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## Laboratory for Joining Technologies & Corrosion

### Publications 2016

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- G. Larrazábal, A. J. Martín, F. Krumeich, R. Hauert, J. Pérez-Ramírez, *Solvothermally-Prepared Cu<sub>2</sub>O Electrocatalysts for CO<sub>2</sub> Reduction with Tunable Selectivity by the Introduction of p-Block Elements*, **ChemSusChem** (2016) 1864-5631 [DOI: [10.1002/cssc.201601578](https://doi.org/10.1002/cssc.201601578)].
- C. Kenel, *Development of Oxide Dispersion Strengthened Titanium Aluminides for Additive Manufacturing*, **Doctoral Thesis**, ETH Zürich, 2016 [[Source](#)].
- T. Geldmacher, *Surface functionalizing/properties of supersaturated Al-Si alloy layers*, **Master Thesis**, ETH Zürich, 2016 [[Source](#)].
- C. Cancellieri, F. Moszner, M. Chiodi, S. Yoon, J. Janczak-Rusch, L.P.H. Jeurgens, *The effect of thermal treatment on the stress state and evolving microstructure of Cu/W nano-multilayers*, **Journal of Applied Physics** 120 (2016) 195107 [DOI: [10.1063/1.4967992](https://doi.org/10.1063/1.4967992)].
- C. Leinenbach, N. Weyrich, M. Stacher, K.W. Richter, *Reactive phase formation and isothermal solidification in the Ni/Au-18.6Si/Ni layer system*, **Journal of Alloys and Compounds** 687 (2016) 7-16 [DOI: [10.1016/j.jallcom.2016.06.102](https://doi.org/10.1016/j.jallcom.2016.06.102)].
- G. O. Larrazábal, A. J. Martín, S. Mitchell, R. Hauert, J. Pérez-Ramírez, *Enhanced Reduction of CO<sub>2</sub> to CO over Cu-In Electrocatalysts: Catalyst Evolution Is the Key*, **ACS Catalysis** 6 (2016) 6265-6274 [DOI: [10.1021/acscatal.6b02067](https://doi.org/10.1021/acscatal.6b02067)].
- M. Senn, H.J. Leber, M. Tuchschnid, N. Rizvic, *Blechblasinstrumentenbau in Frankreich im 19. Jahrhundert. Analysen von Legierung und Struktur des Messings zugunsten eines historisch informierten Instrumentenbaus*. **Romantic Brass. Französische Hornpraxis und historisch informierter Blechblasinstrumentenbau**. Symposium 2, Hrsg. von D. Allenbach, A. v. Steiger, M. Skamletz, Schliengen (Musikforschung der Hochschule der Künste Bern, Bd. 6, Ed. Argus) (2016) 398-419 [[Source](#)].
- L. Huber, P. Ruch, R. Hauert, S. K. Matam, G. Saucke, S. Yoon, Y. Zhang, M. M. Koebel, *Water sorption behavior of physically and chemically activated monolithic nitrogen doped carbon for adsorption cooling*, **RSC Advances** 6 (2016) 80729-80738 [DOI: [10.1039/c6ra18660b](https://doi.org/10.1039/c6ra18660b)].
- G. Kaptay, J. Janczak-Rusch, L.P.H. Jeurgens, *Melting point depression and fast diffusion in nano-structured brazing fillers confined between barrier nanolayers*, **Journal of Materials Engineering and Performance** 25 (2016) 3275-3284 [DOI: [10.1007/s11665-016-2123-3](https://doi.org/10.1007/s11665-016-2123-3)].
- Y. Tao, R. Hauert, C.L. Degen, *Exclusively Gas-Phase Passivation of Native Oxide-Free Silicon(100) and Silicon(111) Surfaces*, **ACS Applied Material Interfaces** 8 (2016) 13157-13165 [DOI: [10.1021/acscami.6b03326](https://doi.org/10.1021/acscami.6b03326)].
- M. Chiodi, C. Cancellieri, F. Moszner, M. Andrzejczuk, J. Janczak-Rusch, L.P.H. Jeurgens, *Massive Ag migration through metal/ceramic nano-multilayers: interplay between temperature, stress-relaxation and oxygen enhanced mass transport*, **Journal of Materials Chemistry C** (2016) 4927-4938 [DOI: [10.1039/C6TC01098A](https://doi.org/10.1039/C6TC01098A)].
- J. Janczak-Rusch, *Im Wettlauf gegen die höchsten Produktanforderungen*, **Schweisstechnik/Soudure** 4 (2016) 8-17 [[Source](#)].
- A. Lis, C. Kenel, C. Leinenbach, *Characteristics of Reactive Ni<sub>3</sub>Sn<sub>4</sub> Formation and Growth in Ni-Sn Interlayer Systems*, **Metallurgical and Materials Transactions A** 47 (2016) 2596-2608 [DOI: [10.1007/s11661-016-3444-4](https://doi.org/10.1007/s11661-016-3444-4)].
- R. Lin, A. P. Amrute, F. Krumeich, K. Lázár, R. Hauert, M. Yulikov, J. Pérez-Ramírez, *Phase-controlled synthesis of iron phosphates via phosphation of β-FeOOH nanorods*, **CrystEngComm** 18 (2016) 3174-3185 [DOI: [10.1039/c6ce00501b](https://doi.org/10.1039/c6ce00501b)].

- O. Martin, A. J. Martin, C. Mondelli, S. Mitchell, T.F. Segawa, R. Hauert, Ch. Drouilly, D. Curulla-Ferré, J. Pérez-Ramírez, *Indium Oxide as a Superior Catalyst for Methanol Synthesis by CO<sub>2</sub> Hydrogenation*, **Angewandte Chemie International Edition** 55 (2016) 1-6 [DOI: [10.1002/anie.201600943](https://doi.org/10.1002/anie.201600943)].
- M. Akbaria, S. Buhl, C. Leinenbach, K. Wegener, *A new value for Johnson Cook damage limit criterion in machining with large negative rake angle as basis for understanding of grinding*, **Journal of Materials Processing Technology** 234 (2016) 58–71 [DOI: [10.1016/j.jmatprotec.2016.03.009](https://doi.org/10.1016/j.jmatprotec.2016.03.009)].
- L. Huber, P. Ruch, R. Hauert, G. Saucke, S.K. Matam, B. Michel, M.M. Koebel, *Monolithic nitrogen-doped carbon as a water sorbent for high-performance adsorption cooling*, **RSC Advances** 6 (2016) 25267-25278 [DOI: [10.1039/c6ra00548a](https://doi.org/10.1039/c6ra00548a)].
- F. Moszner, C. Cancellieri, M. Chiodi, S. Yoon, D. Ariosa, J. Janczak-Rusch, L.P.H. Jeurgens, *Thermal stability of Cu/W nano-multilayers*, **Acta Materialia** 107 (2016) 345-353 [DOI: [10.1016/j.actamat.2016.02.003](https://doi.org/10.1016/j.actamat.2016.02.003)].
- S. Peli, E. Cavaliere, G. Benetti, M. Gandolfi, M. Chiodi, C. Cancellieri, C. Giannetti, G. Ferrini, L. Gavioli, F. Banfi, *Mechanical Properties of Ag Nanoparticle Thin Films Synthesized by Supersonic Cluster Beam Deposition*, **Journal of Physical Chemistry C** 120 (2016) 4673–4681 [DOI: [10.1021/acs.jpcc.6b00160](https://doi.org/10.1021/acs.jpcc.6b00160)].
- C. Cancellieri, A.S. Mishchenko, U. Aschauer, A. Filippetti, C. Faber, O.S. Barišić, V.A. Rogalev, T. Schmitt, N. Nagaosa, V.N. Strocov, *Polaronic metal state at the LaAlO<sub>3</sub>/SrTiO<sub>3</sub> interface*, **Nature Communications** 7 (2016) 1-7 [DOI: [10.1038/ncomms10386](https://doi.org/10.1038/ncomms10386)].
- C. Kenel, P. Schloth, S. Van Petegem, J.L. Fife, D. Grolimund, A. Menzel, H. Van Swygenhofen, C. Leinenbach, *In Situ Synchrotron X-Ray Diffraction and Small Angle X-Ray Scattering Studies on Rapidly Heated and Cooled Ti-Al and Al-Cu-Mg Alloys Using Laser-Based Heating*, **JOM** 68 (2016) 978-984 [DOI: [10.1007/s11837-015-1774-0](https://doi.org/10.1007/s11837-015-1774-0)].
- T. Wang, T. Ivas, W. Lee, C. Leinenbach, J. Zhang, *Relief of the residual stresses in Si<sub>3</sub>N<sub>4</sub>/Invar joints by multi-layered braze structure – Experiments and simulation*, **Ceramics International** 42 (2016) 7080-7087 [DOI: [10.1016/j.ceramint.2016.01.096](https://doi.org/10.1016/j.ceramint.2016.01.096)].
- G. O. Larrazábal, A. J. Martín, S. Mitchell, R. Hauert, J. Pérez-Ramírez, *Synergistic effects in silver–indium electrocatalysts for carbon dioxide reduction*, **Journal of Catalysis** (2016) in press [DOI: [10.1016/j.jcat.2015.12.014](https://doi.org/10.1016/j.jcat.2015.12.014)].
- C. Kenel, D. Grolimund, J.L. Fife, V.A. Samson, S. Van Petegem, H. Van Swygenhoven, C. Leinenbach, *Combined in situ synchrotron micro X-ray diffraction and high-speed imaging on rapidly heated and solidified Ti–48Al under additive manufacturing conditions*, **Scripta Materialia** 114 (2016) 117–120 [DOI: [10.1016/j.scriptamat.2015.12.009](https://doi.org/10.1016/j.scriptamat.2015.12.009)].
- K. Weller, T. Suter, Z.M. Wang, L.P.H. Jeurgens, E.J. Mittemeijer, *The effect of pre-oxidation treatment on the corrosion behavior of amorphous Al<sub>1-x</sub>Zr<sub>x</sub> solid-solution alloys*, **Electrochimica Acta** 188 (2016) 31–39 [DOI: [10.1016/j.electacta.2015.11.066](https://doi.org/10.1016/j.electacta.2015.11.066)].
- A. Vetushka, L. Bernard, O. Guseva, Z. Bastl, J. Plocek, I. Tomandl, A. Fejfar, T. Base, P. Schmutz, *Adsorption of oriented carborane dipoles on a silver surface*, **Physica Status Solidi B** 253 (2016) 591–600 [DOI: [10.1002/pssb.201552446](https://doi.org/10.1002/pssb.201552446)].
- C. Kenel, C. Leinenbach, *Influence of Nb and Mo on microstructure formation of rapidly solidified ternary Ti–Al–(Nb, Mo) alloys*, **Intermetallics** 69 (2016) 82-89 [DOI: [10.1016/j.intermet.2015.10.018](https://doi.org/10.1016/j.intermet.2015.10.018)].
- T. Wang, C. Liu, C. Leinenbach, J. Zhang, *Microstructure and strengthening mechanism of Si<sub>3</sub>N<sub>4</sub>/Invar joint brazed with TiN<sub>p</sub>-doped filler*, **Materials Science & Engineering A** 650 (2016) 469–477 [DOI: [10.1016/j.msea.2015.10.038](https://doi.org/10.1016/j.msea.2015.10.038)].
- K. Weller, Z.M. Wang, L.P.H. Jeurgens, E.J. Mittemeijer, *Oxidation kinetics of amorphous Al<sub>x</sub>Zr<sub>1-x</sub> alloys*, **Acta Materialia** 103 (2016) 311-321 [DOI: [10.1016/j.actamat.2015.09.039](https://doi.org/10.1016/j.actamat.2015.09.039)].

- M. Koster, A. Lis, W.J. Lee, C. Kenel, C. Leinenbach, *Influence of elastic–plastic base material properties on the fatigue and cyclic deformation behavior of brazed steel joints*, **International Journal of Fatigue** 82 (2016) 49–59 [DOI: [10.1016/j.ijfatigue.2015.07.029](https://doi.org/10.1016/j.ijfatigue.2015.07.029)].
- F. Moszner, C. Cancellieri, C. Becker, M. Chiodi, J. Janczak-Rusch, L.P.H. Jeurgens, *Nano-Structured Cu/W Brazing Fillers for Advanced Joining Applications*, **Journal of Materials Science and Engineering B** 6 (2016) 226-230 [DOI: [10.17265/2161-6221/2016.9-10.003](https://doi.org/10.17265/2161-6221/2016.9-10.003)].