; Gorzkowska-Sobas, Agnieszka A; Fjellvåg, Helmer; Novak, Petr. *Journal of Power Sources* 2015, 297, 276-282
14. **Amorphous (Glassy) Carbon, a Promising Material for Sodium Ion Battery Anodes: a Combined First-Principles and Experimental Study** Legrain, Fleur; Sottmann, Jonas; Kotsis, Konstantinos; Gorantla, Sandeep; Sartori, Sabrina; Manzhos, Sergei *Journal of Physical Chemistry C* (2015), 119(24), 13496-13501.
13. **Investigation of Li^+ insertion in columbite structured FeNb_2O_6 and rutile structured CrNb_2O_6 materials.** Samarasingha, Pushpaka; Thomas, Christopher Ian; Fjellvåg, Helmer. *Electrochimica Acta* 2015; 153.232-237

12. **Atomic layer deposited lithium aluminum oxide: (In)dependency of film properties from pulsing sequence.** Miikkulainen, Ville; Nilsen, Ola; Li, Han; King, Sean W.; Laitinen, Mikko; Sajavaara, Timo; Fjellvåg, Helmer. *Journal of Vacuum Science & Technology. A.* 2015; 33.(1A101)
11. **High power nano-structured V₂O₅ thin film cathodes by atomic layer deposition.** Østreng, Erik; Gandrud, Knut Bjarne; Hu, Yang; Nilsen, Ola; Fjellvåg, Helmer. *Journal of Materials Chemistry A* 2014 ;Volum 2
10. **Atomic layer deposition of functional films for Li-ion microbatteries** Nilsen, Ola; Miikkulainen, Ville; Gandrud, Knut Bjarne; Østreng, Erik; Ruud, Amund; Fjellvåg, Helmer. *Physica Status Solidi (a) applications and materials science* 2013, 10544-15051
9. **Atomic Layer Deposition of Spinel Lithium Manganese Oxide by Film-Body-Controlled Lithium Incorporation for Thin-Film Lithium-Ion Batteries.** Miikkulainen, Ville; Ruud, Amund; Østreng, Erik; Nilsen, Ola; Timo, Sajavaara; Laitinen, Mikko; Fjellvåg, Helmer. *Journal of Physical Chemistry C* 2013 ; 118(2) 1258-1268
8. **Atomic layer deposition of Li_xTi_yO_z thin films.** Miikkulainen, Ville; Nilsen, Ola; Laitinen, Mikko; Sajavaara, Timo; Fjellvåg, Helmer. *RSC Advances* 2013 ;Volum 3.(20) 7537-7542
7. **High-performing iron phosphate for enhanced lithium ion solid state batteries as grown by atomic layer deposition.** Gandrud, Knut Bjarne; Pettersen, Anders; Nilsen, Ola; Fjellvåg, Helmer. *Journal of Materials Chemistry* 2013 ;Volum 1(32) 9054-9059
6. **Atomic layer deposition of lithium nitride and carbonate using lithium silylamide.** Østreng, Erik; Vajeeston, Ponniah; Nilsen, Ola; Fjellvåg, Helmer. *RSC Advances* 2012;Volum 2.(15) s. 6315-6322
5. **Niobium(V) Oxynitride: Synthesis, Characterization, and Feasibility as Anode Material for Rechargeable Lithium-Ion Batteries.** Wang, Xiao-Jun; Krumeich, Frank; Wörle, Michael; Nesper, Reinhard; Jantsky, Laurent; Fjellvåg, Helmer. *Chemistry - A European Journal* 2012;Volum 18(19) 5970-5978
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3. **Atomic Layer Deposition of Li₂O-Al₂O₃ Thin Films.** Aaltonen, Titta; Nilsen, Ola; Magraso Sola, Anna; Fjellvåg, Helmer. *Chemistry of Materials* 2011 ;Volum 23.(21) s.4669-75
2. **Lanthanum Titanate and Lithium Lanthanum Titanate Thin Films Grown by Atomic Layer Deposition.** Aaltonen, Titta; Alnes, Mari; Nilsen, Ola; Costelle, Leila; Fjellvåg, Helmer. *Journal of Materials Chemistry* 2010 ; 20., 2877-2881
1. **Atomic layer deposition of lithium containing thin films.** Putkonen, Matti; Aaltonen, Titta Katriina; Alnes, Mari; Sajavaara, Timo; Nilsen, Ola; Fjellvåg, Helmer. *J. Mat. Chem.* (2009); 19(46), 8767-71