

Laboratory for Advanced Materials Processing

LIST OF PUBLICATIONS

2011

Ramirez, M.G., Boj, P.G., Navarro-Fuster, V., Vragovic, I., Villalvilla, J.M., Trabadelo, V., Merino, S., Diaz-Garcia, M.A., Efficient organic distributed feedback lasers with imprinted active films, *OpEx*, Optical Society of America, Washington, Vol. **19**, Issue 23, 2011, pp. 22443-22454. [DOI:10.1364/OE.19.022443](https://doi.org/10.1364/OE.19.022443)

Nicula, R., Stir, M., Wurm, A., Catala-Civera, J.M., Ishizaki, K., Vaucher, S., Zhuravlev, E., Schick, C., Microwave calorimetry using X-rays, *Thermochimica Acta* **526** (2011) 137-142. [DOI:10.1016/j.tca.2011.09.007](https://doi.org/10.1016/j.tca.2011.09.007)

Bidiville, A., Neulist, I., Wasmer, K., Ballif, C. Effect of debris on the silicon wafering for solar cells. *Sol. Energ. Mat. Sol. Cells* **95** (2011) 2490-2496. [DOI:10.1016/j.solmat.2011.04.038](https://doi.org/10.1016/j.solmat.2011.04.038)

Vaucher, S., Stir, M., Ishizaki, K., Catala-Civera, J.M., Nicula, R. Reactive synthesis of Ti-Al intermetallics during microwave heating in an E-field maximum. *Thermochimica Acta* **522** (2011) 151-154. [DOI:10.1016/j.tca.2010.11.026](https://doi.org/10.1016/j.tca.2010.11.026)

Pittini-Yamada, Y., Perigo, E.A., de Hazan, Y., Nakahara, S. Permeability of hybrid soft magnetic composites. *Acta Materialia* **59** (2011) 4291-4302. [DOI:10.1016/j.actamat.2011.03.053](https://doi.org/10.1016/j.actamat.2011.03.053)

Kollo, L., Bradbury, C.R., Veinthal, R., Jaeggi, C., Carreno-Morelli, E., Leparoux, M. Nano-silicon carbide reinforced aluminium produced by high-energy milling and hot consolidation. *Mater. Sci. Eng. A* **528** (2011) 6606-6615. [DOI:10.1016/j.msea.2011.05.037](https://doi.org/10.1016/j.msea.2011.05.037)

Kurita, H., Kwon, H., Kawasaki, A. Fabrication of carbon nanotube reinforced aluminum matrix composite by spark plasma sintering and hot extrusion hybrid process. *J. Japan Inst. Metals* **75** (2011) 259-264. [DOI:10.2320/jinstmet.75.259](https://doi.org/10.2320/jinstmet.75.259)

Heiber, J., Bloch, R., Bucher, R., Habegger, S., Lombardi, I., Wasmer, K., Assi, F., Beck, A. A review of diamond wire wafering technology at Meyer Burger Ltd. in: Manufacturing the solar future: the 2011 production manual, ed. K. Reddig, Solar Media, 2011, pp. 78-85.

Estili, M., Kawasaki, A., Pittini-Yamada, Y., Utke, I., Michler, J. In situ characterization of tensile-bending load bearing ability of multi-walled carbon nanotubes nanocomposites. *J. Mater. Chem.* **21** (2011) 4272-4278. [DOI: 10.1039/C0JM03906C](https://doi.org/10.1039/C0JM03906C)

Ghisleni, R., Liu, J., Koodakal, R.R., Brodard, P., Lugstein, A., Wasmer, K., Michler, J. In situ micro-Raman compression: characterization of plasticity and fracture in GaAs. *Philosophical Magazine* **91** (2011) 1286-1292. [DOI: 10.1080/14786435.2010.495358](https://doi.org/10.1080/14786435.2010.495358)

Perigo, E.A., Nakahara, S., Pittini-Yamada, Y., de Hazan, Y., Graule, T.J. Magnetic properties of soft magnetic composites prepared with crystalline and amorphous powders. *J. Magn. Magn. Mater.* **323** (2011) 1398-1944. [DOI: 10.1016/j.jmmm.2011.02.025](https://doi.org/10.1016/j.jmmm.2011.02.025)

Schöbel, M., Altendorfer, W., Degischer, H.P., Vaucher, S., Buslaps, T., Michiel, M.D., Hofmann, M. Internal stresses and voids in SiC particle reinforced aluminum composites for heat sink applications. *Compos. Sci. Technol.* **71** (2011) 724-733. [DOI: 10.1016/j.compscitech.2011.01.020](https://doi.org/10.1016/j.compscitech.2011.01.020)

Wang, L., Montagne, F., Hofmann, P., Heinzlmann, H., Pugin, R. Hierarchical positioning of gold nanoparticles into periodic arrays using block copolymer nanoring templates. *J. Colloid Interf. Sci.* **356** (2011) 496-504. [DOI: 10.1016/j.jcis.2010.12.081](https://doi.org/10.1016/j.jcis.2010.12.081)

Jaeggi, C., Frauchinger, V., Eitel, F., et al. The effect of surface alloying of Ti powder for vacuum plasma spraying of open porous titanium coatings. *Acta Materialia* **59**, 717-725 (2011).
[DOI:10.1016/j.actamat.2010.10.010](https://doi.org/10.1016/j.actamat.2010.10.010)

Dabirian, A., Harada, S., Kuzminykh, Y., Sandu, S.C., Wagner, E., Benvenuti, G., Brodard, P., Rushworth, S., Mural, P. and Hoffmann, P. Combinatorial chemical beam epitaxy of lithium niobate thin films on sapphire. *J. Electrochem. Soc.* **158**, D72-D76 (2011). [DOI:10.1149/1.3519843](https://doi.org/10.1149/1.3519843)

Dabirian, A., Kuzminykh, Y., Sandu, S.C., Harada, S., Wagner, E., Brodard, P., Benvenuti, G., Rushworth, S., Mural, P. and Hoffmann, P. Combinatorial high-vacuum chemical vapor deposition of textured hafnium-doped lithium niobate thin films on sapphire. *Crystal Growth and Design* **11**, 203-209 (2011).
[DOI:10.1021/cg1011583](https://doi.org/10.1021/cg1011583)

Kwon, H., Bradbury, C.R., Leparoux, M. Fabrication of Functionally Graded Carbon Nanotube-Reinforced Aluminum Matrix Composite. *Adv. Eng. Mater.* **13** (2011) 325-329.
[DOI:10.1002/adem.201000251](https://doi.org/10.1002/adem.201000251)

Kwon, H., Kurita, H., Leparoux, M., Kawasaki, A. Carbon Nanofiber Reinforced Aluminum Matrix Composite Fabricated by Combined Process of Spark Plasma Sintering and Hot Extrusion. *J. Nanoscience Nanotechnology* **11** (2011) 4119-4126. [DOI:10.1166/jnn.2011.3866](https://doi.org/10.1166/jnn.2011.3866)

Nicula, R., Ishizaki, K., Stir, M., Shen, Z. & Vaucher, S. Rapid synthesis and densification of single-phase Al-Cu-Fe quasicrystals by spark plasma sintering or microwave heating. *Philosophical Magazine* **91** (2011) 2450-2457. [DOI:10.1080/14786435.2010.511601](https://doi.org/10.1080/14786435.2010.511601)

2010

Bidiville A., Wasmer K., Michler J., Nasch P., Van der Meer M., and Ballif C., "Mechanisms of Wafer Sawing and Impact on Wafer Properties", *Progress in Photovoltaics: Research and Applications*, Vol. 18, Issue 8, pp: 563-572 (2010). [DOI:10.1002/pip.972](https://doi.org/10.1002/pip.972)

Bidiville, A. Wafer sawing processes: from microscopic phenomena to macroscopic properties, Dissertation, 182 pp. (2010).

Bidiville, A., Heiber, J., Wasmer, K., Habegger, S. & Assi, F. *Diamond wire wafering: wafer morphology in comparison to slurry sawn wafers* (25th European Photovoltaic Solar Energy Conference and Exhibition / 5th World Conference on Photovoltaic Energy Conversion (25th EU PVSEC / WCPEC-5), WIP, 2010).
[DOI:10.4229/25thEUPVSEC2010-2CV.1.78](https://doi.org/10.4229/25thEUPVSEC2010-2CV.1.78).

Bradbury, C. R., Kuster, L. & Fermín, D. J. Electrochemical reactivity of HOPG electrodes modified by ultrathin films and two-dimensional arrays of metal nanoparticles. *J. Electroanal. Chem.* **646**, 114-123 (2010). [DOI:10.1016/j.jelechem.2010.04.015](https://doi.org/10.1016/j.jelechem.2010.04.015)

Dabirian, A. *et al.* Combinatorial discovery and optimization of amorphous HfO₂-Nb₂O₅ mixture with improved transparency. *Electrochem. Solid St. Lett.* **13**, G60-G63 (2010). [DOI:10.1149/1.3407618](https://doi.org/10.1149/1.3407618)

Dabirian, A. et al. *Efficient optimization of high vacuum chemical vapor deposition of niobium oxide on full wafer scale* (Fundamentals and Technology of Multifunctional Oxide Thin Films (Symposium G, EMRS 2009 Spring Meeting) Ser. 8, IOP, 2010).

Kuzminykh, Y., Dabirian, A., Harada, S., Sandu, S.C., Wagner, E., Benvenuti, G., Brodard, P., Rushworth, S., Sones, C.L., Mailis, S., Mural, P., and Hoffmann, P. *Epitaxial Lithium Niobate Thin Films Grown by Chemical Beam Epitaxy on Sapphire* (International Conference on Optical, Optoelectronic and Photonic Materials and Applications, ICOOPMA, 2010, A-0165).

Ishizaki, K., Battabyal, M., Pittini, Y. Y., Nicula, R. & Vaucher, S. *Microwave sintering explored by X-ray microtomography* (Advances in Sintering Science and Technology - International Conference on Sintering 2008 Ser. 209, Wiley, 2010).

Kollo, L., Leparoux, M., Bradbury, C.R., Jaeggi, C., Carreño-Morelli, E., Rodriguez-Arbaizar, M. Investigation of planetary milling for nano-silicon carbide reinforced aluminium metal matrix composites. *J. Alloy. Compd.* **489**, 394-400 (2010). [DOI:10.1016/j.jallcom.2009.09.128](https://doi.org/10.1016/j.jallcom.2009.09.128)

Kuzminykh, Y. et al. *Amorphous nature, high refractive index and wide transparency range of mixed $HfO_2-Nb_2O_5$ oxide films* (E-MRS 2010 Spring Meeting, 2010).

S. Graça, M. Hadad, P. Hoffmann, H. Du, *Challenges in the quantification of high temperature erosive wear*, High Temperature Wear and Erosion Meeting, Derby, UK, 10 November, 2010.

Leparoux, M. *Synthesis of nanopowders using an inductively coupled thermal plasma* (24th Symposium on Plasma Physics and Technology, České Vysoké Učení Technické v Praze (ČVUT); FEL, 2010).

Leparoux, M., Leconte, Y., Wirth, A. & Buehler, T. In situ treatment of thermal RF plasma processed nanopowders to control their agglomeration and dispersability. *Plasma Chem. Plasma P.* **30**, 779-793 (2010). [DOI:10.1007/s11090-010-9258-z](https://doi.org/10.1007/s11090-010-9258-z)

Nakahara, S., Périgo, E. A., Pittini-Yamada, Y., de Hazan, Y. & Graule, T. J. Electric insulation of a FeSiBC soft magnetic amorphous powder by a wet chemical method: identification of the oxide layer and its thickness control. *Acta Mater.* **58**, 5695-5703 (2010). [DOI:10.1016/j.actamat.2010.06.044](https://doi.org/10.1016/j.actamat.2010.06.044)

Navarro-Fuster, V. et al. *Second-order distributed feedback lasers based on films containing perylenediimide derivatives* (Organic Photonics IV Ser. 7722, SPIE, 2010).

Navarro-Fuster, V. et al. Highly photostable organic distributed feedback laser emitting at 573 nm. *Appl. Phys. Lett.* **97**, Article number 171104 (3 pp.) (2010). [DOI:10.1063/1.3506500](https://doi.org/10.1063/1.3506500)

Nicula, R., Ishizaki, K., Stir, M., Shen, Z. & Vaucher, S. *Rapid synthesis and densification of single-phase Al-Cu-Fe quasicrystals by spark plasma sintering or microwave heating* (11th International Conference on Quasicrystals (ICQ11), 2010).

Nicula, R., Stir, M., Ishizaki, K. & Vaucher, S. *Mechanisms of microwave energy absorption in metallic alloys revealed by in-situ real-time synchrotron radiation experiments* (11th Lahnwitzseminar on Calorimetry, 2010).

Radice, S., Bradbury, C. R., Michler, J. & Mischler, S. Critical particle concentration in electrophoretic deposition. *J. Eur. Ceram. Soc.* **30**, 1079-1088 (2010). [DOI:10.1016/j.jeurceramsoc.2009.08.021](https://doi.org/10.1016/j.jeurceramsoc.2009.08.021)

Schöbel, M., Degischer, H. P., Vaucher, S., Hofmann, M. & Cloetens, P. Reinforcement architectures and thermal fatigue in diamond particle-reinforced aluminum. *Acta Mater.* **58**, 6421-6430 (2010).
[DOI:10.1016/j.actamat.2010.08.004](https://doi.org/10.1016/j.actamat.2010.08.004)

Stir, M., Nicula, R., Ishizaki, K. & Vaucher, S. *Kinetics of high-temperature phase transitions in magnetite exposed to separate E or H microwave fields* (11th Lahnwitzseminar on Calorimetry, 2010).

Unifantowicz, P., Vaucher, S., Lewandowska, M. & Kurzydłowski, K. J. Mechanism of SiC crystals growth on {100} and {111} diamond surfaces upon microwave heating. *Mater. Charact.* **61**, 648-652 (2010).
[DOI:10.1016/j.matchar.2010.03.010](https://doi.org/10.1016/j.matchar.2010.03.010)

Vaucher, S. et al. *Microwave-induced electromigration in multicomponent metallic alloys* (2010 IEEE MTT-S International Microwave Symposium (MTT 2010)). [DOI:10.1109/MWSYM.2010.5517705](https://doi.org/10.1109/MWSYM.2010.5517705)

Wasmer, K., Nikbin, K. M. & Webster, G. A. Influence of reference stress formulae on creep and creep-fatigue crack initiation and growth prediction in plate components. *Int. J. Pres. Ves. Pip.* **87**, 447-456 (2010). [DOI:10.1016/j.ijpvp.2010.07.007](https://doi.org/10.1016/j.ijpvp.2010.07.007)

2009

Bret, T., Afra, B., Becker, T., Hofmann, T., Edinger, K., Liang, T. and Hoffmann, P. Gas assisted focused electron beam induced etching of alumina. *J. Vacuum Sci. Technol. B* **27**, 2727-2731 (2009).
[DOI:10.1116/1.3243208](https://doi.org/10.1116/1.3243208)

Dubach, A., Koodakal, R. R., Löffler, J. F., Michler, J. & Ramamurty, U. Micropillar compression studies on a bulk metallic glass in different structural states. *Scripta Mater.* **60**, 567-570 (2009).
[DOI:10.1016/j.scriptamat.2008.12.013](https://doi.org/10.1016/j.scriptamat.2008.12.013)

Derler, S., Huber, R., Feuz, H. P. & Hadad, M. Influence of surface microstructure on the sliding friction of plantar skin against hard substrates. *Wear* **267**, 1281-1288 (2009). [DOI:10.1016/j.wear.2008.12.053](https://doi.org/10.1016/j.wear.2008.12.053)

Derler, S., Gerhardt, L. C., Lenz, A., Bertaux, E. & Hadad, M. Friction of human skin against smooth and rough glass as a function of the contact pressure. *Tribol. Int.* **42**, 1565-1574 (2009).
[DOI:10.1016/j.triboint.2008.11.009](https://doi.org/10.1016/j.triboint.2008.11.009)

Diziain, S., Merolla, J.M., Spajer, M., Benvenuti, G., Dabirian, A., Kuzminykh, Y., Hoffmann, P. and Bernal, M.P. Determination of local refractive index variations in thin films by heterodyne interferometric scanning near-field optical microscopy. *Rev. Sci. Instrum.* **80**, 093706 (2009). [DOI:10.1063/1.3226660](https://doi.org/10.1063/1.3226660)

Hadad, M., Bandyopadhyay, P. P., Michler, J. & Lesage, J. Tribological behaviour of thermally sprayed Ti-Cr-Si coatings. *Wear* **267**, 1002-1008 (2009). [DOI:10.1016/j.wear.2009.01.013](https://doi.org/10.1016/j.wear.2009.01.013)

Kollo, L., Bradbury, C. R. & Leparoux, M. *Al-SiC nanocomposites produced by high-energy milling and hot pressing*. (Engineering Materials & Tribology, Baltmattrib 2009, 2009).

Balic, E.E., Hadad, M., Bandyopadhyay, P.P., Michler, J. Fundamentals of adhesion of thermal spray coatings: Adhesion of single splats. *Acta Mater* **57**, 5921 (2009). [DOI:10.1016/j.actamat.2009.08.042](https://doi.org/10.1016/j.actamat.2009.08.042)

Hadad M. *Tribological behaviour of sandwich structured WC-CO-CR thermally sprayed coatings*. In: Ciulli E, Piccigallo B, Bassani R, Franek F, Vižintin J, Crockett R, editors. 2nd European Conference on Tribology. Pisa, Italy, 2009.

Pathak, S., Cambaz, Z. G., Kalidindi, S. R., Swadener, J. G. & Gogotsi, Y. Viscoelasticity and high buckling stress of dense carbon nanotube brushes. *Carbon* **47**, 1969-1976 (2009).

[DOI:10.1016/j.carbon.2009.03.042](https://doi.org/10.1016/j.carbon.2009.03.042)

Pathak, S., Stojakovic, D. & Kalidindi, S. R. Measurement of the local mechanical properties in polycrystalline samples using spherical nanoindentation and orientation imaging microscopy. *Acta Mater.* **57**, 3020-3028 (2009). [DOI:10.1016/j.actamat.2009.03.008](https://doi.org/10.1016/j.actamat.2009.03.008)

Stir, M., Ishizaki, K., Vaucher, S. & Nicula, R. Mechanism and kinetics of the reduction of magnetite to iron during heating in a microwave E-field maximum. *J. Appl. Phys.* **105**, Article number 124901 (4 pp.) (2009). [DOI:10.1063/1.3148264](https://doi.org/10.1063/1.3148264)

Nicula, R., Stir, M., Ishizaki, K., Català-Civera, J. M. & Vaucher, S. Rapid nanocrystallization of soft-magnetic amorphous alloys using microwave induction heating. *Scripta Mater.* **60**, 120-123 (2009).

[DOI:10.1016/j.scriptamat.2008.09.019](https://doi.org/10.1016/j.scriptamat.2008.09.019)

Unifantowicz, P. *et al.* FEM modeling of structure and properties of diamond-SiC-(Al) composites developed for thermal management applications. *Adv. Mat. Res.* **59**, 173-176 (2009).

[DOI:10.4028/3-908454-01-8.173](https://doi.org/10.4028/3-908454-01-8.173)

Nicula, R., Stir, M., Ishizaki, K., Català-Civera, J. M. & Vaucher, S. Nanocrystallization of amorphous alloys using microwaves: *in situ* time-resolved synchrotron radiation studies. *J. Phys. Conf. Ser.* **144**, Article number 012109 (4 pp.) (2009). [DOI:10.1088/1742-6596/144/1/012109](https://doi.org/10.1088/1742-6596/144/1/012109)

Wasmer K., Bidiville A., Ballif C., Van der Meer M., and Nasch P., "Study of the Influence of Feed Rate and Wire Tension on the Mechanical Stability of Wire-Sawn Silicon Wafers", In Proceeding of 3rd International Workshop on Crystalline Silicon Solar Cells, Throndeim, Norway, pp: 1-4, 3-5 June, 2009

Wasmer K., Nikbin K. M., and Webster G. A., "A Sensitivity Study of Creep Crack Growth in Plates to Reference Stress Formulae", In Proceeding of 2nd ECCS Creep Conference on Creep & Fracture in High Temperature Components – Design & Life Assessment Issues, Zürich, CH, pp: 1294-1307, 21-23 April, 2009, ISBN: 978-1-60595-005-1.

Bidiville A., Wasmer K., Kraft R., and Ballif C., "Diamond wire-sawn silicon wafers – from the lab to the cell production", In Proceeding of 24th European Photovoltaic Solar Energy & Exhibition, Hamburg, Germany, pp: 1400-1405, 21-25 September, 2009. [DOI:10.4229/24thEUPVSEC2009-2CV.1.86](https://doi.org/10.4229/24thEUPVSEC2009-2CV.1.86).

Dubach, A. *et al.* Free-volume dependent pressure sensitivity of Zr-based bulk metallic glass. *J. Mater. Res.* **24**, 2697-2704 (2009). [DOI:10.1557/JMR.2009.0304](https://doi.org/10.1557/JMR.2009.0304)

Bret, T., Hoffmann, P. & Utke, I. *Characterization of focused electron beam (25 keV) deposited materials from organic precursors* (ESF COST Conference Electron Controlled Chemical Lithography, 2009).

Hadad, M., Hitzek, R., Michler, J. & Lesage, J. *Tribological behaviour of sandwich structured Wc-Co-Cr thermally sprayed coatings* (ECOTRIB 2009 - 2nd European Conference on Tribology, 2009).

Jaeggi, C., Mooser, R., Frauchiger, V. & Wyss, P. 3D characterization of open porous vacuum plasma sprayed titanium coatings by means of high resolution micro computer tomography. *Mater. Lett.* **63**, 2643-2645 (2009). [DOI:10.1016/j.matlet.2009.09.023](https://doi.org/10.1016/j.matlet.2009.09.023)

Vecchione, N., Wasmer, K., Balint, D. S. & Nikbin, K. M. Characterization of EB-PVD yttrium-stabilised zirconia by nanoindentation. *Surf. Coat. Tech.* **203**, 1743-1747 (2009).

[DOI:10.1016/j.surfcoat.2008.11.016](https://doi.org/10.1016/j.surfcoat.2008.11.016)

Unifantowicz, P. et al. *FEM modeling of structure and properties of composites developed for thermal management applications* (1st International Conference On New Materials for Extreme Environment, 2009).

Kuzminykh, Y., Multone, X. & Hoffmann, P. *Combination of electron or laser beam irradiation with high vacuum chemical vapor deposition (HV-CVD) of Al₂O₃ for in-situ local structuring on wafer scale substrate* (17th International Chemical Vapor Deposition Symposium (CVD-XVII); 216th ECS Meeting Ser. 25, ECS, 2009).

Multone, X., Afra, B., Kuzminykh, Y. & Hoffmann, P. *Tailoring of optical properties of alumina films deposited by high vacuum CVD (HV-CVD)* (17th International Chemical Vapor Deposition Symposium (CVD-XVII) - 216th ECS Meeting Ser. 25, 2009).

Dabirian, A. et al. *Combinatorial chemical vapor deposition of lithium niobate thin films* (17th Intl. Chemical Vapor Deposition Symposium (CVD-XVII); 216th ECS Meeting Ser. 25, ECS, 2009).

Nicula, R., Ishizaki, K., Stir, M., Catala-Civera, J. M. & Vaucher, S. Microwave energy absorption driven by dynamic structural and magnetization states in Fe₈₅B₁₅ metallic glass ribbons. *Appl. Phys. Lett.* **95**, Article number 174104 (3 pp.) (2009). [DOI:10.1063/1.3257697](https://doi.org/10.1063/1.3257697)

Wang, L., Montagne, F., Hoffmann, P., Pugin, R. Gold nanoring arrays from responsive block copolymer templates. *Chem. Commun.*, 3798-3800 (2009). [DOI:10.1039/B906825B](https://doi.org/10.1039/B906825B)

2008

Bandyopadhyay, P. P., Hadad, M., Jaeggi, C. & Siegmann, S. Microstructural, tribological and corrosion aspects of thermally sprayed Ti-Cr-Si coatings. *Surf. Coat. Technol.* **203**, 35-45 (2008). [DOI:10.1016/j.surfcoat.2008.07.026](https://doi.org/10.1016/j.surfcoat.2008.07.026)

Bandyopadhyay, P. P. & Siegmann, S. An investigation of the effect of processing conditions on the microstructure of vacuum plasma-sprayed Ti-Zr-Ni quasicrystal coatings. *J. Coat. Tech. Res.* **5**, 379-383 (2008).

Bandyopadhyay, P. P., Siegmann, S., Hadad, M. & Jaeggi, C. *Microstructural and tribological aspects of thermally sprayed Ti-Cr-Si coatings* (International Thermal Spray Conference & Exposition ITSC2008 "Thermal Spray Crossing Borders", 2008).

Battabyal, M., Beffort, O., Kleiner, S., Vaucher, S. & Rohr, L. Heat transport across the metal-diamond interface. *Diamond Relat. Mat.* **17**, 1438-1442 (2008). [DOI:10.1016/j.diamond.2008.01.023](https://doi.org/10.1016/j.diamond.2008.01.023)

Wasmer K., Bidiville A., Michler J., Ballif C., Van der Meer M., and Nasch P., "Effects of Edge Defects induced by Multi-Wire Sawing on the Wafer Strength", In Proceeding of 23rd European Photovoltaic Solar Energy & Exhibition, Valencia, Spain, pp: 1305 – 1310, 1-5 Sept., 2008, ISBN: 3-936338-24-8. [DOI:10.4229/23rdEUPVSEC2008-2CV.3.43](https://doi.org/10.4229/23rdEUPVSEC2008-2CV.3.43)

Bidiville A., Wasmer K., Michler J., Ballif C., Van der Meer M., and Nasch P., "Influence of Abrasive Concentration on the Quality of Wire-Sawn Silicon Wafers", In Proceeding of 23rd European Photovoltaic Solar Energy & Exhibition, Valencia, Spain, pp: 1311 – 1314, 1-5 September, 2008, ISBN 3-

936338-24-8. [DOI:10.4229/23rdEUPVSEC2008-2CV.3.44](https://doi.org/10.4229/23rdEUPVSEC2008-2CV.3.44)

Rzepiejewska - Malyska K., Parlinska - Wojtan M., Wasmer K., Hedjuk K., and Michler J., "In-situ SEM indentation studies of the deformation mechanisms in TiN, CrN and TiN/CrN ", *Micron*, Vol. 40, pp: 22-27 (2009). [DOI:10.1016/j.micron.2008.02.013](https://doi.org/10.1016/j.micron.2008.02.013).

Bradbury, C. R. et al. *Crystallinity of hydroxyapatite coatings for implant application* (Medtech Event 2008, 2008).

Bruinink, A. et al. Coated biomedical device (European patent application). 06022452.4, 11 pp (2008).

Hadad, M. et al. Adhesion evaluation of multilayered based WC-Co-Cr thermally sprayed coatings. *Surf. Coat. Technol.* **202**, 4399-4405 (2008). [DOI:10.1016/j.surfcoat.2008.04.016](https://doi.org/10.1016/j.surfcoat.2008.04.016)

C. Leinenbach, A. Al-Badri, M. Roth, M. Hadad, B. Scarlin, M. Staubli, R. Hitzek, P. Bürgler, A. Nicoll, R. Damani and G. Reisel, *Coatings for valves and blades in steam turbines*, Jahrestagung zum Energieforschungsprogramm "Kraftwerk 2020", Ittigen, Switzerland, (2008).

Ishizaki, K. & Nagata, K. *Carbothermal reduction of magnetite by microwave irradiation* (Global Congress on Microwave Energy Applications GCMEA 2008 MAJIC 1st, Proceedings, 2008).

Jaeggi, C. et al. *Thermally sprayed open porous titanium coatings: 3D structure and customized porosity* (KTI/CTI Medtech Event, 2008).

Jenke, M.G., Santschi, C., Hoffmann, P. Two-dimensional electrostatic force field measurements with simultaneous topography measurement on embedded interdigitated nanoelectrodes using a force distance curve based method. *Appl. Phys. Lett.* **92**, 063113 (2008). [DOI:10.1063/1.2844882](https://doi.org/10.1063/1.2844882)

Leconte, Y., Leparoux, M., Portier, X. & Herlin-Boime, N. Controlled synthesis of β -SiC nanopowders with variable stoichiometry using inductively coupled plasma. *Plasma Chem. Plasma Process.* **28**, 233-248 (2008). [DOI:10.1007/s11090-007-9072-4](https://doi.org/10.1007/s11090-007-9072-4)

Leparoux, M., Schreuders, C., Fauchais, P. Improved Plasma Synthesis of Si-nanopowders by quenching. *Adv. Eng. Mater.* **10**, No. 12, 1147-1150 (2008). [DOI:10.1002/adem.200800217](https://doi.org/10.1002/adem.200800217)

Leparoux, M., Kihn, Y., Paris, S. & Schreuders, C. Microstructure analysis of RF plasma synthesized TiCN nanopowders. *Int J Refract Met Hard Mater* **26**, 277-285 (2008). [DOI:10.1016/j.jirmhm.2007.06.003](https://doi.org/10.1016/j.jirmhm.2007.06.003)

Leparoux, M. et al. *Silicon carbide nanoparticles synthesis for the elaboration of nanostructured materials* (APNFM 2008, 2008).

Leparoux, M., Loher, M., Schreuders, C. & Siegmann, S. Neural network modelling of the inductively coupled RF plasma synthesis of silicon nanoparticles. *Powder Technol.* **185**, 109-115 (2008).

[DOI:10.1016/j.powtec.2007.10.004](https://doi.org/10.1016/j.powtec.2007.10.004)

Marot, G. Demarecaux P, Lesage J, Hadad A, Siegmann S, Staia MH. The interfacial indentation test to determine adhesion and residual stresses in NiCr VPS coatings. *Surf. Coat. Technol.* **202**, 4411-4416 (2008). [DOI: 10.1016/j.surfcoat.2008.04.018](https://doi.org/10.1016/j.surfcoat.2008.04.018)

X. Multone, Y. Luo and P. Hoffmann. Er-doped Al₂O₃ thin films deposited by high-vacuum chemical vapor deposition (HV-CVD). *Materials Science and Engineering B-Solid State Materials for Advanced Technology* **146**, 35-40 (2008). [DOI:10.1016/j.mseb.2007.07.086](https://doi.org/10.1016/j.mseb.2007.07.086)

Y. Poujet, J. Salvi, F. I. Baida, D. van Labeke, A. Perentes, C. Santschi and P. Hoffmann. Near-field optical images of subwavelength annular aperture arrays exhibiting an extraordinary transmission. *Journal of Microscopy* **229**, 203-209 (2008). [DOI:10.1111/j.1365-2818.2008.01887.x](https://doi.org/10.1111/j.1365-2818.2008.01887.x)

Nicula, R., Stir, M., Ishizaki, K., Catala-Civera, J. M. & Vaucher, S. *Nanocrystallization of amorphous alloys using microwaves: in situ time-resolved synchrotron radiation studies* (13th International Conference on Rapidly Quenched & Metastable Materials RQ13, 2008).

Parlinska-Wojtan, M., Wasmer, K., Tharian, J. & Michler, J. Microstructural comparison of material damage in GaAs caused by Berkovich and wedge nanoindentation and nanoscratching. *Scripta Mater* **59**, 364-367 (2008). [DOI:10.1016/j.scriptamat.2008.04.008](https://doi.org/10.1016/j.scriptamat.2008.04.008)

Pittini, Y. Y. *et al.* Effect of PEG number on dielectric properties of paraffin-based PEG polymers at microwave frequencies. *COMPEL Int. J. Comput. Math. Electr. Electron. Eng.* **27**, 500-508 (2008). [DOI:10.1108/03321640810847788](https://doi.org/10.1108/03321640810847788)

Unifantowicz, P., Vaucher, S., Lewandowska, M. & Kurzydłowski, K. J. Structural changes of silicon upon high-energy milling investigated by Raman spectroscopy. *J. Phys. : Condens. Matter* **20**, 025205 (5pp)-January 16, 2008 (2008). [DOI:10.1088/0953-8984/20/02/025205](https://doi.org/10.1088/0953-8984/20/02/025205)

Utke, I., Hoffmann, P., Melngailis, J. Gas-assisted focused electron beam and ion beam processing and fabrication. *J. Vac. Sci. Technol. B* **26**, 1197-1276 (2008). [DOI:10.1116/1.2955728](https://doi.org/10.1116/1.2955728)

Vaucher, S. *et al.* Ceramic foam-reinforced Al-based micro-composites. *Compos. Sci. Technol.* **68**, 3202-3207 (2008). [DOI:10.1016/j.compscitech.2008.08.004](https://doi.org/10.1016/j.compscitech.2008.08.004)

Vaucher, S. & Nicula, R. Frontiers in microwave process monitoring. *Chemistry Today* **26**, 38-39 (2008).

Vaucher, S., Nicula, R., Català-Civera, J. –M., Schmitt, B. & Patterson, B. In situ synchrotron radiation monitoring of phase transitions during microwave heating of Al-Cu-Fe alloys. *Journal of Materials Research* **23**, 170-175 (2008). [DOI:10.1557/jmr.2008.0009](https://doi.org/10.1557/jmr.2008.0009)

Wasmer, K., Ballif, C., Pouvreau, C., Schulz, D. & Michler, J. Dicing of gallium-arsenide high performance laser diodes for industrial applications. Part II. Cleavage operation. *Journal of Materials Processing Technology* **198**, 105-113 (2008). [DOI:10.1016/j.jmatprotec.2007.06.054](https://doi.org/10.1016/j.jmatprotec.2007.06.054)

Wasmer, K., Ballif, C., Pouvreau, C., Schulz, D. & Michler, J. Dicing of gallium-arsenide high performance laser diodes for industrial applications. Part I. Scratching operation. *J. Mater. Proc. Technol.* **198**, 114-121 (2008). [DOI:10.1016/j.jmatprotec.2007.06.055](https://doi.org/10.1016/j.jmatprotec.2007.06.055)

Wasmer, K., Wermelinger, T., Bidiville, A., Spolenak, R. & Michler, J. In situ compression tests on micron-sized silicon pillars by Raman microscopy—Stress measurements and deformation analysis. *J. Mater. Res.* **23**, 3040-3047 (2008). [DOI:10.1557/JMR.2008.0363](https://doi.org/10.1557/JMR.2008.0363)

Yamada Pittini, Y., Daneshvari, D., Pittini, R., Vaucher, S. & Leuenberger, H. *Dielectric relaxation of monoalkyl ethers of polyethylene glycol at microwave frequencies* (Global Congress on Microwave Energy Applications GCMEA 2008 MAJIC 1st, Proceedings, 2008).

Yamada Pittini, Y. *et al.* Cole-Cole plot analysis of dielectric behavior of monoalkyl ethers of polyethylene glycol (CnEm). *Eur. Polym. J.* **44**, 1191-1199 (2008). [DOI:10.1016/j.eurpolymj.2008.01.016](https://doi.org/10.1016/j.eurpolymj.2008.01.016)

Zhang, C. *et al.* Microwave sintering of plasma-sprayed yttria stabilized zirconia electrolyte coating. *J. Eur. Ceram. Soc.* **28**, 2529-2538 (2008). [DOI:10.1016/j.jeurceramsoc.2008.03.040](https://doi.org/10.1016/j.jeurceramsoc.2008.03.040)

2007

Bidiville A., Wasmer K., "Influence of Sawing Parameters on Wafer Strength", In Proceeding of Mechanical Issues in Manufacturing & Applications of Solar Cells and Modules, Halle, Germany, 5-6 November, 2007.

Wasmer K., Moser B., Wermelinger T., Spolenak R., and Michler J., "In-Situ Compression Tests on Micron Sized Silicon Pillars Using Scanning Electron Microscopy and Raman Microscopy", Presented at EUROMAT 2007, Nürnberg, Germany, 10 - 13 September, 2007.

Östlund F., Michler J., Wasmer K., and Liefer K., "In-Situ Plastic Deformation of Gallium Arsenide Micropillars in a Scanning Electron Microscope", Presented at EUROMAT 2007, Nürnberg, Germany, 10 - 13 September, 2007.

Wasmer K., Bidiville A., Michler J., Ballif C., Van der Meer M., and Nasch P., "Effect of Strength Test Method on Silicon Wafer Strength Measurements", In Proceeding of 22nd European Photovoltaic Solar Energy & Exhibition, Milan, Italy, pp: 1135-1140, 3-7 September, 2007.

Bidiville A., Wasmer K., Michler J., Ballif C., Van der Meer M., and Nasch P., "Towards the Correlation of Mechanical Properties and Sawing Parameters of Silicon Wafers", In Proceeding of 22nd European Photovoltaic Solar Energy & Exhibition, Milan, Italy, pp: 1130-1134, 3-7 September, 2007.

Vecchione N., Balint D.S., Wasmer K., and Nikbin K.M., "Characterisation of EB-PVD Zirconia by Nanoindentation", Presented at 1st Microreliability and Nanoreliability in Key Technology Application, Berlin, Germany, 2-5 September, 2007.

Wasmer K., Moser B., Pouvreau C., and Michler J., "An Overview of Nanomaterial Testing Using In-Situ Nanoindenter", In Proceeding of COST Action E54 "Characterization of the Fine Structure and Properties of Papermaking Fibres Using New Technologies", Riga, Latvia, pp: 44-48, 25-27 April, 2007.

Moser B., Wasmer K., Barbieri L., and Michler J., "Strength and Fracture of Si Micro-Pillars: A New Scanning Electron Microscopy-Based Micro-Compression Test", *Journal of Material Research*, Vol. 22, Issue 4, pp: 1004-1011, April 2007. [DOI:10.1557/JMR.2007.0140](https://doi.org/10.1557/JMR.2007.0140).

Michler J., Wasmer K., Meier S., Östlund F., and Leifer K., "Plastic Deformation of Gallium-Arsenide Micropillars under Uniaxial Compression at Room Temperature", *Applied Physics Letters*, Vol. 90, Iss. 4, paper ID: 043123, January, 2007. [DOI:10.1063/1.2432277](https://doi.org/10.1063/1.2432277).

Wasmer K., Parlinska-Wojtan M., Gassilloud R., Pouvreau C., Tharian J., and Michler J., "Plastic Deformation Modes of Gallium-Arsenide in Nanoindentation and Nanoscratching", *Applied Physics Letters*, Vol. 90, Issue 3, paper ID: 031902, January, 2007. [DOI:10.1063/1.2431763](https://doi.org/10.1063/1.2431763).

Wasmer K., Nikbin K. M., and Webster G. A., "Prediction of Scatter in Creep Crack Growth Data from Creep Failure Strain Properties". *Journal of ASTM International (JAI)*, Vol. 3, Issue 2, paper ID: JAI13227, February, 2006, ISSN: 1546-962X, [DOI:10.1520/STP455075](https://doi.org/10.1520/STP455075) and in *Fatigue and Fracture Mechanics*, ASTM STP 1480, Vol. 35, pp: 102-114, R. E. Link, K. M. Nikbin, Eds. ASTM International, West Conshohocken, PA, 2007.

Beffort, O., Long, S., Cayron, C., Kuebler, J. & Buffat, P. A. Alloying effects on microstructure and mechanical properties of high volume fraction SiC-particle reinforced Al-MMCs made by squeeze casting infiltration. *Composites Science and Technology* **67**, 737-745 (2007).

Bolot, R., Coddet, C., Schreuders, C., Leparoux, M. & Siegmans, S. Modeling of an Inductively Coupled Plasma for the Synthesis of Nanoparticles. *J. Thermal Spray Techn.* **16** (5-6) 690-697 (2007). [DOI:10.1007/s11666-007-9078-8](https://doi.org/10.1007/s11666-007-9078-8)

Castellero, A., Uhlenhaut, D. I., Moser, B. & Löffler, J. F. Critical Poisson ratio for room-temperature embrittlement of amorphous Mg₈₅Cu₅Y₁₀. *Philosophical Magazine Letters* **87**, 383-392 (2007).

Duraiselvam, M., Galun, R., Siegmans, S., Wesling, V. & Mordike, B. L. Study of liquid impact erosion in B2-NiTi and Ti₃Al based intermetallic matrix composites on laser alloyed Ti-6Al-4V. *Advanced Engineering Materials* **9**, 171-176 (2007).

Duraiselvam, M., Galun, R., Siegmans, S., Wesling, V. & Mordike, B. L. Investigation of hydroabrasive erosion of laser alloyed nickel and titanium based intermetallic matrix composites with TiC reinforcement. *Surface Engineering* **23**, 425-430 (2007).

Hadad, M., Hitzek, R., Buegler, P., Rohr, L. & Siegmans, S. Wear performance of sandwich structured WC-Co-Cr thermally sprayed coatings using different intermediate layers. *Wear* **263**, 691-699 (2007).

Hadad, M. *et al.* Adhesion tests for thermal spray coatings: Correlation of bond strength and interfacial toughness. *Surface Engineering* **23**, 279-283 (2007).

Hadad, M., Siegmann, S., Rohr, L., Hitzek, R. & Bürgler, P. *Mechanical and tribological investigations of new and locally refurbished WC-Co-Cr coatings (patent pending)*. (Poster presented at the International Thermal Spray Conference & Exposition, ITSC 2007, 2007).

Hadad, M., Siegmann, S., Rohr, L., Hitzek, R. & Bürgler, P. *Mechanische und tribologische Untersuchungen an neuen und lokal aufgearbeiteten WC-Co-Cr Beschichtungen*. (KTI Medtech 2007).

Hadad M. *L'évaluation de l'adhérence de WC-Co-Cr multi-couches déposés par projection thermique*. Solothurn. Switzerland: SGO-SST, 2007

Hadad M. *Wear performance of sandwich structured WC-Co-Cr thermally sprayed coatings using different intermediate layers*. In: Elsevier, editor. *Wear of material (WOM)*. Montreal, Canada: Wear Journal, 2007.

Hadad M. *Adhesion evaluation and impact behaviour of sandwich structured based WC-Co-Cr thermally sprayed coatings*. 3 RIPT 2007- Lille. France 2007.

Marot G, Démarécaux P, Lesage J, Hadad M, Siegmann S, Staia MH. *The Interfacial Indentation Test to Determine Adhesion and Residual Stresses in NiCr VPS Coatings*. 3 RIPT 2007. - Lille France, 2007.

Marcano Z, Lesage J, Chicot D, Hadad M, Siegmann S, Mesmacque G, Puchi-Cabrera ES, Staia MH. *Microstructure and adhesion of CrC-NiCr atmospheric plasma sprayed coatings*. 3 RIPT 2007- Lille. France, 2007.

Jaeggi, C., Leparoux, M. & Siegmann, S. *Thermally sprayed open porous titanium coatings: Process stability and in-vivo response*. (Poster presented at the KTI/CTI Medtech Event, 2007, 2007).

Kern, P. & Zinger, O. Purified titanium oxide with novel morphologies upon spark anodization of Ti alloys in mixed H₂SO₄/H₃PO₄ electrolytes. *Journal of Biomedical Materials Research - Part A* **80**, 283-296 (2007).

Leconte, Y. *et al.* *Structural study of SiC nanoparticles grown by inductively coupled plasma and laser pyrolysis for nanostructured ceramics elaboration*. (Materials Research Society Symposium Proceedings, Vol. 981 Ser. 981, 2007).

Leparoux, S., Diot, C., Dubach, A. & Vaucher, S. Synthesis of silicon carbide coating on diamond by microwave heating of diamond and silicon powder: A heteroepitaxial growth. *Scripta Materialia* **57**, 595-597 (2007). [DOI:10.1016/j.scriptamat.2007.06.016](https://doi.org/10.1016/j.scriptamat.2007.06.016)

Nelis, T. *et al.* A simple method for measuring plasma power in rf-GDOES instruments. *Analytical and Bioanalytical Chemistry* **389**, 763-767 (2007).

Pittini, Y. Y. et al. *Effect of PEG Number on dielectric properties of paraffin base-PEG polymers at microwave frequencies*. (Symposium on Heating by Electromagnetic Sources, 2007).

Schmid, H., Leparoux, M., Schreuders, C. & Dvorak, M. *Nano-particle characterization by means of SEM and quantitative image analysis*. (Poster presented at the POWTECH with PARTEC Congress, 2007, 2007).

Siegmann, S., Kern, P., Rohr, L. & Bandyopadhyay, P. P. *Tribological and corrosion behavior of vacuum plasma sprayed Ti-Zr-Ni quasicrystalline coatings*. (International Thermal Spray Conference, Global Coating Solutions, 2007).

Siegmann, S., Kern, P., Rohr, L. & Bandyopadhyay, P. P. Tribological and corrosion behavior of vacuum plasma sprayed Ti-Zr-Ni quasicrystalline coatings. *Journal of Thermal Spray Technology* **16**, 947-953 (2007).

Thünemann, M., Beffort, O., Kleiner, S. & Vogt, U. Aluminum matrix composites based on preceramic-polymer-bonded SiC preforms. *Composites Science and Technology* **67**, 2377-2383 (2007).

Vaucher, S. et al. On-line tools for microscopic and macroscopic monitoring of microwave processing. *Physica B: Condensed Matter* **398**, 191-195 (2007). [DOI:10.1016/j.physb.2007.04.064](https://doi.org/10.1016/j.physb.2007.04.064)

2006

Aeberhard, M., Michler, J. & Nelis, T. Universell, schnell, präzise. *JOT, Journal für Oberflächentechnik* **46**, 40-44 (2006).

Beffort, O. et al. Interface formation in infiltrated Al(Si)/diamond composites. *Diamond and Related Materials* **15**, 1250-1260 (2006).

Bengtson, A. & Nelis, T. The concept of constant emission yield in GDOES. *Analytical and Bioanalytical Chemistry* **385**, 568-585 (2006).

Bouillaguet, S. et al. Hydrothermal and mechanical stresses degrade fiber-matrix interfacial bond strength in dental fiber-reinforced composites. *Journal of Biomedical Materials Research Part B-Applied Biomaterials* **76B**, 98-105 (2006).

Bret, T., Utke, I., Hoffmann, P., Abourida, M. & Doppelt, P. Electron range effects in focused electron beam induced deposition of 3D nanostructures. *Microelectronic Engineering* **83**, 1482-1486 (2006).

Chudoba, T., Schwaller, P., Rabe, R., Breguet, J. M. & Michler, J. Comparison of nanoindentation results obtained with Berkovich and cube-corner indenters. *Philosophical Magazine* **86**, 5265-5283 (2006).

Clévy, C., Hubert, A., Fahlbusch, S., Chaillet, N. & Michler, J. *Design, fabrication and characterization of a flexible system based on thermal glue for in air and in SEM microassembly*. (Third International Precision Assembly Seminar (IPAS'2006), 2006).

Fahlbusch, S. et al. *Scanning electron microscopy based manipulation and characterisation of nano-scale objects*. (4th IFAC-Symposium on Mechatronic Systems (MECHATRONICS 2006), 2006).

Fahlbusch, S., Philippe, L., Moser, B. & Michler, J. *In-situ material testing devices and methods*. (Poster presented at Masmicro Demonstration Day, 2006).

Friedli, V., Utke, I., Michler, J. & Hoffmann, P. *Prediction of impinging precursor molecule distribution for focused particle beam deposition and etching*. (Poster presented at the 50th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN 2006), 2006).

Gassilloud, R., Michler, J., Ballif, C., Gasser, P. & Schmuki, P. Selective etching of n-InP(1 0 0) triggered at surface dislocations induced by nanoscratching. *Electrochimica Acta* **51**, 2182-2187 (2006).

Hadad, M. et al. Tribological behaviour Of Si₃N₄ and Si₃N₄-TiN based composites and multi-layer laminates. *Wear* **260**, 634-641 (2006). [DOI:10.1016/j.wear.2005.03.027](https://doi.org/10.1016/j.wear.2005.03.027)

Herzog, A., Vogt, U., Siegmann, S. & Beffort, O. Aluminium metal matrix composites based on biomorphic silicon carbide. *Advanced Engineering Materials* **8**, 980-983 (2006).

Hoffmann, S. et al. Measurement of the bending strength of vapor-liquid-solid grown silicon nanowires. *Nano Letters* **6**, 622-625 (2006).

Hohl, M. et al. Pulsed r.f.-glow-discharge time-of-flight mass spectrometry for fast surface and interface analysis of conductive and non-conductive materials. *Surface and Interface Analysis* **38**, 292-295 (2006).

Jaeggi, C. et al. Film formation and characterization of anodic oxides on titanium for biomedical applications. *Surface and Interface Analysis* **38**, 182-185 (2006).

Jaeggi, C. Electrochemical formation and local modification of titanium oxide films , 146 pp. (2006).

Kaufmann, H. & Kleiner, S. in *Magnesium Technology: Metallurgy, Design Data, Applications*.(eds Friedrich, H. E. & Mordike, B. L.) 258-268 (Springer, Berlin, 2006).

Kern, P., Jaeggi, C., Utke, I., Friedli, V. & Michler, J. Local electron beam induced reduction and crystallization of amorphous titania films. *Applied Physics Letters* **89** (2006).

Kern, P., Michler, J. & Zinger, O. *Purified oxides with novel morphologies upon spark anodization of Ti-alloys*. (Poster presented at the 20th European Conference on Biomaterials, ESB 2006, 2006).

Kern, P., Müller, Y., Patscheider, J. & Michler, J. Electron-beam-induced topographical, chemical, and structural patterning of amorphous titanium oxide films. *J. Phys. Chem. B* **110**, 23660-23668 (2006).

Kern, P., Schwaller, P. & Michler, J. Electrolytic deposition of titania films as interference coatings on biomedical implants: Microstructure, chemistry and nano-mechanical properties. *Thin Solid Films* **494**, 279-286 (2006).

Kleiner, S., Khalid, F. A., Ruch, P. W., Meier, S. & Beffort, O. Effect of diamond crystallographic orientation on dissolution and carbide formation in contact with liquid aluminium. *Scripta Materialia* **55**, 291-294 (2006).

Margadant, N. *et al.* Impact of probing volume from different mechanical measurement methods on elastic properties of thermally sprayed Ni-based coatings on a mesoscopic scale. *Surface & Coatings Technology* **200**, 2805-2820 (2006).

Marot, G. *et al.* Interfacial indentation and shear tests to determine the adhesion of thermal spray coatings. *Surface & Coatings Technology* **201**, 2080-2085 (2006). [DOI:10.1016/j.surfcoat.2006.04.046](https://doi.org/10.1016/j.surfcoat.2006.04.046)

Moser, B., Hanlon, T., Kumar, K. S. & Suresh, S. Cyclic strain hardening of nanocrystalline nickel. *Scripta Materialia* **54**, 1151-1155 (2006).

Moser, B., Schwaiger, R. & Dao, M. in *Nanostructured coatings* (eds Cavaleiro, A. & De Hosson, J. T. M.) 27-75 (Springer, New York, 2006).

Nelis, T. Point sur les SDL: Spectromètres à décharges luminescentes. *La gazette du vide* **11**, 14-15 (2006).

Nelis, T., Aeberhard, M., Hohl, M., Rohr, L. & Michler, J. Characterisation of a pulsed rf-glow discharge in view of its use in OES. *Journal of Analytical Atomic Spectrometry* **21**, 112-125 (2006).

Nelis, T. & Pallosi, J. Glow discharge as a tool for surface and interface analysis. *Applied Spectroscopy Reviews* **41**, 227-258 (2006).

Perentes, A., Bret, T., Utke, I., Hoffmann, P. & Vaupel, M. Real-time reflectometry-controlled focused-electron-beam-induced deposition of transparent materials. *Journal of Vacuum Science & Technology B* **24**, 587-591 (2006).

Ricard, C. *et al.* Feasibility of contact-less temperature control by microwave radiometry during sintering of powdered SiC and Al/SiC samples. *Microwave and Optical Technology Letters* **48**, 2037-2041 (2006).

Rohr, L. & Michler, J. *In situ observation of deformation modes and quantitative assessment of micro/nano mechanical properties.* (5th International Conference on Mechanics and Materials in

Design, 2006).

Ruch, P. W., Beffort, O., Kleiner, S., Weber, L. & Uggowitzer, P. J. Selective interfacial bonding in Al(Si)-diamond composites and its effect on thermal conductivity. *Composites Science and Technology* **66**, 2677-2685 (2006).

Schneider, K. E., Belashchenko, V., Dratwinski, M., Siegmann, S. & Zagorski, A. Thermal spraying for power generation components. , 271 (2006).

Schreuders, C. Synthèse par plasma inductif de particules nanométriques de silicium. Optimisation de la trempe. , 158 pp (2006).

Schwaller, P. *et al.* Rapid depth profiling of lead zirconate titanate (PZT) thin films by pulsed glow-discharge optical emission spectroscopy. *Surface and Interface Analysis* **38**, 757-760 (2006).

Shin, J. W. Process monitoring of alumina nanoparticle synthesis by inductively coupled RF thermal plasma. , 117 pp (2006).

Shin, J. W. *et al.* The influence of process parameters on precursor evaporation for alumina nanopowder synthesis in an inductively coupled rf thermal plasma. *Plasma Sources Science and Technology* **15**, 441-449 (2006).

Utke, I., Friedli, V., Amorosi, S., Michler, J. & Hoffmann, P. Measurement and simulation of impinging precursor molecule distribution in focused particle beam deposition/etch systems. *Microelectronic Engineering* **83**, 1499-1502 (2006).

Utke, I. *et al.* Tensile strengths of metal-containing joints fabricated by focused electron beam induced deposition. *Advanced Engineering Materials* **8**, 155-157 (2006).

Utke, I. *et al.* Density determination of focused-electron-beam-induced deposits with simple cantilever-based method. *Applied Physics Letters* **88**, 3 pp (2006).

Vaucher, S., Catala-Civera, J. M., Sarua, A., Pomeroy, J. & Kuball, M. Phase selectivity of microwave heating evidenced by Raman spectroscopy. *Journal of Applied Physics* **99** (2006).

Moser B., Schwaiger R., Wasmer K., Oestlund F., and Michler J., "In-Situ Micro-Compression Tests: Observing the Deformation Behavior of Micron Sized Columns in the SEM", Presented at Materials Research Society Symposium EE: Size Effects in the Deformation of Materials - Experiments and Modelling, Boston, USA, 27 November – 1 December, 2006.

Wasmer K., Nikbin K. M., and Webster G. A., "Influence of Materials Properties Variation on Creep Crack Growth Predictions Using Monte Carlo Simulations", In Proceeding of 8th International Conference on Engineering Structural Integrity Assessment (ESIA8), Manchester, UK, pp: 163-182, 24-25 October,

2006, ISBN: 9780955299407.

Wasmer K., "Analysis of Creep Crack Initiation and Growth in Laboratory Specimens", In Proceeding of 16th European Conference on Fracture (ECF16), Alexandroupolis, Greece, 3-7 July, 2006, ISBN: 1-4020-4971-4 and in Fracture of Nano and Engineering Materials and Structures, Springer Netherland, Part B, pp: 479-480, 2006, ISBN: 978-1-4020-4971-2. [DOI:10.1007/1-4020-4972-2_237](https://doi.org/10.1007/1-4020-4972-2_237).

Wasmer K., Pouvreau C., Ballif C., and Michler J., "Scratching and Brittle Fracture of Semiconductor In-Situ Scanning Electron Microscope", In Proceeding of 16th European Conference on Fracture (ECF16), Alexandroupolis, Greece, 3-7 July, 2006, ISBN: 1-4020-4971-4 and in Fracture of Nano and Engineering Materials and Structures, Springer Netherland, Part B, pp: 117-118, 2006, ISBN: 978-1-4020-4971-2, [DOI:10.1007/1-4020-4972-2_56](https://doi.org/10.1007/1-4020-4972-2_56).

Pouvreau C., Wasmer K., Giovanola J., Michler J., Breguet J-M., and Karimi A., "In-Situ Scanning Electron Microscope Indentation of Gallium-Arsenide", In Proceeding of 16th European Conference on Fracture (ECF16), Alexandroupolis, Greece, 3-7 July, 2006, ISBN: 1-4020-4971-4 and in Fracture of Nano and Engineering Materials and Structures, Springer Netherland, Part B, pp: 61-62, 2006, ISBN: 978-1-4020-4971-2. [DOI:10.1007/1-4020-4972-2_29](https://doi.org/10.1007/1-4020-4972-2_29).

Wasmer K., Nikbin K. M., and Webster G. A., "Sensitivity Analysis using Monte Carlo Simulation on Creep Crack Growth", Presented at the Forum for Engineering Structural Integrity (FESI), TC12 – Probabilistic Interpretation of Mechanical Property Data, European Structural Integrity Society (ESIS), Royal Academy of Engineering, London, UK, 9th June, 2006.

Zhang, G., Leparoux, S., Liao, H. & Coddet, C. Microwave sintering of poly-ether-ether-ketone (PEEK) based coatings deposited on metallic substrate. *Scripta Materialia* **55**, 621-624 (2006).

Zimmermann, T. *et al.* in *Cellulose Nanocomposites* (eds Oksman, K. & Sain, M.) 33-47 (ACS, Washington, 2006).

Hadad M., Bürgler P, Hitzek R, Siegmann S, Patent: Verfahren zum Wiederherrichten von abgenutzten Oberflächen hartstoffbeschichteter Bauteile. CH, 2006. p.10.

2005

Jaeggi, C., Kern, P., Michler, J., et al. Anodic thin films on titanium used as masks for surface micropatterning of biomedical devices. *Surface & Coatings Technology* **200**, 1913-1919 (2005). [DOI:10.1016/j.surfcoat.2005.08.021](https://doi.org/10.1016/j.surfcoat.2005.08.021)

Wasmer K., Nikbin K. M., and Webster G. A., "Prediction of Scatter in Creep Crack Growth Data from Creep Failure Strain Properties". In Proceeding of 5th International ASTM/ESIS Symposium on Fatigue and Fracture (35th ASTM National Symposium on Fatigue and Fracture Mechanics), Reno, USA, 18-20 May, 2005.

Ballif C., Gassilloud R., Rabe R., Michler J., and Wasmer K., "*Plastic Deformation and Crack Propagation*

in *Brittle Semiconductors: From Dislocation and Phase Generation to Crack Control over Macroscopic Distances*". In Proceeding of Freiburger Siliciumtagen, Freiburger, Germany, 15 - 17 June, 2005.

Solletti J.-M., Parlinska-Wojtan M., Tharian J., Wasmer K., Michler J., Ballif C., Schulz D., and Karimi A., "*Fracture Mechanisms of GaAs under Nanoscratching*", in Proceeding of Materials Research Society Symposium R: Fundamentals of Nanoindentation and Nanotribology III, edited by Kathryn J. Wahl, Norbert Huber, Adrian B. Mann, David F. Bahr, and Y.-T. Cheng, Boston, U.S.A., Vol. 841, pp: 259-264, 2005, ISBN: 1-55899-789-X.

Wasmer K., Ballif C., Gassilloud R., Pouvreau C., Rabe R., Michler J., Breguet J.-M., Solletti J.-M., Karimi A., and Schulz D. Aspects of Cleavage Fracture of Brittle Semiconductors from the Nanometre to the Centimetre Scale. *Advanced Engineering Materials*, Vol. **7**, Issue 5, pp: 309-317, June, 2005, ISSN: 1438-1656. [DOI:10.1002/adem.200500044](https://doi.org/10.1002/adem.200500044).

Wasmer K., Nikbin K. M., and Webster G. A., "Sensitivity of Creep Crack Initiation and Growth in Plates to Material Properties Variations", *Fatigue and Fracture Mechanics*, ASTM STP 1461, Vol. 34, pp: 457-471, S. R. Daniewicz, J. C. Newman and K.-H. Schwalbe, Eds., ASTM International, West Conshohocken, PA, 2004 or in *Journal of ASTM International (JAI)*, Vol. 2, Issue 1, paper ID: JAI12030, January, 2005, ISSN: 1546-962X. [DOI:10.1520/JAI12030](https://doi.org/10.1520/JAI12030).

Battabyal, M., Beffort, O., Kleiner, S., Vaucher, S. & Rohr, L. *Heat transport across the metal-diamond interface*. (Poster presented at the 8th European Conference on Diamond, Diamond-like Materials, Carbon Nanotubes, and Nitrides.

Brintlinger, T. *et al.* Electrodes for carbon nanotube devices by focused electron beam induced deposition of gold. *Journal of Vacuum Science & Technology B* **23**, 3174-3177 (2005).

Duraiselvam, M., Galun, R., Siegmann, S., Wesling, V. & Mordike, B. L. Particle-laden liquid impact erosion characteristics of laser clad Ni-based intermetallic matrix composites with TiC and WC reinforcements. *Lasers in Engineering* **15**, 355-373 (2005).

Schwaller, P. *et al.* Single-target DC-pulsed deposition of lead zirconate titanate thin films: Investigation of the chemical and mechanical properties by glow-discharge optical emission spectroscopy and nanoindentation. *Surface and Coatings Technology* **200**, 1566-1571 (2005).

Thapliyal, R. *et al.* PZT thin film deposition on Si wafers and optical fibers prepared by reactive DC pulsed magnetron sputtering from a single metallic target. *Surface & coatings technology* **200** (2005).

Hadad M, Marot G, Démarécaux P, Lesage J, Michler J, Siegmann S. *Adhesion tests for thermal spray coatings: Application range of tensile, shear and interfacial indentation methods*. In: Lugscheider E, editor. ITSC 2005 Thermal Spray connects: Explore its surfacing potential! Basel, Switzerland: DVS-Verlag GmbH, 2005. p.759.

Blugan G, Hadad M, Janczak-Rusch J, Kuebler J, Graule T. Fractography, mechanical properties, and microstructure of commercial silicon nitride-titanium nitride composites. *J Am Ceram Soc* **88**, 926 (2005).

Hadad M. *Le comportement tribologique de composite Si₃N₄-TiN et ses structures multicouches laminées*. Sixième rencontre romande interassociation Yverdon- Switzerland, 2005.

Hadad M. *Adhesion tests for thermal spray coatings: Application range of tensile, shear and interfacial indentation methods*. In: Lugscheider E, editor. ITSC 2005 Thermal Spray connects: Explore its surfacing potential! Basel, Switzerland: DVS-Verlag GmbH, 2005.

Last updated: Tuesday, November 08, 2011