ÚVOD DO NAUKY O MATERIÁLU

Garant cvičení: Ing. Karla Čech Barabaszová, Ph.D.
Vyučující: Ing. Karla Čech Barabaszová, Ph.D.

OKRUHY SEMESTRÁLNÍCH PRACÍ:

1. Nanomaterials on Si_3N_4 and SiC base.

   (Kašiarová, M., Dusza, J., Hnatko, M., Šajgalík, P. Microstructure and fracture-mechanical properties of carbon derived Si_3N_4 + SiC nanomaterials. Materials Science & Engineering C 26 (2006) 862-866.)

2. Metallopolymers - properties and applications.

   (Eloi, J.-Ch., Chabanne,L., Whittell, G.R. and Manners, I. Metallopolymers with emerging applications. Materialstoday, Vol. 11, No. 4 (2008), p. 28-36.)

3. Specific adhesives and their properties.

   (Li,Y. and Wong, C.P. Recent advances of conductive adhesives as a lead-free alternative in electronic packaging: Materials, processing, reliability and applications. Materials Science and Engineering R 51 (2006) 1-35.)

4. Nanoscale Mg-based materials.

   (Jurczyk, M., Smardz, L., Okonska, I., Jankowska, E., Nowak, M., Smardz, K. Nanoscale Mg-based materials for hydrogen storage. International Journal of Hydrogen Energy 33 (2008) 374-380.)

5. Latex/ceramic nanoparticles - properties and applications.

   (Luo, H., Scriven, L.E., Francis, L.F. Cryo-SEM studies of latex/ceramic nanoparticle coating microstructure development. Journal of Colloid and Interface Science 316 (2007) 500-509.)

6. Metal silicides for microelectronics.

   (Chen, L.J. Metal Silicides: An Integral Part of Microelectronics. Overview: Phase Transformations. JOM (September 2005) 24-30.)

7. Nuclear-Waste Management.

   (Yim, M.S. and Murty, K.L. Materials Issues in Nuclear-Waste Management. Radioactive Waste, Overview, JOM (2000), p. 26-29. (www.tms.org/pubs/journals/JOM/ articles.html))

8. Molecular magnets.

   (Lunetu, D. Molecular magnets. Current Opinion in Solid State and Materials Science 5 (2001) 123-129.)

9. New nanomaterials for lithium batteries.

   (Stura, E., Nicolini, C. New nanomaterials for light weight lithium batteries. Analytica Chimica Acta 568 (2006) 57-64.

10. Phase-field modelling.

    (Hoyta, J.J., Asta, M., Karma, A. Atomistic and continuum modeling of dendritic solidification. Reports: A Review Journal, Materials Science and Engineering R 41 (2003) 121-163.)

11. Ni-base superalloys at high temperatures used.

    (Yokokawa, T., Osawa, M., Nishida, K., Kobayashi, T., Koizumi, Y. and Farada, H. Partitioning behavior of platinum group metals on the γ and γ´phases of Ni-base superalloys at high temperatures. Scripta Materialia 49 (2003), p. 1041-1046.)

12. Nanostructures of intermetallics.

    (Valiev, R.Z., Mukherjee, A.K. Nanostructures and unique properties in intermetallics, subjected to severe plastic deformation. Scripta mater. 44 (2001) 1747-1750.)

13. Natural nanomaterials on the DNA base.

    (Ito, Y., Fukusaki, V. DNA as a 'Nanomaterial'. Journal of Molecular Catalysis B: Enzymatic 28 (2004) 155-166.)

14. Nanostructured materials in photovoltaic industries.

    (Ivanenko, L.I., Shaposhnikov, V.L., Filonov, A.B. et al. Electronic properties of semiconducting silicides: fundamentals and recent predictions. Thin Solid Films 461 (2004) 141-147.)

15. Magnetic nanomaterials.

    (Jiles, D.C. Recent advances and future directions in magnetic materials. Acta Materialia 51 (2003) 5907-5939.)

16. Creep in nanostructured materials.

    (Wilson, B. and Fuchs, G. Primary creep: secondary gamma prime and the rhenium effect. High-Temperature alloys, JOM (2008), p. 43 - 48. (www.tms.org/jom.html))

17. Diamond as an electronic material.

    (Wort, C.J. H., Balme, R.S. Diamond as an electronic material. MaterialsToday, No.1-2, Vol. 11 (Jan-Feb 2008) 22-28.)

18. Metallic-Intermetallic Laminate Composites.

    (Vecchio, K.S. Synthetic Multifunctional Metallic-Intermetallic Laminate Composites. Overview: Integrating Functionality. JOM (March 2005) 25-31.)

19. Titanium composite and nanocomposites.

    (Cortazar, M.G., Agote, I., Silveira, E. , Egizabal, P., Coleto, J. and Petitcorps, Y.L. Titanium composite materials for transportation applications. Titanium: Advances in Processing, JOM (2008), p. 40-46. (www.tms.org/jom.html))

20. Biofibres and biocomposites.

    (Maya, J.J., Sabu, T. Biofibres and biocomposites. Review. Carbohydrate Polymers 71 (2008) 343-364.)

21. Ni-Ti polycrystalline materials.

    (Grabe,C., Bruhns, O.T. On the viscous and strain rate dependent behavior of polycrystalline NiTi. International Journal of Solids and Structures 45 (2008) 1876-1895.)

22. Magnetite nanoparticles for bio-applications.

    (Cabrera, L., Gutierrez, S., Menendez, N., Morales, M.P., Herrasti, P. Magnetite nanoparticles: Electrochemical synthesis and characterization. Electrochimica Acta 53 (2008) 3436-3441.)

23. C_{60} nanoparticles in aerosol materials.

(Gupta, A., Forsythe, W.C., Clark, M.L., Dill, J.A., Baker, G.L. Generation of C_{60} nanoparticles aerosol in high mass concentrations. Aerosol Science 38 (2007) 592-603.)

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