Curriculum Vitea

Personal Data

Name Malki Pinkas
Date of Birth 7.7.1966
Personal status Married + 3

Education

1996-2003 Ph.D. in materials engineering from the Ben-Gurion University of the Negev. Ph.D. thesis research under the supervision of Prof. M. P. Dariel and Prof. J. Pelleg on the topic:
Functionally Graded (Ti,Al)N Hard Coating Produced by Reactive Magnetron Sputtering.

1993-1995 M.Sc. in materials engineering from the Ben-Gurion University of the Negev. M.Sc. thesis research under the supervision of Dr. A. Manor on the topic:
Directed Melt Oxidation of Al-Mg- alloys: The effect of a third Element Addition on the Growth Process

1988-1992 B.Sc. in Materials Engineering, Ben-Gurion University of the Negev.

Research and Professional Experience

2017 - Head, department of Materials, Nuclear Research Center, Negev (NRCN)

2016-2017 Visiting Scientist, Rutgers State University, New-Jersey, USA. Main subjects of research: Transmission electron microscopy of reactively synthesized materials

2013-2016 Head, Laboratory of Metallurgy, Nuclear Research Center, Negev (NRCN)

2011-2013 Head, Department of materials engineering and chemistry, research coordinator in the Israel Atomic Energy Commission (IAEC) chief scientist office,

2007-2011 Head, Group of physical metallurgy at the physical metallurgy laboratory, Nuclear Research Center, Negev (NRCN).

2006-2007 Visiting researcher, Colorado School of Mines, Golden,Colorado, USA. Main subjects of research: transmission electron microscopy of thin coatings, thin coatings metallurgy, advanced non-destructive evaluation of materials.

2004-2006 Researcher at the physical metallurgy group, NRCN.

2000-2004 R&D at the crystal growth laboratory, NRCN.

1995-1996 Manager of "Weissbands", a start-up company developing a special closure for open wounds with a substantial tissue loss.

Teaching

2015-2020 Failure Mechanisms of Structural Materials, under graduate elective course, Department of Materials Engineering, Ben Gurion University of the Negev

1996-2000 Teaching assistant at the dept. of materials engineering, Ben-Gurion University in the following undergraduate courses:
Physical metallurgy, introduction to materials science, advanced metallographic techniques and various laboratory courses.

1992-1995 Teaching assistant in laboratory courses at the Dept. of materials engineering, Ben-Gurion University of the Negev.

Awards and Honors

2009 - IAEC director general prize for excellent development.
2000 - The Kazir scholarship to promising Israeli scientists specializing in fields of engineering, electronics and core sciences.

Main Subjects of Interest:

Physical metallurgy of metallic systems, advanced methods of materials characterization, transmission electron microscopy, advanced non-destructive evaluation of materials, sapphire

Graduate Students

Y. Templeman, 2020 (Ph.D): The effect of prolonged dwells at 350÷450°C on the properties of Fe 14 wt.% Cr ODS steel

Y. Linden, 2017 (M.Sc): Phase transformations in equiatomic AlCoCrFeNi high entropy alloy

O. Yosefov-moshko , 2013 (M.Sc.): Precipitates in Maraging C250 Steel: Thermodynamic Calculations and Experimental ObservationThe aging of Maraging 250 steel

Z. Foxman, 2012 (M.Sc.): Structural Evolution of Oxide Dispersion Strengthened Steels as a Function of Heat Treatment

M. Shmulevitsh, 2010 (M.Sc.): The Effect of Solution Treatments on the Nonmetallic Inclussions Concentration and Early Stage of Aging in Maraging 250 Steel

E. Chakotay, 2009 (M.Sc.): Characterization of Surface and Mechanical Properties of Sapphire

List of Publications in Refereed Journals

1. Y. Templeman, S. Rogozhkin, A. Khomoch, A. Nikitin, **M. Pinkas**, "characterization of nano-sized particles in 14%Cr oxide dispersion strengthened (ODS) steel using classical and frontier microscopy methods", Accepted to Mat. Characterization.
2. L. Meshi, Y.Linden, A.Munitz, S.Salhov, **M.Pinkas**, "Retardation of the σ phase formation in the AlCoCrFeNi multi-cpmponent alloy, Mat. Characterization, 148, 171-177, (2019)
3. Y. Lindzen, **M. Pinkas**, A. Munitz, L. Meshi, "Long-period antiphase domains and short-range order in a B2 matrix of the AlCoCrFeNi high-entropy alloy", Scripta Mat., 139, 49-52, (2017).
4. S. Ifergane, **M. Pinkas**, Z. Barkay, E. Brosh, V. Ezersky, O. Beeri, N. Eliaz, "The relation between aging temperature, microstructure evolution and hardening of Custom 465® stainless steel", Mat. Characterization, 127, 129-136, (2017).
5. **M. Pinkas**, O. Moshka, S. Okavi, M. Shmuelevitsh, Y. Gelbstein, N. Froumin, L. Meshi, "The origin of the effect of aging on the thermoelectric power of maraging 250 steel", J. Mat. Sci, 50(23), pp. 7698-7704, (2015)
6. O. Moshka, **M. Pinkas**, E. Brosh, V. Ezersky, L. Meshi, "Addressing the issue of precipitates in maraging steels – Unabigous answer", Mat. Sci. Eng. A., 638, pp. 232-239, (2015).
7. M. Shmulevitsh, L. Meshi, **M. Pinkas**, R.Z. Shneck, "Elastic consideration of the precipitation in model alloys of maraging steels: theory and experimental validation", *J. Mat. Sci.*, 50(14), pp. 4970-4979, (2015)
8. **M. Pinkas**, Z. foxman, N. Froumin, P. Hahner, L. Meshi, "Sensitivity of thermo-electric power measurements to α–α' phase separation in Cr-rich oxide dispersion strengthened steels", J. Mat. Sci. 50(13), pp. 4629-4635, (2015)Foxman Z., **Pinkas M.**, Krasjak V., Sobol O., Landau A., Haenher P., Meshi L., "Microstructural evolution of Cr-rich ODS steels as a function of heat treatment at 475°C"Metallography, *Microstructure and Analysis*, 1(3), pp. 158-164, (2012)
9. Lin J., Moore J.J., **Pinkas M.**, Zhong D., Sproul W.D., *"TiBCN:CN_x multilayer coatings deposited by pulsed closed field unbalanced magnetron sputtering*", Surf. Coat. Technol. 206, pp. 617-622, (2011).
10. Lin J., **Pinkas M.**, Moore J.J., "The phase and microstructure of CrAlN films deposited by pulsed magnetron sputtering with synchronous and asynchronous bipolar pulses", Thin Solid Films, 520, pp. 166-173, (2011).
11. Shmulevitsh M., **Pinkas M.**, Weizman A., Frage N., *"Evolution of Ti-Based nonmetallic inclusions during solution treatment of Maraging 250 Steels: Thermodynamic assessment and experimental verification", Met. Mat. Trans. 42B*, pp. 550-556, (2011).

12. Lin J., Moore J.J., Moerbe W.C., **Pinkas M.**, Mishra B., Doll G.L., W.D. Sproul, "Structure and properties of selected (Cr–Al–N, TiC–C, Cr–B–N) nanostructured tribological coatings", *Int. Journal of Refractory Metals & Hard Materials*, 28, pp. 2–14, (2010)
13. Lin J., Moore J.J., Mishra B., **Pinkas M.**, W.D. Sproul, " Nano-structured CrN/AlN multilayer coatings synthesized by pulsed closed field unbalanced magnetron sputtering", *Surf. .Coat. Tech.*, 204 (2009) 936–940
14. Lin J., Moore J.J., Mishra B., **Pinkas M.,** W.D. Sproul, "The structure and mechanical and tribological properties of TiBCN nanocomposite coatings", *Acta Materialia*,
15. **Pinkas M**., Lotem H., Golan Y., Biderman S., et. al., "Healing the Sub-surface Damage Layer in Sapphire", *Mat. Chem. Phys.*, 124, pp. 323-329, (2010).
16. Lin J.L., Park I.W., Mishra B., **Pinkas M.**, Moore J.J. et.al., "Processing, Structure, and Properties of Nanostructured Multifunctional Tribological Coatings", *J. Nanoscience and Nanotechnology*, 9(7), pp. 4073-4084, (2009)
17. Lin, J.L., Moore, J.J., Mishra, B., **Pinkas M.** et.al., "CrN/AlN superlattice coatings synthesized by pulsed closed field unbalanced magnetron sputtering with different CrN layer thicknesses" , *Thin Solid Films*, 517(20), pp. 5798-5804, (2009)
18. Lin, J.L., Moore, W.C. Moerbe, J.J., **Pinkas M.** Mishra, B., G.L. Doll, W.D. Sproul, "Structure and properties of selected (Cr-Al-N, TiC-C, Cr-B-N) nanostructured tribological coatings", Int. J. of Refract. Met., 28(1), pp. 2-14, (2009).
19. Lin J., Moore J.J., Mishra B., **Pinkas M.**, Sproul W.D., "Syntheses and characterization of TiC/a:C composite coatings using pulsed closed field unbalanced magnetron sputtering (P-CFUBMS)", *Thin Solid Films*, 517(3), pp. 1131–1135 (2008)
20. Lin J., Mishra B., Moore J.J., **Pinkas M.**, Sproul W.D., "Structure and properties of Ti–B–C–Nananocomposite coatings synthesized using pulsed closed field unbalanced magnetron sputtering PCFUBMS)", *Surf. Coat. Tech.*, 203, pp. 588–593, (2008)
21. Olson D.L, Kaydanov VI, Lasseigne-Jackson AN. Landau A., **Pinkas M.**, "Application of interdisciplinary fundamentals to achieve new insight into materials properties, stability, and integrity", *Review of Progress in Quantitative Nondestructive Evaluation, 27A*, pp. 3-22, (2008)
22. Snir Y., **Pinkas M.**, Gelbstein Y., Yeheskel O., Landau A., "Applying TEP measurements to assess the aging stage of Maraging 250 steel", *Review of Progress in Quantitative NondestructiveEvaluation,* 27B, pp. 1148-1153, (2008)
23. Lin, J., Moore, J. J., Mishra, B., **Pinkas, M.**, Sproul, W.D., Rees, J. A., "Effect of asynchronous pulsing parameters on the structure and properties of CrAlN films

deposited by pulsed closed field unbalanced magnetron sputtering (P-CFUBMS)", *Surf. Coat. Tech.*, 202(8), pp. 1418-1436, (2008)

24. Lin, J.L., Mishra B., **Pinkas M.**, Moore J.J., "Pulsed closed field unbalanced magnetron sputtering (PCFUBMS) deposited TiC/a : C thin films", *PRICM 6: 6th Pacific Rim International Conference on Advanced Materials and Processing, PTS 1-3,* pp. 1177-1180, (2007)
25. Park Y.D., Olson D.L., Landau A., **Pinkas M.**, "Assessment of hydrogen-induced precipitation in a Nickel-Copper alloy using thermoelectric power", *Corrosion*, 62(5), pp. 395-402, (2006)
26. Harris D.C., Esquivel O., Chaffee P.D., Anteby I., Ifergan R., **Pinkas M.**, Horowitz A., Lotem H., Regan T.M., Mecholsky J.J., "Laser thermal shock testing of neutron-irradiated sapphire", *Window and Dome Technologies VIII*, 5078, pp. 61-70, (2003)
27. Yeheskel O., **Pinkas M.**, Dariel M.P., "Evolution of the elastic moduli at the early stage of copper sintering", *Mat. Let*, 57(28), pp. 4418-4423, (2003)
28. **Pinkas M.**, Frage N., Froumin N., Pelleg J., Dariel M.P., "Early stages of interface reactions between AlN and Ti thin films", *J. Vac. Sci. Tech. A -Vac. Surf. Films*, 20(3), pp. 887-896, (2002)
29. **Pinkas M.**, Frage N., Manor E., Venkert A., "Microstructure characterization of ceramic composites formed by controlled melt oxidation of Al-Mg-Pd alloys", *J. Mat. Sci.*, 36(14), pp. 3525-3529, (2001)
30. **Pinkas M.**, Pelleg J., Dariel M.P., "Structural analysis of (Ti1-xAlx)N graded coatings deposited by reactive magnetron sputtering", *Thin Solid Films*, 355, pp. 380-384, (1999)
31. Raveh A., Weiss M., **Pinkas M.**, Rosen D.Z., Kimmel G., "Graded Al-AlN, TiN, and TiAlN multilayers deposited by radio-frequency reactive magnetron sputtering", *Surf. Coat. Tech.*, 114(2-3), pp. 269-277, (1999)
32. **Pinkas M.**, Frage N., Venkert A., Manor E., "The role of In or Pd additions in Al2O3/metal composite growth by melt oxidation in the Al-Mg-O system", *Script. Mat.*, 36(4), pp. 377-383, (1997)
33. **Pinkas M.**, Venkert A., Manor E., "Direct melt oxidation of Al-Mg-Pd and Al-Mg-In alloys", *Electron Microscopy 1994*, 2(A-B), pp. 807-808, (1994).