

Peer reviewed articles

- 114) Podolskiy, A., Tabachinkova, E., Schafner, E., Rentenberger, C., Maier, S., Joni, B., Tikhonovsky, M., Tortika, A., and Zehetbauer, M. (2017) Microstructure and mechanical properties peculiarities of the CoCrFeNiMn High Entropy Alloy after High Pressure Torsion at 300 and 77 K. *Scripta Materialia*, **in submission**
- 113) Janoska, M., Boczkal, G., Setman, D., and Schafner, E. (2018) Optimization of Mg alloys deformed by HPT for hydrogen storage. *Journal of Alloys and Compounds*, **submitted**
- 112) Rogl, G., Yubuta, K., Romaka, V., Michor, H., Schafner, E., Grytsiv, A., Bauer, E., and P., R. (2018) Spinodal half-Heusler thermoelectrics, $Ti_{0.5}Zr_{0.5}NiSn$ and $Ti_{0.5}Zr_{0.5}NiSn_{0.98}Sb_{0.02}$: Physical properties at low temperatures. *XXX*, **in submission**
- 111) Wei, K. X., Horky, J., Wei, W., Zehetbauer, M., Setman, D., Schafner, E., and Hu, J. (2018) Enhancing tensile properties of Cu and Cu-Al alloys cryogenically processed by high pressure torsion. *Journal of Alloys and Compounds*, **771**, 317–321
- 110) Schuster, R., Habler, G., Schafner, E., and Abart, R. (2018) Microstructural and textural evolution of calcite deformed to high shear strain by high-pressure torsion. *Journal of Structural Geology*, **in press**
- 109) Podolskiy, A., Schafner, E., Tabachnikova, E., Tikhonovsky, M., and Zehetbauer, M. (2018) Thermally activated deformation of nanocrystalline and coarse grained CoCr-FeNiMn high entropy alloy in the temperature range 4.2–350 K. *Low Temperature Physics*, **44**, 976–982
- 108) Rogl, G., Grytsiv, A., Anbalagan, R., Bursik, J., Kerber, M., Schafner, E., Zehetbauer, M., Bauer, E., and Rogl, P. (2018) Direct SPD-processing to achieve high-ZT skutterudites. *Acta Materialia*, **159**, 352–363
- 107) Cengeri, P., Kerber, M., Schafner, E., Zehetbauer, M., and Setman, D. (2018) Strength changes during heat treatment of HPT-processed Copper and Nickel. *Materials Science and Engineering A*, **submitted**
- 106) Kovács, Z., Schafner, E., Kovács Kis, A., Szommer, P., and Révész, A. (2018) High pressure torsion of a vitreous bulk metallic glass near the glass transition temperature. *Journal of Non-Crystalline Solids*, **498**, 25–31
- 105) Schuster, R., Schafner, E., Schell, N., Kunz, M., and Abart, R. (2017) Microstructure of calcite deformed by high-pressure torsion: an X-ray line profile study. *Tectonophysics*, **721**, 448–461
- 104) Spieckermann, F., Polt, G., Wilhelm, H., Kerber, M., Schafner, E., Soprunyuk, V., Reinecker, S., M. and Bernstorff, and Zehetbauer, M. (2017) Dislocation movement induced by molecular relaxations in isotactic polypropylene. *Macromolecules*, **50**, 6362–6368

- 103) Schafner, E., Kerber, M., Spieckermann, F., Fischer, T., Schuster, R., and von Baeckmann C. (2017) In-situ X-ray synchrotron profile analysis during high pressure torsion of ti. Solanki, K., Orlov, D., Singh, A., and Neelameggham, N. (eds.), *Magnesium Technology 2017*, pp. 645–651
- 102) Révész, Á., Gajdics, M., Schafner, E., Calizzi, M., and Pasquini, L. (2017) Dehydrogenation-hydrogenation characteristics of nanocrystalline Mg_2Ni powders compacted by high-pressure torsion. *Journal of Alloys and Compounds*, **702**, 84–91
- 101) Podolskiy, A., Tabachnikova, E., Bonarski, B., Setman, D., Mangler, C., Schafner, E., Bengus, V., and Zehetbauer, M. (2016) Low temperature mechanical properties of nanostructured Zirconium processed by high pressure torsion at 300 and 77K. *Kovove Materialy-Metallic Materials*, **54**, 1–8
- 100) Gajdics, M., Calizzi, M., Pasquini, L., Schafner, E., and Révész, A. (2016) Characterization of a nanocrystalline Mg-Ni alloy processed by high-pressure torsion during hydrogenation and dehydrogenation. *Int. J. Hydrogen Energ.*, **41**, 9803–9809
- 99) Naderi, M., Peterlechner, M., Schafner, E., Divinski, S., and Wilde, G. (2015) Kinetic, volumetric and structural effects induced by liquid Ga penetration into ultrafine grained Al. *Acta Materialia*, **99**, 196–205
- 98) Polt, G., Spieckermann, F., Wilhelm, H., Fischer, C., Schafner, E., Bernstorff, S., and Zehetbauer, M. (2015) Crystalline plasticity in isotactic polypropylene below and above the glass transition temperature. *Express Polymer Letters*, **9**, 894–900
- 97) Panigrahi, A., Bönisch, M., Waitz, T., Schafner, E., Calin, M., Eckert, J., Skrotzki, W., and Zehetbauer, M. (2015) Phase transformations and mechanical properties of biocompatible Ti-16.1Nb processed by severe plastic deformation. *Journal of Alloys and Compounds*, **628**, 434–441
- 96) Rogl, G., Grytsiv, A., Rogl, P., Bauer, E., Hohenhofer, M., Anbalagan, R., Mallik, R., and E., S. (2014) Nanostructuring of p- and n-type skutterudites reaching figures of merit of approximately 1.3 and 1.6, respectively. *Acta Materialia*, **76**, 434–448
- 95) Podolskiy, A., Geist, D., Schafner, E., Tabachnikova, E., and Zehetbauer, M. (2014) Structure and properties of nanostructured Cobalt processed by high pressure torsion at temperatures 300 and 77 K. *IOP Conf.Ser. Mater. Sci. Eng*, **63**
- 94) Kovacs, Z., Schafner, E., Sommer, P., and Revesz, A. (2014) Localization of plastic deformation along shear bands in vitreloy bulk metallic glass during high pressure torsion. *Journal of Alloys and Compounds*, **593**, 207–212
- 93) Rogl, G., Grytsiv, A., Rogl, P., Royanian, E., Bauer, E., Horiky, J., Setman, D., Schafner, E., and Zehetbauer, M. (2013) Dependence of thermoelectric behaviour on severe plastic deformation parameters: A case study on p-type skutterudite $DD_{0.60}Fe_3CoSb_{12}$. *Acta Materialia*, **61**, 6778–6789
- 92) Podolskiy, A., Mangler, C., Schafner, E., Tabachnikova, E., and Zehetbauer, M. (2013) Microstructure and mechanical properties of high purity nanostructured titanium processed by high pressure torsion at temperatures 300 and 77 K. *Journal of Materials Science*, **48**, 4689–4697

- 91) Polt, G., Spieckermann, F., Wilhelm, H., Kerber, M., Schafner, E., Bernstorff, S., and Zehetbauer, M. (2013) The role of dislocations in γ -*iPP* under plastic deformation investigated by X-ray line profile analysis. *Mechanics of Materials*, **67**, 126–132
- 90) Lohmiller, J., Baumbusch, R., Kerber, M., Castrup, A., Hahn, H., Schafner, E., Zehetbauer, M., Kraft, O., and P.A., G. (2013) Following the deformation behavior of nanocrystalline Pd films on polyimide substrates using in situ synchrotron XRD. *Mechanics of Materials*, **67**, 65–73
- 89) Kovács, Z., Henits, P., Varga, L., Schafner, E., and Révész, Á. (2013) Stability of medium range order in Al-based metallic glass compacted by severe plastic deformation. *Journal of Alloys and Compounds*, **561**, 5–9
- 88) Joni, B., Schafner, E., Zehetbauer, M., and Ungar, T. (2013) Correlation between the microstructure studied by X-ray line profile analysis and the strength of high-pressure-torsion processed Nb and Ta. *Acta Materialia*, **61**, 632–642
- 87) Rogl, G., Setman, D., Schafner, E., Horiky, J., Kerber, M., Zehetbauer, M., Falmbigl, M., Rogl, P., and Bauer, E. (2012) Changes of thermoelectric properties and hardness after HPT processing of micro- and nanostructured skutterudites. Zlatic, V. and Hewson, A. (eds.), *Proceedings of NATO Advanced Research Workshop, Hvar, Croatia 2011*, September, vol. 7 of *The NATO Science for Peace and Security Programme, Series B: Physics and Biophysics*, pp. 81–91, Springer Science and Business Media B.V
- 86) Spieckermann, F., Polt, G., Wilhelm, H., Kerber, E., M. Schafner, and Zehetbauer, M. (2012) The role of dislocations for the plastic deformation of semicrystalline polymers as investigated by Multireflection X-ray Line Profile Analysis. *Journal of Applied Polymer Science*, **125**, 4150–4154
- 85) Rogl, G., et al. (2012) Effect of HPT processing on the structure, thermoelectric and mechanical properties of $Sr_{0.07}Ba_{0.07}Yb_{0.07}Co_4Sb_{12}$. *Journal of Alloys and Compounds*, **537**, 183–189
- 84) Révész, Á., Kis-Tóth, Á., Varga, L., Schafner, E., Bakonyi, I., and Spassov, T. (2012) Hydrogen storage of melt-spun amorphous $Mg_{65}Ni_{20}Cu_5Y_{10}$ alloy deformed by high-pressure torsion. *Int. J. Hydrogen Energ.*, **37**, 5769–5776
- 83) Rogl, G., Setman, D., Schafner, E., Horiky, K. M., Zehetbauer, M., Falmbigl, M., Rogl, P., Royanian, E., and Bauer, E. (2012) High pressure torsion, a new processing route for thermoelectrics of high ZTs by means of severe plastic deformation. *Acta Materialia*, **60**, 2146–2157
- 82) Kerber, M., Zehetbauer, M., Schafner, E., Spieckermann, F., Bernstorff, S., and Ungar, T. (2011) X-ray line profile analysis - An ideal tool to quantify structural parameters of nanomaterials. *JOM-US*, **63-7**, 61–69/84
- 81) Kahofer, S., Zehetbauer, M., Danninger, H., Schafner, E., Kerber, M., and Horiky, J. (2011) Nanocrystallization and dissolution of immiscible powder alloys using high pressure torsion. *Mater. Sci. Forum*, **667-669**, 151–156

- 80) Podolskiy, A., Bonarski, B., Setman, C., D. Mangler, Schafner, E., Tabachnikova, E., and Zehetbauer, M. (2011) Microstructure and properties of nanostructured zirconium processed by high pressure torsion. *Mater. Sci. Forum*, **667-669**, 433–438
- 79) Schafner, E. (2011) Effect of hydrostatic pressure on the microstructure and mechanical properties during and after high pressure torsion. *Mater. Sci. Forum*, **667-669**, 657–664
- 78) Schafner, E. (2011) Strength response upon pressure release after high pressure torsion deformation. *Scripta Materialia*, **64**, 130–132
- 77) Henits, P., Kovacs, Z., Schafner, E., Varga, L., Labara, J., and Revesz, A. (2010) Nanocrystallization in $Al_{85}Ce_8Ni_5Co_2$ amorphous alloy obtained by different strain rate during high pressure torsion. *Journal of Alloys and Compounds*, **504S**, 91–94
- 76) Spieckermann, F., Wilhelm, H., Kerber, M., Schafner, E., Polt, G., Bernstorff, S., Addiego, F., and Zehetbauer, M. (2010) Determination of lamella thickness distributions in isotactic polypropylene by X-ray line profile analysis. *Polymer*, **15**, 4195–4199
- 75) Bonarski, B., Schafner, E., Perk, M., Szczerba, M., Mikulowski, B., and Zehetbauer, M. (2010) Effects of recrystallization on texture, microstructure and mechanical properties in HPT-deformed pure Mg. *Journal of Physics: Conference Series*, **240**, 012133
- 74) Spieckermann, F., Wilhelm, H., Schafner, E., Kerber, M., Bernstorff, S., and Zehetbauer, M. (2010) Plasticity and X-ray line profile analysis of the semicrystalline polymer Poly(3-hydroxybutyrate). *Journal of Physics: Conference Series*, **240**, 012146
- 73) Henits, P., Revesz, A., Schafner, E., Szabo, P. J., Labar, J. L., Varga, L. K., and Kovacs, Z. (2010) Correlation between microstructural evolution during high-pressure torsion and isothermal heat treatment of amorphous $Al_{85}Gd_8Ni_5Co_2$ alloy. *Journal of Materials Research*, **25**, 1388–1397
- 72) Revesz, A., Kovacs, Z., Szabo, P. J., Schafner, E., Varga, L. K., and Hobor, S. (2010) High pressure torsion of binary $Cu_{64.5}Zr_{35.5}$ alloy. *Physica Status Solidi A*, **207**, 1185–1189, Fall Meeting of the European-Materials-Research-Society, Warsaw, Poland, Sep 14-18, 2009
- 71) Zhang, L., Grytsiv, A., Bonarski, B., Kerber, M., Setman, D., Schafner, E., Rogl, P., Bauer, E., Hilscher, G., and Zehetbauer, M. (2010) Impact of high pressure torsion on the microstructure and physical properties of $Pr_{0.67}Fe_3CoSb_{12}$, $Pr_{0.71}Fe_{3.5}Ni_{0.5}Sb_{12}$ and $Ba_{0.06}Co_4Sb_{12}$. *Journal of Alloys and Compounds*, **494**, 78–83
- 70) Schafner, E. (2010) Effects of releasing the hydrostatic pressure on the nanostructure after severe plastic deformation of Cu. *Scripta Materialia*, **62**, 423–426
- 69) Setman, D., Kerber, M., Schafner, E., and Zehetbauer, M. (2010) Activation enthalpies of deformation induced lattice defects in SPD nanometals measured by differential scanning calorimetry. *Metall. Mater. Trans. A*, **41**, 810–815

- 68) Kerber, M., Schafner, E., Wieczorek, A., Ribarik, G., Bernstorff, B., Ungar, T., and Zehetbauer, M. (2009) Synchrotron X-ray line profile analysis experiments for the in-situ microstructural characterisation of SPD nanometals during tensile deformation. *Int. J. Mater. Res.*, **100**, 770–774
- 67) Yagotintsev, K. A., Stetsenko, Y. E., Legchenkova, I. V., Prokhvatilov, A. I., Strzheimchny, M. A., Schafner, E., and Zehetbauer, M. (2009) Process of intercalation of C_{60} with molecular hydrogen according to X-ray diffraction data. *Low Temperature Physics*, **35**, 238–242
- 66) Angerer, P., Simunkova, H., Schafner, E., Kerber, M., Wosik, J., and Nauer, G. (2009) Structure and texture of electrochemically prepared nickel layers with co-deposited zirconia nanoparticles. *Surface and Coatings Technology*, **203**, 1438–1443
- 65) Spieckermann, F., Wilhelm, H., Schafner, E., Aifantis, E., and Zehetbauer, M. (2009) Determination of critical strains in isotactic polypropylene by cyclic loading-unloading. *J.Eng.Mater.Technol. ASME*, **131**, 011109(1–5)
- 64) Bonarski, B., Schafner, E., Mingler, B., Skrotzki, W., Mikulowski, B., and Zehetbauer, M. (2008) Texture evolution of Mg during high-pressure torsion. *Journal of Materials Science*, **43**, 7513–7518
- 63) Kovács, Z., Schafner, E., and Révész, A. (2008) Bond length changes in Vitreloy bulk metallic glass during room temperature high pressure torsion. *Journal of Materials Research*, **23**, 3409–3414
- 62) Enikeev, N., Schafner, E., Zehetbauer, M., Alexandrov, I., and Valiev, R. (2008) Observations of texture in large scale HPT-processed Cu. *Mater. Sci. Forum*, **584-586**, 367–372
- 61) Bonarski, B., Schafner, E., Mikulowski, B., and Zehetbauer M.J. (2008) Texture evolution of magnesium single crystals deformed by high-pressure torsion. *Mater. Sci. Forum*, **584-58**, 263–268
- 60) Bonarski, B., Mikulowski, B., Schafner, E., Holzleithner, C., and Zehetbauer, M. (2008) Crystallographic textures of single and polycrystalline pure Mg and Cu subjected to HPT deformation. *Archives of Metallurgy and Materials*, **53**, 117–123
- 59) Lederer, M., Groger, V., and Schafner, E. (2008) The influence of the texture on yield strength and strain hardening of high purity aluminum foils. *Archives of Metallurgy and Materials*, **53**, 69–73
- 58) Setman, D., Schafner, E., Korznikova, E., and Zehetbauer, M. (2008) The presence and nature of vacancy type defects in nanometals detained by severe plastic deformation. *Materials Science and Engineering A*, **493**, 116–122
- 57) Spieckermann, F., Wilhelm, H., Schafner, E., Ahzi, S., and Zehetbauer, M. (2008) Application of composite models to isotactic polypropylene for the determination of phase specific stress-strain curves. *Materials Science and Engineering A*, **483-484**, 76–78

- 56) Revesz, A., Schafner, E., and Kovacs, Z. (2008) Structural anisotropy in a $Zr_{57}Ti_5Cu_{20}Al_{10}Ni_8$ bulk metallic glass deformed by high pressure torsion at room temperature. *Applied Physics Letters*, **92**, 011910
- 55) Zehetbauer, M., Schafner, E., and Ungar, T. (2007) Non-microscopical methods for characterization of microstructures and properties of UFG metals. *International Journal of Materials Research*, **98**, 290–298
- 54) Duong, G., Turtelli, R., Nunes, W., Schafner, E., Hanh, N., Groessinger, R., and Knobel, M. (2007) Ultrafine $Co_{(1-x)}Zn_xFe_2O_4$ particles synthesized by hydrolysis: Effect of thermal treatment and its relationship with magnetic properties. *Journal of Non-Crystalline Solids*, **353**, 805–807
- 53) Duong, G., Hanh, N., Linh, D., Groessinger, R., Weinberger, P., Schafner, E., and Zehetbauer, M. (2007) Monodispersed nanocrystalline $Co_{(1-x)}Zn_xFe_2O_4$ particles by forced hydrolysis: Synthesis and characterization. *Journal of Magnetism and Magnetic Materials*, **311**, 46–50
- 52) Ungar, T., Schafner, E., Hanak, P., Bernstorff, S., and Zehetbauer, M. (2007) Vacancy production during plastic deformation in copper determined by in situ X-ray diffraction. *Materials Science and Engineering A*, **462**, 398–401
- 51) Schafner, E. and Kerber, M. (2007) Microstructural investigation of the annealing behaviour of high-pressure torsion (HPT) deformed copper. *Materials Science and Engineering A*, **462**, 139–143
- 50) Kuendig, A., Schweizer, T., Schafner, E., and Loeffler, J. (2007) Metallic glass/polymer composites by co-processing at similar viscosities. *Scripta Materialia*, **56**, 289–292
- 49) Zehetbauer, M., Schafner, E., Dobes, F., and Milicka, K. (2006) A critical analysis of the composite model as applied to high-temperature creep of Al and an Al-Mg alloy. *Zeitschrift fuer Metallkunde/Materials Research and Advanced Techniques*, **97**, 329–335
- 48) Schafner, E., Nyilas, K., Bernstorff, S., Zeipper, L., Zehetbauer, M., and Ungar, T. (2006) Microstructure of post-deformed ECAP-Ti investigated by multiple X-ray line profile analysis. *Zeitschrift fur Kristallographie, Supplement*, **1**, 129–134
- 47) Kerber, M., Schafner, E., Hanak, P., Ribarik, G., Bernstorff, S., Ungar, T., and Zehetbauer, M. (2006) Spatial fluctuations of the microstructure during deformation of Cu single crystals. *Zeitschrift fur Kristallographie, Supplement*, **1**, 105–110
- 46) Islamgaliev, R., Kulyasova, O., Mingler, B., Schafner, E., Korb, G., Karnthaler, H., and Zehetbauer, M. (2006) The influence of the ecap temperature on the microstructure and the mechanical properties of the AM60 magnesium alloy. et al., Y. Z. (ed.), *2006 TMS Annual Meeting*, San Antonio, TX, vol. 2006, pp. 407–411, *
- 45) Korznikova, E., Schafner, E., Steiner, G., and Zehetbauer, M. (2006) Measurements of vacancy type defects in SPD deformed Ni. et al., Y. Z. (ed.), *2006 TMS Annual Meeting*, San Antonio, TX, vol. 2006, pp. 97–102, *

- 44) Zehetbauer, M., Steiner, G., Schafner, E., Korznikov, A., and Korznikova, E. (2006) Deformation induced vacancies with severe plastic deformation: Measurements and modelling. *Materials Science Forum*, **503-504**, 57–64
- 43) Schafner, E., Dubravina, A., Mingler, B., Karnthaler, H., and Zehetbauer, M. (2006) On the microstructure of HPT processed Cu under variation of deformation parameters. *Materials Science Forum*, **503-504**, 51–56
- 42) Schafner, E., Kopacz, I., Pippan, R., and Stuewe, H.-P. (2005) Texture of equal channel angular pressed cu investigated by electron back scatter diffraction and X-ray diffraction. *Kovove Materialy-Metallic Materials*, **43**, 422–431
- 41) Schafner, E., Steiner, G., Korznikova, E., Kerber, M., and Zehetbauer, M. (2005) Lattice defect investigation of ECAP-Cu by means of X-ray line profile analysis, calorimetry and electrical resistometry. *Materials Science and Engineering A*, **410-411**, 169–173
- 40) Zehetbauer, M., Schafner, E., and Ungar, T. (2005) Quantification of nanocrystallization by means of X-ray line profile analysis. *Archives of Metallurgy and Materials*, **50**, 515–533
- 39) Kerber, M., Schafner, E., and Zehetbauer, M. (2005) Processing and evaluation of X-ray line profiles measured from nanostructured materials produced by severe plastic deformation. *Reviews on Advanced Materials Science*, **10**, 427–433
- 38) Zehetbauer, M., Zeipper, L., and Schafner, E. (2005) Modelling mechanical properties of SPD materials during and after severe plastic deformation. *Proc. NATO-ARW “Nanostructured Materials by High-Pressure Severe Plastic Deformation” Donetsk, Ukraine 2004*, ed. Y. Zhu, Springer 2005, *Nato Science Series II: Mathematics, Physics and Chemistry*, Vol. 212, 217-226
- 37) Schafner, E. and Zehetbauer, M. (2005) Characterization of nanostructured materials by X-ray line profile analysis. *Reviews on Advanced Materials Science*, **10**, 28–33
- 36) Zehetbauer, M., Schafner, E., and Ungar, T. (2005) Vacancies in plastically deformed copper. *Zeitschrift fuer Metallkunde/International Journal of Materials Research*, **96**, 1044–1048
- 35) Tarkowski, L. and Schafner, E. (2005) Structure irregularities detected by X-ray diffraction effects. *Archives of Metallurgy and Materials*, **50**, 457–461
- 34) Ungar, T., Schafner, E., Hanak, P., Bernstorff, S., and Zehetbauer, M. (2005) Vacancy concentrations determined from the diffuse background scattering of X-rays in plastically deformed copper. *Zeitschrift fuer Metallkunde/Materials Research and Advanced Techniques*, **96**, 578–583
- 33) Schafner, E., Tarkowski, L., Bonarski, J., Kopacz, I., Pippan, R., and Stuewe, H. (2005) Texture evolution and microstructure of ECAP Cu determined by XRD and EBSD. *Archives of Metallurgy and Materials*, **50**, 435–443

- 32) Budrovic, Z., Van Petegem, S., Derlet, P., Schmitt, B., Van Swygenhoven, H., Schafler, E., and Zehetbauer, M. (2005) Footprints of deformation mechanisms during in situ X-ray diffraction: Nanocrystalline and ultrafine grained Ni. *Applied Physics Letters*, **86**, 231910
- 31) Khatibi, G., Mingler, B., Schafler, E., Stickler, R., and Weiss, B. (2005) Microcharacterization of thin Cu and Al bond wires. *BHM Berg- und Hüttenmännische Monatshefte*, **150/5**, 176–180, *
- 30) Schafler, E., Simon, K., Bernstorff, S., Hanak, P., Tichy, G., Ungar, T., and Zehetbauer, M. (2005) A second-order phase-transformation of the dislocation structure during plastic deformation determined by in situ synchrotron X-ray diffraction. *Acta Materialia*, **53**, 315–322
- 29) Dubravina, A., Zehetbauer, M., Schafler, E., and Alexandrov, I. (2004) Correlation between domain size obtained by X-ray bragg profile analysis and macroscopic flow stress in severely plastically deformed copper. *Materials Science and Engineering A*, **387-389**, 817–821
- 28) Wilhelm, H., Paris, A., Schafler, E., Bernstorff, S., Bonarski, J., Ungar, T., and Zehetbauer, M. (2004) Evidence of dislocations in melt-crystallised and plastically deformed polypropylene. *Materials Science and Engineering A*, **387-389**, 1018–1022
- 27) Schafler, E. and Pippan, R. (2004) Effect of thermal treatment on microstructure in high pressure torsion (HPT) deformed nickel. *Materials Science and Engineering A*, **387-389**, 799–804
- 26) Zeipper, L., Gemeinböck, G., Korb, G., Zehetbauer, M., Schafler, E., and Mingler, B. (2004) Nanostructuring of titanium based materials by severe plastic deformation – fundamentals and application. *Proc. 10. World Conf. on Titanium, Hamburg, 2003 (Germany)*, J.Wiley VCH Weinheim, 1445-1452
- 25) Zehetbauer, M., Kohout, J., Schafler, E., Sachslehner, F., and Dubravina, A. (2004) Plastic deformation of nickel under high hydrostatic pressure. *Journal of Alloys and Compounds*, **378**, 329–334
- 24) Zehetbauer, M., Stüwe, H., Vorhauer, A., Schafler, E., and Kohout, J. (2004) The role of hydrostatic pressure in severe plastic deformation. *Proc. 2nd International Conference on Nanomaterials by Severe Plastic Deformation: Fundamentals – Processing – Applications, Vienna, Dec. 2002 (Austria)*, J.Wiley VCH Weinheim (Germany), 435-446
- 23) Zeipper, L., Zehetbauer, M., Schafler, E., Mingler, B., and Korb, G. (2004) Mechanical properties of severely plastically deformed titanium. *Proc. 2nd International Conference on Nanomaterials by Severe Plastic Deformation: Fundamentals – Processing – Applications, Vienna, Dec. 2002(Austria)*, J.Wiley VCH Weinheim, 810-816
- 22) Schafler, E., Zeipper, L., and Zehetbauer, M. (2004) Evolution of microstructure during thermal treatment in SPD titanium. *Proc. 2nd International Conference on*

- Nanomaterials by Severe Plastic Deformation: Fundamentals – Processing – Applications, Vienna, Dec. 2002 (Austria), J. Wiley VCH Weinheim (Germany), 426-432*
- 21) Tian, B., Lind, C., Schafner, E., and Paris, O. (2004) Evolution of microstructures during dynamic recrystallization and dynamic recovery in hot deformed Nimonic 80a. *Materials Science and Engineering A*, **367**, 198–204
 - 20) Zehetbauer, M., Stuewe, H., Vorhauer, A., Schafner, E., and Kohout, J. (2003) The role of hydrostatic pressure in severe plastic deformation. *Advanced Engineering Materials*, **5**, 330–337
 - 19) Milicka, K., Dobes, F., Schafner, E., and Zehetbauer, M. (2003) Comparison of X-ray line profile and dip test measurements of internal stresses during high temperature creep of copper. *Kovove Materialy-Metallic Materials*, **41**, 133–144
 - 18) Richert, M., Stuewe, H., Zehetbauer, M., Richert, J., Pippan, R., Motz, C., and Schafner, E. (2003) Work hardening and microstructure of $AlMg_5$ after severe plastic deformation by cyclic extrusion and compression. *Materials Science and Engineering A*, **355**, 180–185
 - 17) Batiashvili, B., et al. (2002) Evaluation of surface preparation techniques, SFG: Swing frame grinding and LPG: Low-temperature precision grinding, by comparison of results on alumina and silicon carbide model materials. *Key Engineering Materials*, **223**, 139–148
 - 16) Bonarski, J., Zehetbauer, M., Swiatek, Z., Schafner, E., and S., B. (2002) Structural investigation of silicon platelets for solar cells by advanced methods of X-ray diffraction. *Proc. Review Seminar Physics and Materials Science, Polish Academy of Sciences, 171-177, **
 - 15) Zehetbauer, M., Schafner, E., Ungar, T., Kopacz, I., and Bernstorff, S. (2002) Investigation of the microstructural evolution during large strain cold working of metals by means of synchrotron radiation - a comparative overview. *Journal of Engineering Materials and Technology, Transactions of the ASME*, **124**, 41–47
 - 14) Muelers, B., Zehetbauer, M., Gottstein, G., Les, P., and Schafner, E. (2002) Large strain work hardening in the alloy Al-1Mg-1Mn at low and intermediate deformation temperatures: Experiments and modelling. *Materials Science and Engineering A*, **324**, 244–250
 - 13) Schafner, E., Dubravina, A., and Kovacs, Z. (2002) Defect characterization of equal channel angular pressed Cu by selective annealing treatment. Zhu, Y., Langdon, T., R.S., M., Semiatin, S., Saran, M., and Lowe, T. (eds.), *Ultrafine Grained Materials II, ed. Zhu et al. (Warrendale, PA, TMS 2002)*, Seattle, WA, pp. 605–613, *
 - 12) Schafner, E., Zehetbauer, M., and Ungar, T. (2001) Measurement of screw and edge dislocation density by means of X-ray bragg profile analysis. *Materials Science and Engineering A*, **319-321**, 220–223
 - 11) Hebesberger, T., Schafner, E., Zehetbauer, M., Pippan, R., Ungar, T., and Bernstorff, S. (2001) Electron back scatter diffraction and synchrotron X-ray peak profile

- analysis as tools for microstructural characterization of large strain work hardened metals. *Zeitschrift fuer Metallkunde/Materials Research and Advanced Techniques*, **92**, 410–416
- 10) Schafler, E., Zehetbauer, M., Ungar, T., Bernstorff, S., and Amenitsch, H. (2000) Microscale spatial distribution of dislocations and long range internal stresses in cold worked bcc Fe. *Key Engineering Materials*, pp. 159–164
 - 9) Schafler, E. and Sachslehner, F. (2000) Electrical dislocation resistivity and the deviation from Matthiessen's rule of deformed high-purity aluminum. *Journal of Physics Condensed Matter*, **12**, 10499–10514
 - 8) Schafler, E., Zehetbauer, M., Hanak, P., Ungar, T., Hebesberger, T., Pippan, R., Mingler, B., Karnthaler, H., Amenitsch, H., and Bernstorff, S. (2000) Fragmentation in large strain cold rolled aluminium as observed by synchrotron X-ray bragg peak profile analysis (SXPA), electron back scatter diffraction (EBSD) and transmission electron microscopy (TEM). *Investigations & Applications of Severe Plastic Deformation*, ed. T.C.Lowe, and R.Z. Valiev, Kluwer Acad. Publ., 163-171 (2000)
 - 7) Schafler, E., Sitkovitch, C., Dragomir, I., Revesz, A., Zehetbauer, M., and Ungar, T. (2000) Characterization of dislocation types in a plastically deformed aluminum base alloy. *Materials Science Forum*, **321**, 92–96
 - 6) Sachslehner, F., Milnera, M., Kocer, M., and Schafler, E. (2000) Deviation from matthiessen's rule and electrical dislocation density measurement in dilute Cu-Au alloys. *Physica Status Solidi (A) Applied Research*, **179**, 407–421
 - 5) Schafler, E., Zehetbauer, M., Kopacz, I., Ungar, T., Hanak, P., Amenitsch, H., and Bernstorff, S. (1999) Microstructural parameters in large strain deformed Ni polycrystals as investigated by synchrotron radiation. *Physica Status Solidi (A) Applied Research*, **175**, 501–511
 - 4) Zehetbauer, M., Ungar, T., Kral, R., Borbely, A., Schafler, E., Ortner, B., Amenitsch, H., and Bernstorff, S. (1999) Scanning X-ray diffraction peak profile analysis in deformed Cu-polycrystals by synchrotron radiation. *Acta Materialia*, **47**, 1053–1061
 - 3) Schafler, E., Zehetbauer, M., Borbely, A., and Ungar, T. (1997) Dislocation densities and internal stresses in large strain cold worked pure iron. *Materials Science and Engineering A*, **234-236**, 445–448
 - 2) Zehetbauer, M., Görtler, M., Kral, R., Schafler, E., Vostry, P., and Stulikova, I. (1997) Defect analysis in high temperature deformed Al single crystals. *Materials Science and Engineering A*, **234-236**, 438–440
 - 1) Kocer, M., Sachslehner, F., Mueller, M., Schafler, E., and Zehetbauer, M. (1996) Measurement of dislocation density by residual electrical resistivity. *Materials Science Forum*, **210-213**, 133–140

Book contributions

- B1) Ungar, T., Schafner, E., and Gubizca, J. (2009) Microstructure of bulk nanomaterials determined by X-ray line profile analysis. pp. 361–386, J.Wiley VCH Weinheim (Germany)