

TEM Gemini Centre Publications 2014

(People in Gemini Centre in **bold**)

Journal Publications

1. F. J. H. **Ehlers**, "[Ab initio interface configuration determination for \$\beta\$ in Al-Mg-Si: Beyond the constraint of a preserved precipitate stoichiometry](#)", *Computational Materials Science*, **81**, 617-629, 2014.
2. F. J. H. **Ehlers** and S. Dumoulin, "[Interface configuration stability and interfacial energy for the \$\beta\$ phase in Al-Mg-Si as examined with a first principles based hierarchical multi-scale scheme](#)", *Journal of Alloys and Compounds*, **591**, 329-336, 2014.
3. F. J. H. **Ehlers**, S. Dumoulin and R. **Holmestad**, "[3D modelling of \$\beta\$ in Al-Mg-Si: Towards an atomistic level ab initio based examination of a full precipitate enclosed in a host lattice](#)", *Computational Materials Science*, **91**, 200-210, 2014.
4. A. M. Fyhn, X. Yang, M. Nematollahi, J. C. **Walmsley** and U. J. Gibson, "[Anodic electrodeposition of Ag_{1-x}Cu_xO microcrystals](#)", *Journal of Solid State Electrochemistry*, **18**, 13-18, 2014.
5. F. J. H. **Ehlers**, S. **Wenner**, S. J. **Andersen**, C. D. **Marioara**, W. Lefebvre, C. B. Boothroyd and R. **Holmestad**, "[Phase stabilization principle and precipitate-host lattice influences for Al-Mg-Si-Cu alloy precipitates](#)", *Journal of Materials Science*, **49**, 6413-6426, 2014.
6. V. T. **Fauske**, D. C. Kim, A. M. Munshi, D. L. Dheeraj, B.-O. Fimland, H. Weman and A. T. J. v. **Helvoort**, "[In-situ electrical and structural characterization of individual GaAs nanowires](#)", *Journal of Physics: Conference Series*, 2014.
7. P. V. D. S. Gunawardana, T. T. M. Nguyen, J. C. **Walmsley** and H. J. Venvik, "[Initiation of metal dusting corrosion in conversion of natural gas to syngas studied under industrially relevant conditions](#)", *Industrial and Engineering Chemistry Research*, **53**, 1794-1803, 2014.
8. M. Lamers, L. E. Hintzsche, K. T. Butler, P. E. **Vullum**, C.-M. Fang, M. Marsman, G. Jordan, J. H. Harding, G. Kresse and A. Weeber, "[The interface of a-SiN_x:H and Si: Linking the nano-scale structure to passivation quality](#)", *Solar Energy Materials and Solar Cells*, **120, Part A**, 311-316, 2014.
9. F. Lou, H. Zhou, T. D. **Tran**, M. E. Melandsø Buan, F. Vullum-Bruer, M. Rønning, J. C. **Walmsley** and D. Chen, "[Coaxial carbon/metal oxide/aligned carbon nanotube](#)

- [arrays as high-performance anodes for lithium ion batteries](#)", *ChemSusChem*, **7**, 1335-1346, 2014.
10. C. D. **Marioara**, S. J. **Andersen**, J. Røyset, O. Reiso, S. Gulbrandsen-Dahl, T. E. Nicolaisen, I. E. Opheim, J. F. Helgaker and R. **Holmestad**, "[Improving thermal stability in Cu-containing Al-Mg-Si alloys by precipitate optimization](#)", *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **45**, 2938-2949, 2014.
 11. A. M. F. **Muggerud**, Y. **Li** and R. **Holmestad**, "[Composition and orientation relationships of constituent particles in 3xxx aluminum alloys](#)", *Philosophical Magazine*, **94**, 556-568, 2014, [online 2013](#).
 12. A. M. Munshi, D. L. Dheeraj, V. T. **Fauske**, D.-C. Kim, J. Huh, J. F. Reinertsen, L. Ahtapodov, K. Lee, B. Heidari, A.T.J. **Van Helvoort**, B.-O. Fimland and H. Weman, "[Position Controlled Uniform GaAs Nanowires on Silicon using Nanoimprint Lithography](#)", *Nano Letters*, **14**, 960-966, 2014.
 13. P. H. Ninive, A. Strandlie, S. Gulbrandsen-Dahl, W. Lefebvre, C. D. **Marioara**, S. J. **Andersen**, J. Friis, R. **Holmestad** and O. M. Løvvik, "[Detailed atomistic insight into the \$\beta\$ phase in Al-Mg-Si alloys](#)", *Acta Materialia*, **69**, 126-134, 2014.
 14. T. **Saito**, C. D. **Marioara**, S. J. **Andersen**, W. Lefebvre and R. **Holmestad**, "[Aberration-corrected HAADF-STEM investigations of precipitate structures in Al-Mg-Si alloys with low Cu additions](#)", *Philosophical Magazine*, **94**, 520-531, 2014, [online 2013](#).
 15. T. **Saito**, C. D. **Marioara**, S. J. **Andersen**, W. Lefebvre and R. **Holmestad**, "[Structural investigation of precipitates with Cu and Zn atomic columns in Al-Mg-Si alloys by aberration-corrected HAADFSTEM](#)", *Journal of Physics: Conference Series*, 2014.
 16. T. **Saito**, C. D. **Marioara**, J. Røyset and R. **Holmestad**, "[Influence of low Cu addition on quench sensitivity in Al-Mg-Si alloys](#)", *Advanced Materials Research: THERMEC*, **922**, 616-621, 2014.
 17. T. **Saito**, C. D. **Marioara**, J. Røyset, K. **Marthinsen** and R. **Holmestad**, "[The effects of quench rate and pre-deformation on precipitation hardening in Al-Mg-Si alloys with different Cu amounts](#)", *Materials Science and Engineering: A*, **609**, 72-79, 2014.
 18. T. **Saito**, S. **Wenner**, E. **Osmundsen**, C. D. **Marioara**, S. J. **Andersen**, J. Røyset, W. Lefebvre and R. **Holmestad**, "[The effect of Zn on precipitation in Al-Mg-Si alloys](#)", *Philosophical Magazine*, **94**, 2410-2425, 2014.

19. E. Senel, J. C. **Walmsley**, S. Diplas and K. Nisancioglu, "[Liquid metal embrittlement of aluminium by segregation of trace element gallium](#)", *Corrosion Science*, **85**, 167-173, 2014.
20. G. Singh, P. A. Kumar, C. Lundgren, A. T. J. van **Helvoort**, R. Mathieu, E. Wahlström and W. R. Glomm, "[Tunability in Crystallinity and Magnetic Properties of Core–Shell Fe Nanoparticles](#)", *Particle & Particle Systems Characterization*, n/a-n/a, 2014.
21. G. Singh, A. T. J. van **Helvoort**, S. Bandyopadhyay, S. Volden, J. P. Andreassen and W. R. Glomm, "[Synthesis of Au nanowires with controlled morphological and structural characteristics](#)", *Applied Surface Science*, **311**, 780–788, 2014.
22. N. E. Tsakoumis, R. **Dehghan-Niri**, M. Rønning, J. C. **Walmsley**, Y. Borg, E. Rytter and A. Holmen, "[X-ray absorption, X-ray diffraction and electron microscopy study of spent cobalt based catalyst in semi-commercial scale Fischer-Tropsch synthesis](#)", *Applied Catalysis A: General*, **479**, 59-69, 2014.
23. S. **Wenner**, C. D. **Marioara**, Q. M. Ramasse, D.-M. Kepaptsoglou, F. S. Hage and R. **Holmestad**, "[Atomic-resolution electron energy loss studies of precipitates in an Al–Mg–Si–Cu–Ag alloy](#)", *Scripta Materialia*, **74**, 92-95, 2014.

ICAA14 Proceedings

1. F. J. H. **Ehlers**, S. Dumoulin, K. **Marthinsen** and R. **Holmestad**, "[Interfacial and strain energy analysis from *ab initio* based hierarchical multi-scale modelling: the Al–Mg–Si alloy \$\beta\$ phase](#)", *Materials Science Forum: ICAA14*, **794-796**, 640-645, 2014.
2. J. **Holmestad**, M. Ervik, C. D. **Marioara** and J. C. **Walmsley**, "[Investigation of grain boundaries in an Al-Mg-Si-Cu Alloy](#)", *Materials Science Forum: ICAA14*, **794-796**, 951-956, 2014.
3. M. Liu, C. D. **Marioara**, R. **Holmestad** and J. Banhart, "[Ageing Characteristics of Al-Mg-\(Ge,Si\)-Cu Alloys](#)", *Materials Science Forum: ICAA14*, **794-796**, 971-976, 2014.
4. A. M. F. **Muggerud**, Y. **Li** and R. **Holmestad**, "[Orientation studies of \$\alpha\$ -Al\(Fe,Mn\)Si dispersoids in xxx Al alloys](#)", *Materials Science Forum: ICAA14*, **794-796**, 39-44, 2014.
5. E. A. **Mørtzell**, I. Westermann, C. D. **Marioara**, K. O. Pedersen, S. J. **Andersen**, J. Røyset and R. **Holmestad**, "[The effect of elastic straining on a 6060 Aluminium](#)

- [alloy during natural or artificial ageing](#)", *Materials Science Forum: ICAA14*, **794-796**, 1205-1210, 2014.
6. T. **Saito**, C. D. **Marioara**, J. Røyset and R. **Holmestad**, "[Effect of low Cu addition and thermo-mechanical history on precipitation in Al-Mg-Si alloys](#)", *Materials Science Forum: ICAA14*, **1014-1019**, 1014-1019, 2014.
 7. S. **Wenner**, C. D. **Marioara**, W. Lefebvre, Q. M. Ramasse, D.-M. Kepaptsoglou, F. S. Hage and R. **Holmestad**, "[Atomic-resolution elemental mapping of precipitates in a 7449 aluminium alloy](#)", *Materials Science Forum: ICAA14*, **794-796**, 63-67, 2014.

Doctoral Theses in the group

1. T. **Saito**, "The effect of trace elements on precipitation in Al-Mg-Si alloys - A transmission electron microscopy study", *Doctoral Thesis*, June 2014.
2. S. **Wenner**, "Transmission electron microscopy and muon spin relaxation studies of precipitation in Al-Mg-Si alloys", *Doctoral Thesis*, January 2014.

Master Theses/Projects in the group

1. **Ørjan Berntsen**, 2014, "Investigation of $\text{Co}_2\text{AlO}_4/\text{CeO}_2$ Catalyst for N_2O Abatement using Electron Microscopy Techniques".
2. **Maximilian Erbeck**, 2014, "Probing the electronic properties of p-doped gallium arsenide nanowires".
3. **Hanne Grydeland**, 2014, "Characterization of Bioaerosols using Electron Microscopy with Special Emphasis on Airborne Bacteria", external work at FFI.
4. **Trond R. Henninen**, 2014, "Characterization of CVD grown graphene" (preliminary title).
5. **Julie Stene Nilsen**, 2014, "Position controlled growth of GaAs/AlGaAs core-shell nanowires - more uniform structural and optical properties?".
6. **Eivind Seim**, 2014, "TEM characterization of Cr-doped ZnS Thin Films for Solar Cell applications".
7. **Espen Undheim**, 2014, "Transmission electron microscopy characterization of quantum dot based intermediate band solar cells".