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Publications 2020-1986

2020

"Real and Q space traveling: multi-dimensional distribution maps of strain (ϵ_{044}) and crystal lattice tilt of suspended monolithic silicon nanowire structures" S. Dolabella, R. Frison, G. A. Chahine, C. Richter, T. Schulli, Z. Tasdemir, E. Alaca, Y. Leblebici, A. Dommann, A. Neels;
J. Appl. Crystallography, J. Appl. Cryst. (2020). 53; <https://doi.org/10.1107/S1600576719015504>

"Bone mineral density, mechanical properties and trabecular orientation of cancellous bone within humeral head affected from glenohumeral osteoarthritis" V. Zdravkovic, R. Kaufmann, A. Neels, A. Dommann, J. Hofmann, B. Jost;
J Orthop Res. 2020 Feb 19. doi: 10.1002/jor.24633

"Nylon-6/chitosan core/shell antimicrobial nanofibers for the prevention of mesh-associated surgical site infection" A. Keirouz, N. Radacsi, Q. Ren, A. Dommann, G. Beldi, K. Maniura, R. Rossi, G. Fortunato, Journal of Nanobiotechnology 2020, 18(1):1-17

"Polarimetric imaging in backscattering for the structural characterization of strongly scattering birefringent fibrous media", A. Jain, A. K. Maurya, L. Ulrich, R. Rossi, A. Neels, P. Schucht, A. Dommann, M. Frenz, H. G. Akarçay, Optics Express 2020, 28(11)

"A new approach for time-resolved and dynamic investigations on nanoparticles agglomeration" N. Iranpour Anaraki, A. Sadeghpour, K. Iranshahi, C. Toncelli, U. Cendrowska, F. Stellacci, A. Dommann, P. Wick, A. Neels
Nano Research 2020, 13(10)

"Responsive Nanofibers with Embedded Hierarchical Lipid Self-Assemblies"
N. D. Tien, A. K. Maurya, G. Fortunato, M. Rottmar, R. Zboray, R. Erni, A. Dommann, R. M. Rossi, A. Neels, A. Sadeghpour
Langmuir 2020, 36(40)

"New insights into osteointegration and delamination from a multidisciplinary investigation of a failed hydroxyapatite-coated hip joint replacement"
F. Schönweger, C. M. Sprecher, S. Milz, C. Dommann-Scherrer, C. Meier, A. Dommann, A. Neels, P. Wahl
Materials 2020, 13(21):4713

2019

"Nano-analytical Characterization of Endogenous Minerals in Healthy Placental Tissue: Mineral Distribution, Composition and Ultrastructure" Alexandre H.C. Anthis, Elena Tsolaki, Louis Didierlaurent, Samuel Staubli, Robert Zboray, Antonia Neels, Dörthe Dietrich, Pius Manser, Lotus May Desbiolles, Sebastian Leschka, Simon Wildermuth, Sandro Lehner, Pascale Chavette-Palmer, Wolfram Jochum, Peter Wick, Alex Dommann, Tina Bürki-Turnherr, Tina Fischer, René Hornung, Sergio Bertazzo, Inge K. Herrmann* (2019) Analyst, <https://doi.org/10.1039/C9AN01312A>.

"Polymer membranes sonocoated and electrosprayed with nano-hydroxyapatite for periodontal tissues regeneration" Julia Higuchi, Giuseppino Fortunato, Bartosz Woźniak, Agnieszka Chodara, Sebastian Domaschke, Sylwia Męczyńska-Wielgosz, Marcin Kruszewski, Alex Dommann, Witold Łojkowski (2019) Nanomaterials, 9(11), 1625 (24 pp.).

"Surface tension and viscosity of liquid Pd₄₃Cu₂₇Ni₁₀P₂₀ measured in a levitation device under microgravity" Mohr M, Wunderlich RK, Zweiacker K, Prades-Rödel S, Sauget R, Blatter A, Logé R, Dommann A, Neels A, Johnson WL & Fecht H-J (2019) NPJ Microgravity, 5 (1), 4 (8pp.).

Professor Dr. Alex Dommann

Publications 2020-1986

"Structural insights into semicrystalline states of electrospun nanofibers: a multiscale analytical approach" Maurya AK, Weidenbacher L, Spano F, Fortunato G, Rossi RM, Frenz M, Dommann A, Neels A & Sadeghpour A (2019) *Nanoscale*.

"The formation of a homogeneous α -alumina coating on a Ni-based superalloy from a layer stack deposited by cathodic arc evaporation" Ast J, Balogh-Michels Z, Döbeli M, Dommann A, Gindrat M, Maeder X, Neels A, Polyakov MN, Rudigier H, Widrig B & Ramm J (2019) *Surface and Coatings Technology*, 360, 329-334.

2018

"In situ XRD experiments on the growth of expanded austenite using different process gases" Balogh-Michels, Z., Faeht, A., Kleiner, S., Margraf, P., Dommann, A., & Neels, A. (2018) *Defect and Diffusion Forum*, 383, 142-146.

2017

"Synthesis and Characterization of Superalloy Coatings by Cathodic Arc Evaporation" J. Ast, M. Döbeli, A. Dommann, M. Gindrat, X. Maeder, A. Neels, P. Polcik, M. N Polyakov, H. Rudigier, K. D von Allmen, B. Widrig, *Surface and Coatings Technology* 327 (2017) 139–145.

"High diffusion barrier and piezoelectric nanocomposites based on polyvinylidene fluoride-trifluoroethylene copolymer and hydrophobized clay" S. Dalle Vacche, F. Oliveira, A. Neels, O. Sereda, A. Dommann, D. Damjanovic, Y. Leterrier, *Journal of Polymer Science, Part B: Polymer Physics*, 2017, 55, 1828–1836. DOI: 10.1002/polb.24432.

"In-situ kinetics study on the growth of expanded austenite in AISI 316L stainless steels by XRD" Z. Balogh-Michels, A. Faeht, S. Kleiner, A. von Känel, J.-M. Rufer, A. Dommann, P. Margraf, G. Tschopp, A. Neels, *Journal of Applied Physics*, 122(2),025111.

"The growth kinetics and the structure of expanded austenite in AISI316L stainless steels characterized by in-situ XRD" Z. Balogh-Michels, A. Faeht, S. Kleiner J.-M. Rufer, A. Dommann, P. Margraf, and A. Neels, *Z. Kristllogr. Cryst. Mater.* 2017

"In situ MEMS testing: correlation of high-resolution X-ray diffraction with mechanical experiments and finite element analysis" A. Schifferle, A. Dommann, A. Neels, *Science and Technology of Advanced Materials* (2017) 18(1), 219–230. <http://dx.doi.org/10.1080/14686996.2017.1282800>.

"Comparison of in-situ oxide formation and post-deposition high temperature oxidation of Ni-aluminides synthesized by cathodic arc evaporation" X. Maeder, A. Neels, M. Döbeli, A. Dommann, H. Rudigier, B. Widrig, J. Ramm, *Surface and Coatings Technology*, Volume 309, 15 January 2017, Pages 516-522.

2016

"X-ray studies on polymers and composites: the combination of 2D WAXS, SAXS and X-ray imaging techniques" A. Neels, R. Kaufmann, M. Bauer, S. Dalle Vacche, Y. Leterrier, A. Dommann, *Acta Cryst.* (2016). A72, s139.

"HRXRD analysis of bonded Si / Si interfaces" Z. Balogh-Michels, K. Zweiacker, Y. Zhang, A. Jung, Ch. Flötgen, G. Chahine, A. Dommann, R. Erni, H. von Känel, A. Neels, *Acta Cryst.* (2016). A72, s299-s300.

"Elastic and Plastic Stress Relaxation in Highly Mismatched SiGe/Si Crystals" F. Isa, A. Jung, M. Salvalaglio, Y. Dasilva, M. Meduña, M. Barget, T. Kreiliger, G. Isella, R. Erni, F. Pezzoli, E. Bonera, P. Niedermann, K. Zweiacker, A. Neels, A. Dommann, P. Gröning, F. Montalenti and H. v. Känel, *MRS Advances*, May 2016, pp 1 – 6.

Professor Dr. Alex Dommann

Publications 2020-1986

"Where is the limit? Yield strength improvement in silicon micro-structures by surface treatments" A. Schifferle, T. Bandi, A. Neels, A. Dommann, *Phys. Status Solidi A* 213, 2016, 102–107 / DOI 10.1002/pssa.201532444.

"Lattice bending in three-dimensional Ge microcrystals studied by X-ray nanodiffraction and modelling" M. Meduňa, C.V. Falu, F. Isa, A. Marzegalli, D. Chrastina, G. Isella, L. Miglio, A. Dommann, H. von Känel, *Journal of Applied Crystallography*, Volume 49, 2016, Pages 976-986.

"Silicon etch with chromium ions generated by a filtered or non-filtered cathodic arc discharge" D. Scopece, M. Döbeli, D. Passerone, X. Maeder, A. Neels, B. Widrig, A. Dommann, U. Müller, J. Ramm, *Sci. Technol. Adv. Mater.*, 2016, 17, 20-28 / DOI 10.1080/14686996.2016.1140308.

2015

"Spannungsanalyse und Versagen von MEMS-Strukturen" A. Dommann, A. Neels, *Metallographie, Proceedings*, p. 51-55, 16-18 September 2015, Dresden, Germany.

"Advanced X-ray Analytics for Composite Materials" A. Neels, R. Kaufmann, A. Dommann, *Thermosets 2015 - From Monomers to Components*, p. 153-155, 16-18 September 2015, Berlin, Germany.

2014

"Evaluation of silicon tuning-fork resonators under mechanical loads and space-relevant radiation conditions" T. Bandi, J. Baborowski, A. Dommann, H. Shea, F. Cardot, A. Neels *Journal of Micro/Nanolithography, MEMS, and MOEMS*, 13(4), 043019.

"Phase formation in cathodic arc synthesized Al-Hf and Al-Hf-O coatings during high temperature annealing in ambient air" X. Maeder, M. Döbeli, A. Dommann, A. Neels, H. Rudigier, B. Widrig, J. Ramm, (2014) *Surface and Coatings Technology*, DOI: 10.1016/j.surfcoat.2014.07.095, 2014; 260:56-62.

"Surface layer evolution caused by the bombardment with ionized metal vapor" Döbeli, M. Dommann, A. Maeder, X. Neels, A. Passerone, D. Rudigier, H. Scopece, D. Widrig, B. Ramm, J. (2014) *Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms*, 332:337-340.

"X-ray source downscaling enabled by combining microfabricated electrodes with carbon nanotube cold electron emitters" Kottler, C. Longtin, R. Giudice, S. Jose-James, R. Niedermann, P. Neels, A. Kaufmann, R. Sanchez-Valencia, J.R. Elsener, H.R. Gröning, O. Leinenbach, C. Gröning, P. Dommann, A. (2014) *Microelectronic Engineering, Microelectronic Engineering*, 122,13-19.

"3D heteroepitaxy of mismatched semiconductors on silicon" C.V. Falub, T. Kreiliger, F. Isa, A. G. Taboada, M. Meduňa, F. Pezzoli, R. Bergamaschini, A. Marzegalli, E. Müller, D. Chrastina, G. Isella, A. Neels, P. Niedermann, A. Dommann, L. Miglio, H. Von Känel, (2014) *Thin Solid Films*, 557, 42-49.

"Process influences on the structure, piezoelectric, and gas-barrier properties of PVDF-TrFE copolymer" F. Oliveira, Y. Leterrier, O. Sereda, A. Neels, A. Dommann, D. Damjanovic, (2014) *Journal of Polymer Science, Part B: Polymer Physics*, 52, 496–506.

"Strain relaxation of GaAs/Ge crystals on patterned Si substrates" A. G. Taboada, T. Kreiliger, C. V. Falub, F. Isa, M. Salvalaglio, L. Wewior, D. Fuster, M. Richter, U. Uccelli, P. Niedermann, A. Neels, F. Mancarella, B. Alén, L. Miglio, A. Dommann, G. Isella, (2014) *Applied Physics Letters*, 104, 022112.

"Improved test setup for MEMS mechanical strength investigations and fabrication process qualification" T. Bandi, X. Maeder, A. Dommann, H. Shea, A. Neels, (2014) *Proc. SPIE 8975, Reliability, Packaging, Testing, and Characterization of MOEMS/MEMS, Nanodevices, and Nanomaterials XIII*, 897509, doi: 10.1117/12.2044212.

Professor Dr. Alex Dommann

Publications 2020-1986

"High aspect ratio, Large area silicon-based gratings for X-ray phase contrast imaging" J. Baborowski, V. Revol, C. Kottler, R. Kaufmann, P. Niedermann, F. Cardot, A. Dommann, A. Neels, M. Despont, (2014) Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 490 – 493.

"Evaluation of silicon tuning-fork resonators under space-relevant radiation conditions" T. Bandi, J. Baborowski, A. Dommann, H. Shea, F. Cardot, A. Neels, (2014) Proc. SPIE 8975, Reliability, Packaging, Testing, and Characterization of MOEMS/MEMS, Nanodevices, and Nanomaterials XIII, 89750I, doi: 10.1117/12.2044209.

"Epitaxial Ge-crystal arrays for X-ray detection" T. Kreiliger, C. Falub, F. Isa, G. Isella, D. Chrastina, R. Bergamaschini, A. Marzegalli, R. Kaufmann, P. Niedermann, A. Neels, E. Müller, M. Meduña, A. Dommann, L. Miglio, H.V. Känel, (2014) Journal of Instrumentation, Journal of Instrumentation, 9.

"High piezoelectric longitudinal coefficients in sol-gel PZT thin film multilayers" D. Balma, A. Mazzalai, N. Chidambaram, C.S. Sandu, A. Neels, A. Dommann, P. Hess, D. Binz, P. Mural, (2014) Journal of the American Ceramic Society, Journal of the American Ceramic Society, 97, 2069–2075.

"New directions in X-ray Tomography" Kaufmann, R., Flisch, A., Griffa, M., Hartmann, S., Hofmann, J., Jerjen, I., ... Dommann, A. (2014). In Proceedings of the 11th European Conference on Non-Destructive Testing (ECNDT 2014) (p. 5 pp.). Prague, Czech Republic.

"Individual heterojunctions of 3D germanium crystals on silicon CMOS for monolithically integrated X-ray detectors" T. Kreiliger, C. V. Falub, A. G. Taboada, F. Isa, S. Cecchi, R. Kaufmann, P. Niedermann, A. Pezous, S. Mouaziz, A. Dommann, G. Isella, and H. von Känel, Phys. Status Solidi A 211, 131–135 (2014).

Three-dimensional epitaxial Si_{1-x}Ge_x, Ge and SiC crystals on deeply patterned Si substrates. Von Känel, H., Isa, F., Falub, C. V., Barthazy, E. J., Müller, E., Chrastina, D., ... Miglio, L. In D. Harame, M. Caymax, M. Heyns, G. Masini, S. Miyazaki, G. Niu, ... J. Murota (Eds.), SiGe, Ge, and related compounds 6: materials, processing, and devices (Vol. 64, pp. 631-648). Cancun, Mexico: The Electrochemical Society. <http://doi.org/10.1149/06406.0631ecst>.

2013

"Proton-radiation tolerance of silicon and SU-8 as structural materials for high-reliability MEMS" T. Bandi, J. Polido-Gomes, A. Neels, A. Dommann, L. Marchand, H. R. Shea, (2013) Journal of Microelectromechanical Systems, 22(6), 1395 - 1402.

"Phase contrast and X-ray dark field imaging: New possibilities for non-destructive testing of materials and components" C. Kottler, M. Krieger, V. Revol, R. Kaufmann, A. Konrad, A. Neels, A. Dommann, (2013) European cells & materials, 26(1),10.

"Analysis of stress in silicon-based microsystems by X-ray diffraction techniques" T. Bandi, A. Dommann, A. Neels, (2013) EMPC 2013 - European Microelectronics Packaging Conference (EMPC), 1-4.

"DIVIDE ET IMPERA - IN DETECTOR TECHNOLOGY A promising integration strategy of pixelated films on Si by epitaxial self-assembly" L. Migli, R. Bergamaschini, A. Marzegalli, F. Isa, D. Chrastina, G. Isella, P. Niedermann, A. Dommann, C. V. Falub, E. Müller, H. von Känel, Scienza in Primo Piano 29 (2013) 7-14.

"Heterointegration by molecular beam epitaxy: (In,Ga)As/GaAs quantum wells on GaAs, Ge, Ge/Si and Ge/Si pillars." M. Richter, E.Uccelli, A.G.Taboada, D.Caimi, N.Daix, M.Sousa, C.Marchiori, H. Siegwart, C.V.Falub, H.vonKänel, F.Isa, G.Isella, A.Pezous, A.Dommannd, P. Niedermann, J.Fompeyrine, Journal of Crystal Growth 378 (2013) 109–112.

"Perfect crystals grown from imperfect interfaces" C. V. Falub, M. Meduna, D. Chrastina, Fabio Isa, A. Marzegalli, T. Kreiliger, A. G. Taboada, G. Isella, L. Miglio, A. Dommann & H. von Känel, SCIENTIFIC REPORTS 3 : 2276, DOI: 10.1038/srep02276.

Professor Dr. Alex Dommann

Publications 2020-1986

"Making MEMS more suited for Space: assessing the proton-radiation tolerance of structural materials for microsystems in orbit" T. Bandi; J. Gomes; A. Neels, A. Dommann; H. R. Shea, Proc. SPIE 8614: Reliability, Packaging, Testing, and Characterization of MOEMS/MEMS and Nanodevices XII, March 2013; DOI: 10.1117/12.2004705.

"Integration of GaAs on Ge/Si towers by MOVPE" A. G. Taboada, T. Kreiliger, C. V. Falub, M. Richter, F. Isa, E. Muller, E. Uccelli, P. Niedermann, A. Neels, G. J. Isella, J. Fompeyrine, A. Dommann, H. von Känel, (2013) MRS Proceedings 1538, opl.2013.842.

"Factors controlling the incubation in the application of PS laser pulses on copper and iron surfaces" B. Neuenschwander, B. Jaeggi, M. C. Schmid, A. Dommann, A. Neels, T. Bandi, G. Hennig, Proc. SPIE 8607: Laser Applications in Microelectronic and Optoelectronic Manufacturing (LAMOM) XVIII, April 2013, DOI: 10.1117/12.2004136.

2012

"Orientation-selective X-ray dark field imaging of ordered systems" V. Revol, C. Kottler, R. Kaufmann, A. Neels, A. Dommann, (2012) J. Appl. Phys., 112, 14903-14903.

"Three-Dimensional Heteroepitaxy: A New Path for Monolithically Integrating Mismatched Materials with Silicon" C.V. Falub, T. Kreiliger, A.G. Taboada, F. Isa, D. Chrastina, G. Isella, E. Müller, M. Meduna, R. Bergamaschini, A. Marzegalli, E. Bonera, F. Pezzoli, L. Miglio, P. Niedermann, A. Neels, A. Pezous, R. Kaufmann, A. Dommann, H. von Känel (2012) IEEE Proc. Int. Semicond. Conf., Vol. 1, pp. 45-50, doi: 10.1109/SMICND.2012.6400698.

2011

"X-ray strain measurements in strained silicon devices" A. Dommann, A. Neels (2011) AIP Conference Proceedings, 1378, 131-137.

"Near infrared image sensor with integrated germanium photodiodes" R. Kaufmann, G. Isella, A. Sanchez-Amores, S. Neukom, A. Neels, L. Neumann, A. Brenzikofer, A. Dommann, C. Urban, H. Von Känel (2011) Journal of Applied Physics, 110, art. no. 023107.

"Reliability of MEMS" A. Dommann, A. Neels (2011) Proceedings of SPIE - The International Society for Optical Engineering, 7928, art. no. 79280B.

"Formation of cubic zirconia by reactive arc evaporation in a mixture of nitrogen-oxygen reactive gas" A. Neels, L. Vieira, M. Döbeli, A. Dommann, J. Herrán, F. Neff, B. Widrig, J. Ramm, (2011) Advanced Engineering Materials, 13, 87-92.

2010

"Advanced in- and out-of plane high resolution X-ray strain analysis on MEMS" A. Neels, A. Dommann, Nanotech Conference & Expo 2010: An Interdisciplinary Integrative Forum on Nanotechnology, Biotechnology and Microtechnology, Anaheim, CA, United States, June 21-24, 2010, 2, 182-185.

"In-situ MEMS testing" A. Schifferle, A. Dommann, A. Neels, E. Mazza, Nanotech Conference & Expo 2010: An Interdisciplinary Integrative Forum on Nanotechnology, Biotechnology and Microtechnology, Anaheim, CA, United States, June 21-24, 2010, 2, 165-168.

"Combined testing for MEMS characterization" A. Schifferle, A. Neels, O. Papes, A. Dommann, E. Mazza, Procedia Engineering 5, Proc. Eurosensors XXIV, 2010, 878-881.

"Approaches to influence the microstructure and the properties of Al-Cr-O layers synthesized by cathodic arc evaporation" L. A. Vieira, M. Doebeli, A. Dommann, E. Kalchbrenner, A. Neels, J. Ramm, H. Rudigier, J. Thomas, B. Widrig, Surface and Coatings Technology, 2010, 204, 1722-1728.

Professor Dr. Alex Dommann

Publications 2020-1986

2009

"Aging of MEMS – Correlation of Mechanical and Structural Properties" A. Neels, G. Bourban, H. Shea, A. Schifferle, E. Mazza, A. Dommann, *Procedia Chemistry* 2009, 1, 820–823; doi:10.1016/j.proche.2009.07.204.

"CSEM focusses on the challenges of integrating MEMS Sensors in Demanding, Real World Environments" A. Neels, N. de Rooij, A. Dommann, G. Kotrotsios, *MST News*, 2009, 2, 42-43.

"The role of strain in new semiconductor devices" A. Dommann, A. Neels, *Advanced Engineering Materials*, 2009, 11, 275-277.

2008

"Epitaxial Si-Ge Heterostructures and Nanostructures for Optical and Electrical Applications" H. von Känel, M. Bollani, M. Bonfanti, D. Chrastina, D. Colombo, A. Dommann, M. Guzzi, G. Isella, A. Miranda, E. Müller, A. Neels, J. Osmond, B. Rössner, R. Sordan, F. Traversi, *Proceedings of the 2nd Conference on Nanostructures (NS2008)*, 2008, Iran.

"Reliability and Failure in Single Crystal Silicon MEMS Devices" A. Neels, A. Dommann, A. Schifferle, O. Papes, E. Mazza, *Microelectronics Reliability* 2008, 48, 1245-1247.

"Life time predictions through X-ray defect analysis of MEMS devices" A. Neels, P. Niedermann, A. Dommann, *Materials Science Forum* 2008, 584-586, 518-522.

2007

"MEMS Reliability and Testing" A. Dommann, G. Kotrotsios, A. Neels, *MST News*, 2007.

"Thermal stability of thin film corundum-type solid solutions of $(Al_{1-x}Cr_x)_2O_3$ synthesized under low temperature non equilibrium conditions" J. Ramm, M. Ante, H. Brändle, A. Neels, A. Dommann, M. Döbeli, *Advanced Engineering Materials*, 2007, 9, 604-608.

2006

"Laser trimming of amorphous Ta₄₂Si₁₃N₄₅ thin films with ultrashort pulses" M. Meier, D. Betsch, N. Onda, M. Etter, M. Gutsche, A. Dommann, V. Romano and M.-A. Nicolet. *Microelectronic Engineering* 83 (2006), 2234-2237.

"Oxygen impurity sequestering in amorphous Zr-Al-Ni-Cu-Ti alloys by scandium" AJ Perry, AA. Kündig, M. Höland and A. Dommann. *Materials Science and Engineering A* 417 (2006), 294-298.

2005

"Microstructure formation and surface properties of a rhenanite-type glass-ceramic containing 6.0 wt% P₂O₅" M. Höland, A. Dommann, W. Höland, E. Apel and V. Rheinberger, *Glass Sci. Technol.* 78 (2005), No4, 153-158.

"ZnO for thin film BAW devices" J. Molarius*, A. Nurmela, T. Pensala, M. Ylilampi and A. Dommann. *IEEE International Ultrasonics Symposium, Conference, Proceedings, Rotterdam, The Netherlands*, 18-21. September 2005.

"Recent Developments of New Materials with Respect to Microsystem Technologies at High Temperatures" H.-J. Fecht, A. Dommann, M. Werner, W. Kohly and W. Wondrak, *Hiltner'2005 Conference Proceedings, Paris, France*, 6.-8. September 2005.

"Antiferromagnetic three-sublattice Tb ordering in Tb₁₄Ag₅₁" P. Fischer, V. Pomjakushin, L. Keller, A. Daoud-Aladine, W. Siora, A. Dommann and F. Hulliger, *Physical Review B* 72 (2005) 134413.

2004

Professor Dr. Alex Dommann

Publications 2020-1986

"The Nano-Micro Interface: Bridging the Micro and Nano Worlds" A.Dommann, M. Cucinelli, M. Werner and M.-A. Nicolet, Amorphous Electrically Conducting Materials for Transducer Applications, Willey-VCH (2004); ISBN 3-527-30978-0, 239.

"HIGH ASPECT RATIO MICRO MECHANICAL STRUCTURES MADE OF BULK METALLIC GLASS" A.A. Kündig, A. Dommann, W.L. Johnson, P.J. Uggowitzer, .Materials Science and Engineering A. (2004)

"PRODUCTION-READY DRY CLEANING AND DEPOSITION PROCESSES FOR LOW-TEMPERATURE Si AND SiGe EPITAXY" H.M. Buschbeck, A. Erhart, Y. Goeggel, C. Rosenblad, S. Wilsche, J. Ramm, A. Dommann, M. Kummer, Applied Surface Science 224 (2004) 36-40.

2003

"PREPARATION OF HIGH ASPECT RATIO SURFACE MICROSTRUCTURES OUT OF A Zr-BASED BULK METALLIC GLASS" A.A. Kündig, M. Cucinelli, P.J. Uggowitzer, A. Dommann, Microelectronic Engineering., 67-68(2003)405.

"NOVEL PLASMA-ENHANCED GROWTH OF SiGe IN A 200 MM/300 MM SINGLE WAFER CLUSTER TOOL" G. Chabanne, A. Erhart, Y. Goeggel, C. Rosenblad, E. Turlot, S. Wilsche, J. Ramm, H. von Känel, M. Kummer, A. Dommann, , SEMI Technology Symposium: Innovations in Semiconductor Manufacturing, SEMICON/West, San Francisco, July 15, 2003.

"RECIPROCATING SILICON MICROTRIBOMETER" P. Dubois, S. van Gunten, A. Enzler, U. Lippuner, A. Dommann, N. F. de Rooij, Reability, Testing, and Characterization of MEMS/MOEMS, SPIE 4980 (2003) 163-174.

"ADVANCED X-RAY ANALYSIS TECHNIQUES TO INVESTIGATE AGING OF MICROMACHINED SILICON ACTUATORS FOR SPACE APPLICATION" A. Dommann, A.Enzler, N. Onda, Microelectronics Reliability, 43 (2003) 1099-1103.

"LOW ENERGY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION - PLASMA ENHANCED DEPOSITION OF EPITAXIAL Si AND SiGe" C. Rosenblad, M. Kummer, H.-R. Deller, T. Graf, A. Dommann, T. Hackbarth, G. Höck, E. Müller, H. von Känel, Warrendale, PA: Materials Research Society (2003), (MRS Symp. Proc. 696).

2002

"INFLUENCE OF LOW OXYGEN CONTENTS AND ALLOY REFINEMENT ON THE GLASS FORMING ABILITY OF Zr_{52.5}Cu_{17.9}Ni_{14.6}Al₁₀Ti₅" A.A. Kündig, D. Lepori, A.J. Perry, S. Rossmann, A. Blatter, A. Dommann and P.J. Uggowitzer, Materials Transactions 43 (2002), 3206-3210.

"LOW ENERGY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION" M. Kummer, C. Rosenblad, A. Dommann, T. Hackbarth, G. Höck, M. Zeuner, E. Müller, H von Känel, Materials Science and Engineering B 89 (2002), 288-295.

"ANALYSIS OF ETCHED CANTILEVERS" A. Enzler, N. Herres, A. Dommann, Microelectronics Reliability 42 (2002), 1807-1809

2001

"INTERNAL STRESSES AND LIFETIME EVALUATION OF PECVD ISOLATING LAYERS" A. Dommann, N. Herres, M. Krink, J.J. Galiano, B. Staempfli, Microsystem Technologies 7 (2001), 161.

"NANO-HARDNESS MEASUREMENTS FOR INDUSTRIAL APPLICATIONS" M. Michler and A. Dommann, Z. Metallk., 92 (2001), 1035.

Professor Dr. Alex Dommann

Publications 2020-1986

"THE SMOOTHNESS, HARDNESS AND STRESS IN TITANIUM NITRIDE FOLLOWING ARGON GAS CLUSTER ION BEAM TREATMENT" A. J. Perry, S.J. Bull, A. Dommann, M. Michler, B.P. Wood, D. Rafaja and J.N. Matossian, Surf. Coat. Technol. 140 (2001), 99.

"MATERIALS ISSUES OF SAW SENSORS FOR HIGH-TEMPERATURE APPLICATIONS" J. M. Mrosk, L. Berger, Ch. Ettel, H.-J. Fecht, G. Fischerauer and A. Dommann, IEEE Transactions on Industrial Electronics 48 (2001), 258.

2000

"THE SURFACE DAMAGE IN TITANIUM NITRIDE ASSOCIATED WITH LATERAL SPUTTERING BY ARGON CLUSTER IONS" A. J. Perry, S.J. Bull, A. Dommann, D. Rafaja, B.P. Wood and M. Michler, Surf. Coat. Technol., 133-134 (2000), 253.

"TRIPLE-CRYSTAL DIFFRACTOMETRY, X-RAY STANDING WAVE AND RECIPROCAL SPACE MAPPING STUDY OF HOMOEPITAXIAL GROWN Si LAYERS" E. Mukhamedzhanov, M. Kummer and A. Dommann, J. Phys. D: Appl. Phys. 33 (2000), 2087.

"STRUCTURAL AND ELECTRICAL CHARACTERIZATION OF Si-MODFET STRUCTURES GROWN AT HIGH RATES BY LEPECVD" C. Rosenblad, M. Kummer, E. Müller, A. Dommann and H.von Känel, Mat. Res. Soc. Symp. Proc. 587 (2000), O7.9.1.

"VIRTUAL SUBSTRATES FOR THE n- and p-type Si-MODFET GROWN AT VERY HIGH RATES" C. Rosenblad, M. Kummer, A. Dommann, E. Müller, M. Gusso, L. Tapfer and H. von Känel, Mat. Sci. Eng. B74 (2000), 113.

"A PLASMA PROCESS FOR ULTRAFAST DEPOSITION OF SiGe GRADED BUFFER LAYERS" C. Rosenblad, M. Kummer, A. Dommann, E. Müller, M. Gusso, L. Tapfer and H. von Känel, Appl. Phys. Lett. 76 (2000), 427.

"VIRTUAL SUBSTRATES FOR THE n- AND p- TYPE Si- MODFET GROWN AT VERY HIGH RATES" C. Rosenblad, M. Kummer, A. Dommann, E. Müller, M. Gusso, L. Tapfer and H. von Känel, Mat. Sci. & Eng. B 74 (2000), 113.

1999

"NEW PECVD PROCESS FOR SiGe MODFET PRODUCTION ON AN INDUSTRIAL SCALE" C. Rosenblad, M. Kummer, A. Dommann, and H. von Känel, Le Vide: science, technique et applications 291 (1999), 76.

"Neue Materialien für innovative Produkte; Entwicklungstrends und gesellschaftliche Relevanz " A.Dommann, M. Bader, H. Brändle, F. Baumgartner and J. Ramm, Wissenschaftsethik und Technikfolgenbeurteilung Band 3; Kapitel: Beschichtungen, Springer Verlag (1999); ISBN 3-540-66063-1, 183.

"ACCURATE MICROSCOPIC METHOD TO INVESTIGATE THE AGING OF PZT/SILICON HETEROMORPHOUS CANTILEVERS" N. Ledermann, P. Muralto and A. Dommann, Proc. of the 2nd International Conference on Integrated Micro- and Nanotechnology for Space Applications, Pasadena CA 1 (1999), 250.

"SIGA: A NEW HIGH ASPECT RATIO MICRO SYSTEM PROCESS" M. Gmür, A. Dommann, H. Rothuizen, R. Widmer and P. Vettiger, Proc. of the 2nd International Conference on Integrated Micro- and Nanotechnology for Space Applications, Pasadena CA 1 (1999), 267.

"WET OXIDATION OF Ta₃₄Si₂₃N₄₃" T. Kacsich, S. Gasser, Y. Tsuji, A. Dommann and M-A. Nicolet, Journal of Applied Physics 85 (1999), 1871.

1998

"EPITAXIAL GROWTH OF Si BY LOW-ENERGY DC-PLASMA CHEMICAL VAPOR" E. Mateeva, H.R. Deller, U. Kafader, C. Rosenblad, H. von Känel and A. Dommann, J. Mat. Sci. 17 (1998), 1545.

Professor Dr. Alex Dommann

Publications 2020-1986

"LOW-ENERGY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION" C. Rosenblad, T. Graf, A. Dommann, H. von Känel, Mat. Res. Soc. Symp. Proc. 533, (1998), 301.

"SILICON EPITAXY BY LOW-ENERGY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION" C. Rosenblad, H.R. Deller, A. Dommann, T. Meyer, P. Schröter and H. von Känel, J. Vac. Sci. Technol. A 16, (1998), 2785.

"GROWTH OF $\text{Si}_{1-y}\text{Ge}_y/\text{Si}$ – AND $\text{Si}_{1-x-y}\text{Ge}_x\text{Ge}_y/\text{Si}$ MULTIPLE QUANTUM WELLS USING MOLECULAR BEAM EPITAXY" R. Hartmann, D. Grützmacher, E. Müller, U. Gennser, A. Dommann, P. Schröter and P. Warren, Thin Solid Films 318 (1998), 158.

"LOW-TEMPERATURE MOLECULAR BEAM EPITAXY OF $\text{Si}_{1-x-y}\text{Ge}_x\text{Ge}_y/\text{Si}$ QUANTUM WELL STRUCTURES ELECTRICAL AND OPTICAL PROPERTIES" D. Grützmacher, R. Hartmann, P. Schnappauf, U. Gennser, E. Müller, D. Bächle and A. Dommann, Thin Solid Films 321 (1998), 26.

"SAW SENSORS FOR HIGH TEMPERATURE APPLICATIONS" J.W.Mrosk, C.Ettel, L. Berger, P. Dabala, H.J. Fecht, G. Fischerauer, J. Hornsteiner, K.Riek, E. Riha, E. Born, M. Werner, A. Dommann, J. Auersperg, E. Kieselstein, B. Michel and A. Mucha, Proc. 24th Ann. Conf. IEEE Ind. Electron. Soc., Aachen, (1998), 2386.

"SURFACE-MICROMACHINED Ta-Si-N BEAMS FOR USE IN MICROMECHANICS" M.-A Grétilat, C. Linder, A. Dommann, G. Staufert, N.F. de Rooij and M.-A. Nicolet; J. Micromech. Microeng. 8 (1998), 88.

"Hydrogen plasma cleaning: a novel process for IC-packaging" N. Onda, Z. Stössel, A. Dommann and J. Ramm, Semiconductor Fabtech (1998) 311-318, Published by: ICG Publishing Ltd., Russell House, 28 Little Russell Street, London WC1A 2HN U.K., ISSN: 1358-1759

1997

"SILICON EPITAXY BY LOW-ENERGY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION" C. Rosenblad, H.R. Deller, A. Dommann, T. Meyer, P. Schröter and H.von Känel, J. Vac. Sci. Technol. A16 (1997), 2785.

"DC-HYDROGEN PLASMA CLEANING, A NOVEL PROCESS FOR IC-PACKAGING" N. Onda, Z. Stössel, A. Dommann and J. Ramm, SEMICON/West Proceedings, San José, (1997).

"PHOTOLUMINESCENCE STUDY OF Si/Ge MULTIPLE QUANTUM WELLS GROWN BY MBE" D. Grützmacher, R. Hartmann, E. Müller, U. Gennser and A. Dommann, J. Cryst. Growth. 175 (1997), 1144.

"PROPERTIES OF InGaN DEPOSITED ON GLASS AT LOW TEMPERATURE" T. Beierlein, S. Strite, A. Dommann and D.J. Smith, MRS Internet Journal of Nitride Semiconductor Research 2 (1997), U17.

"EFFECTS OF SUBSTRATE BIAS AND RAPID THERMAL PROCESSING ON THE LUMINESCENCE OF Si/Ge MULTIPLE QUANTUM WELLS GROWN BY MBE" R. Hartmann, D. Grützmacher, E. Müller, U. Gennser and A. Dommann, Thin Solid Films 294 (1997), 50.

"AMORPHOUS METALS AS NEW MATERIALS FOR TRANSDUCER APPLICATIONS" C. Linder, A. Dommann, G. Staufert and M.-A. Nicolet, Europhysics News 28 (1997), 82.

"IMPROVED OPTICAL ACTIVATION OF ION-IMPLANTED Zn ACCEPTORS IN GaN BY ANNEALING UNDER N_2 OVERPRESSURE" A. Pelzmann, S. Strite, A. Dommann, C. Kirchner, M. Kamp, K.J. Ebling and A. Nazzal, MRS Internet Journal, Nitride Semiconductor Research 2 (1997), 28.

"TERNARY Ta-Si-N FILMS FOR SENSORS AND ACTUATORS" C. Linder, A. Dommann, G. Staufert and M.-A. Nicolet, Sensors and Actuators A 61 (1997), 387.

1996

"SPUTTER-EPITAXIE OF STEP-GRADED $\text{Si}_{1-x}\text{Ge}_x/\text{Si}(001)$: EVOLUTION OF DEFECTS AND SURFACE MORPHOLOGY" P. Sutter, B. Vögeli, E. Müller, H.von Känel and A. Dommann, Appl. Surf. Sci. 102 (1996), 33.

Professor Dr. Alex Dommann

Publications 2020-1986

"HYDROGEN PLASMA CLEANING IN IC PACKAGING" N. Onda, A. Dommann, H. Zimmermann, C. Lüchinger, V. Jaecklin, D. Zanetti, E. Beck and J. Ramm, SEMICON Proceedings, Singapore, (1996).

"PROPERTIES OF Zn IMPLANTED GaN" S. Strite, P.W. Epperlein, A. Dommann, A. Rockett and R.F. Broom, Mater.Res.Soc.Symp.Proc. 395 (1996),795.

1995

"LOW TEMPERATURE PROCESSING FOR CRYSTALLINE Si SOLAR CELLS" D. Grützmacher, H. Kiess, W. Rehwald, F. Schäffler, J. Ramm, A. Dommann and S. Glunz, 13th European Photovoltaic Solar Energy Conference, Nice (1995), 1360.

"HYDROGEN PLASMA CHEMICAL CLEANING OF METALLIC SUBSTRATES AND SILICON WAFERS" N. Korner, E. Beck, A. Dommann, N. Onda and J. Ramm, Surface and Coatings Technology 76-77 (1995), 731.

"POLARIZATION RESONANCES OF OPTICALLY SPIN-ORIENTED PHOTOELECTRONS EMITTED FROM STRAINED SEMICONDUCTOR PHOTOCATHODES" J.C. Groebeli, D. Oberli, F. Meier, A. Dommann, Yu. Manaev, A. Subashiev and Yu. Yashin, Phys. Rev. Lett, 74 (1995), 2106.

"CHARACTERIZATION OF HOMOEPITAXIAL GROWTH OF SILICON AFTER DC-HYDROGEN CLEANING WITH X-RAY ROCKING CURVES" A. Dommann, N. Herres, H.R. Deller, H.U. Nissen, D. Krüger, R.E. Pixley and J. Ramm, J. Phys. D: Appl. Phys. 28 (1995), A144.

1994

"THERMAL-MISMATCH-STRAIN RELAXATION IN EPITAXIAL CaF₂, BaF₂/CaF₂, and PbSe/BaF₂/CaF₂ LAYERS ON Si(111) AFTER MANY TEMPERATURE CYCLES" H. Zogg, S. Blunier, A. Fach, C. Maissen, P. Müller, S. Teodoropol, V. Meyer, A. Dommann and T. Richmond, Phys. Rev. B 50 (1994), 10801.

"IN SITU DC-HYDROGEN PLASMA CLEANING OF Si (111) SURFACES" U. Kafader, H. Siringhaus, J. Ramm, A. Dommann and H. von Känel, Helv.Phys. Acta 67 (1994), 211.

"LOW TEMPERATURE EPITAXIAL GROWTH BY MBE ON HYDROGEN-PLASMA- CLEANED SILICON WAFERS" J. Ramm, A. Dommann, I. Eisele and D. Krüger, Thin Solid Films 246 (1994), 158.

"ACCURATE MICROSCOPIC METHOD TO INVESTIGATE THE AGING OF MICROMACHINED SILICON ACTUATORS" R. Buser and A. Dommann, Sensors and Actuators A 43 (1994), 317.

1993

"BEHAVIOUR OF A SILICON SPRING FABRICATED BY WIRE ELECTRO DISCHARGE MACHINING" G. Staufert, A. Dommann and D. Läger, J. Micromech. Microeng. 3 (1993), 232.

"DRY CLEANING OF SILICON WAFERS IN A LOW ENERGY HYDROGEN PLASMA" J. Ramm, A. Dommann, I. Eisele, D. Krüger and G. Lippert, Solid State Phenomena 32-33 (1993), 111.

"HYDROGEN CLEANING OF SILICON WAFERS INVESTIGATION OF THE WAFER SURFACE AFTER PLASMA TREATMENT" J. Ramm, E. Beck, A. Züger, A. Dommann and R.E. Pixley, Thin Solid Films 228 (1993), 23.

X-ray diffraction of thin films for neutron optics Grimmer, H., Böni, P., Elsenhans, O., Friedli, H. P., Anderson, I. S., Leifer, K., ... Hauert, R. (1993). X-ray diffraction of thin films for neutron optics. In (p. 2 pp.).

Professor Dr. Alex Dommann

Publications 2020-1986

1992

"LOW-TEMPERATURE IN SITU CLEANING OF SILICON WAFERS WITH AN ULTRA HIGH VACUUM COMPATIBLE PLASMA SOURCE" J. Ramm, E. Beck, A. Züger, A. Dommann and R.E. Pixley, *Thin Solid Films* 222 (1992), 126.

"BIAXIAL SCANNING MIRROR ACTIVATED BY BIMORPH STRUCTURES FOR MEDICAL APPLICATIONS" R.A. Buser, N.F. de Rooij, H. Tischhauser, A. Dommann and G. Staufert, *Sensors and Actuators A* 31 (1992), 29.

1991

"PROCESS STEPS FOR IN-SITU LOW TEMPERATURE SILICON PROCESSING IN THE ULTRA HIGH VACUUM" J. Ramm, E. Beck, A. Dommann, I. Eisele, H. Lorenz and A. Züger, *Proc. Conf. of Silicon Ultra Clean Processing Workshop*, Oxford (1991).

"X-RAY ROCKING CURVES MEASUREMENTS OF LOW TEMPERATURE Si₃N₄ THIN FILM" A. Dommann, C.-J. Tsai and J. Ramm, *Proc. Conf. of Röto '91*, Jülich (1991), 58.

"SELF-CONSISTENT DETERMINATION OF THE PERPENDICULAR STRAIN PROFILE OF IMPLANTED Si BY ANALYSIS OF X-RAY ROCKING CURVES" C.-J. Tsai, A. Dommann, M.-A. Nicolet and T. Vreeland Jr. *J. Appl. Phys.* 69 (1991), 2076.

1990

"THE CRYSTAL STRUCTURE OF LaCr(CN)₆.5H₂O" A. Dommann, H. Vetsch and F. Hulliger, *Acta Cryst.* C46 (1990), 1994.

"THE CRYSTAL STRUCTURE OF ErFe(CN)₆.4H₂O" A. Dommann, H. Vetsch and F. Hulliger; W. Petter, *Acta Cryst.* C46 (1990), 1992.

"THE CRYSTAL STRUCTURE AND THE MAGNETIC ORDER OF U₁₄Au₅₁" A. Dommann, P. Fischer, H.R. Ott and F. Hulliger, *J. Less-Common Met.* 160 (1990), 171.

"THE CRYSTAL STRUCTURE OF BiFe(CN)₆.4H₂O and BiCo(CN)₆.4H₂O" W. Petter, V. Gramlich, A. Dommann, H. Vetsch and F. Hulliger, *Inorg. Chim. Acta.* 170 (1990), 5.

"CRYSTAL AND MAGNETIC STRUCTURE OF UCo₅" A. Dommann, H. Brändle, F. Hulliger and P. Fischer, *J. Less-Common Met.* 158 (1990), 287.

1989

"X-RAY DIFFRACTION DETERMINATION OF STRESSES IN DAMAGED Si SINGLE CRYSTALS" A. Dommann and C.-J. Tsai, *Proc. Conf. of Röto '89*, Berlin (1989), 96.

"THE MAGNETIC AND NUCLEAR STRUCTURE OF UPt" P.H. Frings, C. Vettier, A. Dommann, F. Hulliger and A. Menovsky, *Physica B* 156&157 (1989), 832.

"MAGNETIC PROPERTIES AND ANTIFERROMAGNETIC Cu ORDERING IN Pr₂CuO₄" P. Allenspach, S.-W. Cheong, A. Dommann, P. Fischer, Z. Fisk, A. Furrer, H.R. Ott and B. Rupp, *Physica B* 77 (1989), 185.

"LOW-TEMPERATURE PROPERTIES OF U₁₄Au₅₁" H.R. Ott, E. Felder, A. Schilling, A. Dommann and F. Hulliger, *Solid State Commun.* 71 (1989), 549.

"ON THE CRYSTAL STRUCTURE OF ZnP₄" A. Dommann, R. Marsh, F. Hulliger, *J. Less-Common Met.* 152 (1989), 1.

Professor Dr. Alex Dommann

Publications 2020-1986

1988

"CHARACTERIZATION OF SEMICONDUCTORS BY MeV He+ BACKSCATTERING SPECTROMETRY, CHANNELING AND DOUBLE CRYSTAL X-RAY DIFFRACTION" G. Bai, C.-J. Tsai, A. Dommann, M.-A. Nicolet and T. Vreeland Jr., Techcon, Dallas (1988), 339.

"X-RAY DIFFRACTION OF STRESSES IN THIN FILMS" T. Vreeland Jr., A. Dommann, C.-J. Tsai and M.-A. Nicolet, Mat.Res.Soc.Symp.Proc. 130 C1.1 (1988), 74.

"ON THE STRUCTURE TYPES OF UAu₂ AND U₁₄Au₅₁" A. Dommann and F. Hulliger, J. Less-Common Met. 141 (1988), 261.

"ON THE CRYSTAL STRUCTURE OF UPt" A. Dommann and F. Hulliger, Solid State Commun. 65 (1988), 1093.

"NEW ThCr₂Si₂ -TYPE REPRESENTATIVES LnCr₂Si₂" A. Dommann, F. Hulliger, Ch Baerlocher, J. Less-Common Met. 138 (1988), 113.

1987

"THE CRYSTAL STRUCTURES OF UIr AND UPt AT 300 AND 4 K" A. Dommann and F. Hulliger, Acta Cryst. A43 (1987), C-100.

"U₁₄Au₅₁, A NEW PHASE IN THE SYSTEM U - Au" A. Dommann and F. Hulliger, Acta Cryst. A43 (1987), C-139.

"ON THE LOW TEMPERATURE BEHAVIOR OF UIr - UPt" H. Brändle, A. Dommann, F. Hulliger, J. Schoenes, Proc. 17èmes Journées des Actinides (1987), 105.

1986

"THE MAGNETIC STRUCTURE OF UIr" A. Dommann, F. Hulliger, T. Siegrist, P. Fischer, J. Magn. Magn. Mat. 67 (1986), 323.

"UIr, A PdBi-LIKE DISTORTED CrB-TYPE STRUCTURE" T. Siegrist, Y. Le Page, V. Gramlich, W. Petter, A. Dommann, F. Hulliger, J. Less-Common Met. 125 (1986), 167.