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Employment and positions

Institute of Metallurgy and Materials Science (IMMS), Polish Academy of Sciences:
junior research fellow (1981-1987),
research fellow (1987-2002),
associate professor (2003-2010),
professor with tenure (2011 -).

Head of Transmission Electron Laboratory (TEM Lab) at IMMS since 1997
Head of Construction and Functional Department at IMMS since 2014.

Scientific Career

M.Sc.: AGH-University of Science and Technology, 1981

Ph.D.: Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 1987

D.Sc.: Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2002

Professor: named by the President of the Republic of Poland, scientific title, 2011

Scientific achievements

Published 173 papers in (indexed within Web of Science Core Collection on 2018.03.23),
citing articles without self-citation: ~1251,
average citations per item: ~7
h index: 19

Chapters in books;

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J. Morgiel, P.Ochin, Development of structural metallic glasses through microstructure control, ed. K.J.K. Kurzydłowski, B. Major, P.Zięba, Research Signpost 2006

-

J. Morgiel, Development, Properties and Applications of Structural Bulk Metallic Glasses, ed. B.Major, Z.Waszcyszyn, Wyd. Orekop, Kraków, 2004, 27-52

-

J. Morgiel, Procesy porządkowania atomowego w stopach z pamięcią kształtu analizowane techniką ALCHEMI, Wyd. Orekop, Kraków, 2002,

-

J. Morgiel, Zaawansowana charakterystyka powłok nanostrukturalnych z wykorzystaniem transmisyjnej mikroskopii elektronowej, Wyd. Ole Bright, Kraków, 2011

-

J. Morgiel, R. Nowak, M. Pomorska, N. Sobczak, Sekwencja przemian fazowych w czasie oddziaływania ciekłego aluminium z MgO, Polska Metalurgia 2010 - 2014, Krynica, 2014

Most relevant publications during last 5 years

1.

1.

K. Bryła, **J. Morgiel**, M. Faryna, K. Edalati, Z. Horita, Effect of high-pressure torsion on grain refinement, strength enhancement and uniform ductility of EZ magnesium alloy, materials Letters, 212(2018)323-326.

2.

Piotr Bala, **Jerzy Morgiel**, Grzegorz Cios, Krzysztof Wieczerzak, Tomasz Tokarski, Ni-Cr-Ta-Al-C complex phase alloy - design, microstructure and properties, Materials Science and Engineering A, 711(2018)99-108.

3.

L. Jaworskaa, M. Karolusa, S. Cygan, **J. Morgiel**, J. Cyboroń, J. Laszkiewicz Łukasik, P.

Putyra, Influence of pulsed current during high pressure sintering on crystallite size and phase composition of diamond with TieB bonding phase, International Journal of Refractory Metals & Hard Materials 70(2018)101-106.

4.

A. Bigos, E. Beltowska-Lehman, E. García-Lecina, M. Bieda, M.J. Szczerba, **J. Morgiel**, Ultrasound-assisted electrodeposition of Ni and Ni-Mo coatings from a citrate-ammonia electrolyte solution, Journal of Alloys and Compounds, 726(2017)410-416.

5.

A.S. Ramos, Ł. Maj, **J. Morgiel**, M.T. Vieira, Coating of Tungsten Wire with Ni/Al Multilayers for Self-Healing Applications, Metals, 7(2017)

6.

J. Morgiel, P. Klimczyk, Ł. Major, L. Jaworska, Ł. Maj, T. Cygan, A. Olszyna, TEM investigations of wear mechanism of Al₂O₃ and Si₃N₄ compacts with GLPs additions, Ceramics International, 43(2017)8334-8342.

7.

T. Suszko, W. Gulbinski, **J. Morgiel**, G. Greczynski, E. Dobruchowska, P. Dłuzewski, J. Lu, L.Hultman, Amorphous FeCrNi/a-C:H coatings with self-organized nanotubular structure, Scripta Materialia 136(2017)24-28.

8.

K. Ziewiec, M. Wojciechowska, J. Ferenc, M. Lis, D. Mucha, **J. Morgiel**, A. Ziewiec, Thermal characteristics and amorphization in plasma spray deposition of Ni-Si-B-Ag alloy, Journal of Alloys and Compounds 710(2017)685-691.

9.

M. Mazur, T. Howind, D. Gibson, D. Kaczmarek, **J. Morgiel**, D. Wojcieszak, W. Zhu, P. Mazur, Modification of various properties of HfO₂ thin films obtained by changing magnetron sputtering conditions, Surface & Coatings Technology 320(2017)426-431.

10.

Ł. Maj, **J. Morgiel**, M. Szlezynger, P. Bała, G. Cios, Effect of low and high heating rates on reaction path of Ni(V)/Al multilayer, Materials Chemistry and Physics, 193(2017)244-252.

11.

K. Stan-Glowinska, L. Litynska-Dobrzynska, **J. Morgiel**, A. Goral, M.A. Gordillo, Enhanced thermal stability of a quasicrystalline phase in rapidly solidified Al-Mn-Fe-X alloys, journal of Alloys and Compounds, 702(2017)216-228.

12.

Ł. Maj, **J. Morgiel**, TEM observations of reactive bonded Ti6Al4V alloy, Materials Letters 189(2017)38-41.

13.

Ł. Maj, K. Mars, **J. Morgiel**, E. Godlewska, Reactive resistance welding of Ti6Al4V alloy with the use of Ni(V)/Al multilayers, Physica Status Solidi-Rapid Research Letters, 11(2017)1600405.

14.

Ł. Maj, **J. Morgiel**, In-situ transmission electron microscopy observations of nucleation and growth of intermetallic phases during reaction of Ni(V)/Al multilayers, Thin Solid Films 621(2017)165-170.

15.

J. Morgiel, K. Marszałek, M. Pomorska, Ł. Maj, R. Mania, J. Kanak, P. Rutkowski, In situ TEM observation of reaction of Ti/Al multilayers, Archives of Civilian and Mechanical Engineering 17(2017)188-193.

16.

M. Kostecki, M. Grybczuk, P. Klimczyk, T. Cygan, J. Wozniak, T. Wejrzanowski, L. Jaworska, **J. Morgiel**, A. Olszyna, Structural and mechanical aspects of multilayer graphene addition in alumina matrix composites-validation of computer simulation model, Journal of the European Ceramic

Society, 36(2016)4171-4179.

17.

M. Zagula-Yavorska, **J. Morgiel**, J. Romanowska, J. Sieniawski, Microstructure and oxidation behaviour investigation of rhodium modified aluminide coating deposited on CMSX 4 superalloy, Journal of Microscopy, 261(2016)320-325.

18.

P. Czaja, M. Fitta, J. Przewoźnik, W. Maziarz, **J. Morgiel**, T. czepe, E. Cesari, Effect of heat treatment on magnetostructural transformations and exchange bias in Heusler Ni₄₈Mn_{39.5}Sn_{9.5}Al₃ ribbons, Acta Materialia 103C(2016)30-45.

19.

Z. Świątek, A. Gradys, Ł. Maj, **J. Morgiel**, K.W. Marszałek, R. Mani, M. Szlezynger, XRD and TEM in situ Heating of Large Period Ni/Al Multilayer Coatings, Acta Physica Polonica, 130(2016)880-883.

20.

A. Twardowska, B. Rajchel, **J. Morgiel**, M. Mędała-Wójcik, Microstructure Development in Multilayer TiB_x/TiSi_yC_z Coatings during Post-Deposition Heat Treatment, Acta Physica Polonica 130(2016)1124-1126.

21.

L.T. Cangueiro, A.J. Cavaleiro, **J. Morgiel**, R. Vilar, Mechanisms of the formation of low spatial frequency LIPSS on Ni/ Ti reactive multilayers, Journal Physics D: Applied Physics 49(2016)365103.

22.

M. Homa, N. Sobczak, J.J. Sobczak, **J. Morgiel**, S. Seal, R. Nowak, G. Bruzda, Wetting Behavior and Reactivity Between AlTi₆ Alloy and Carbon Nanotubes, Journal of Materials Engineering and Performance, 25(2016)3317-3329.

23.

L. Major, J.M. Lackner, M. Kot, **J. Morgiel**, Novel multilayer nano-composite protective coatings for metallic medical tools, International Journal of Materials Research, 106(2015)804-809.

24.

M. Zagula-Yavorska, **J. Morgiel**, J. Romanowska, J. Sieniawski, TEM analysis of the hafnium-doped aluminide coating deposited on Inconel 100 superalloy, Vacuum 116(2015)115-120.

25.

H. Paul, **J. Morgiel**, M. Faryna, M. Prazmowski, M. Miszczyk, Microstructure and interfacial reactions in the bonding zone of explosively welded Zr700 and carbon steel plates, International Journal of materials Research, 106(2015)782-792.

26.

M. Mazur, **J. Morgiel**, D. Wojcieszak, D. Kaczmarek, M. Kalisz, Effect of Nd doping on structure and improvement of the properties of TiO₂ thin films, Surface and Coatings Technology, 270(2015)57-65.

27.

D. Wojcieszak, M. Mazur, D. Kaczmarek, **J. Morgiel**, G. Zatryb, J. Domaradzki, J. Misiewicz, Influence of Nd dopant amount on microstructure and photoluminescence of TiO₂:Nd thin films, Optical Materials 48(2015)172-178.

28.

A.J. Cavaleiro, A.S. Ramos, R.M.S. Martins, F.M. Braz Fernandes, **J. Morgiel**, C. Baehtz, M.T. Vieira, Phase transformations in Ni/Ti multilayers investigated by synchrotron radiation-based x-ray diffraction, Journal of Alloys and Compounds 646(2015)1165-1171.

29.

D. Wojcieszak, M. Mazur, D. Kaczmarek, **J. Morgiel**, A. Poniedziałek, J. Domaradzki, A. Czeżot, Influence of the structural and surface properties on photocatalytic activity of TiO₂:Nd thin films, Polish Journal of Chemical Technology, 17(2015)103-111.

30.

M. Zagula-Yavorska, **J. Morgiel**, J. Romanowska, J. Sieniawski, Nanoparticles in zirconium-doped aluminide coatings, *Materials Letters* 139(2015)50-54.

31.

J. Morgiel, M. Szlezzynger, M. Pomorska, Ł. Maj, K. Marszałek, R. Mania, In-situ TEM heating of Ni/Al multilayers, *Journal of Materials Research*, 106(2015)1-8.

32.

J. Wozniaka, P. Kurtycza, K. Broniszewski, M. Kostecki, **J. Morgiel**, A. Olszyna, Properties of alumina matrix composites reinforced with nickelcoated Graphene, *Materials Today: Proceedings* 2(2015)376-382.

33.

T. Wierzchoń, E. Czarnowska, E. Czarnowska, **J. Morgiel**, A. Sowińska, M. Tarnowski, A. Rogucka, The importance of surface topography for the biological properties of nitrided diffusion layers produced on Ti6Al4V titanium alloy, *Archives of Metallurgy and Materials*, 60(2015)2153-2159.

34.

E. Smiechowicz, P. Kulpinski, B. Niekraszewicz, J. Bemska, **J. Morgiel**, Effect of silver on cellulose fibre colour, *Society of Dyers and Colourists, Coloration Technology*, 130(2014)424-431.

35.

W. Wolczynski, C. Senderowski, **J. Morgiel**, G. Garzel, D-gun sprayed Fe-Al single particle solidification, *Archives of Metallurgy and Materials* 59(2014)211-220.

36.

J. Morgiel, T. Wierzchoń, New estimate of phase sequence in diffusive layer formed on plasma nitrided Ti-6Al-4V alloy, *Surface and Coatings Technology*, 259(2014)473-482.

37.

A.S. Ramos, A.J. Cavaleiro, M.T. Vieira, **J. Morgiel**, G. Safran, Thermal stability of nanoscale metallic multilayers, Thin Solid Films, 571(2014)268-274.

38.

M. Tacikowski, **J. Morgiel**, M. Banaszek, K. Cymerman, T. Wierzchoń, Structure and properties of diffusive titanium nitride layers produced by hybrid method on AZ91D magnesium alloy, Transactions of Nonferrous Metals Society of China, 24(2014)2767-2775.

39.

M. Gajewska, J. Dutkiewicz, **J. Morgiel**, Effect of reinforcement particle size on microstructure and mechanical properties of AlZnMgCu/AlN nano-composites produced using mechanical alloying, Journal of Alloys and Compounds, 586(2014)S423-S427.

40.

H. Paul, **J. Morgiel**, T. Baudin, F. Brisset, M. Prazmowski, M. Miszczyk, characterization of explosive weld joints by TEM and SEM/EBSD, Archives of Metallurgy and Materials, 59(2014)1129-1136.

41.

J.W. Kaczmar, K. Naplocha, **J. Morgiel**, Microstructure and Strength of Al₂O₃ and Carbon Fiber Reinforced 2024 Aluminum Alloy Composites, Journal of Materials Engineering and Performance, 23(2014)2801-2808.

42.

K. Reszka, **J. Morgiel**, Z. Zurek, A. Jaron, Characterization of Alumina Scale Formed on FeCrAl Steel, Archives of Metallurgy and Materials, 59(2014)77-81.

43.

M. Kac, J. Morgiel, A. Polit, Y. Zabala, M. Marszałek, Atomic scale structure investigations of epitaxial Fe/Cr multilayers, Applied Surface Science 305(2014)154-159.

44.

J. Morgiel, J. Grzonka, R. Mania, Sł. Zimowski, J. Labar, Z. Fogarassy, Relation between microstructure and hardness of nano-composite CrN/Si₃N₄ coatings obtained using single target magnetron system, Vacuum, 90(2013)170-175.

45.

A. Duszova, P. Hvizdos, F. Lofaj, L. Major, J. Dusza, **J. Morgiel**, Indentation fatigue of WC-Co cemented carbides, International Journal of Refractory Metals and Hard Materials, 41(2013)229-235.

46.

A. Duszova, R. Halgas, M. Blanda, P. Hvizdos, F. Lofaj, J. Dusza, **J. Morgiel**, Nano-indentation of WC-Co hardmetals, Journal of the European Ceramic Society, 33(2013) 2227-2232.

47.

A. Duszova, P. Hvizdos, F. Lofaj, Ł. Major, J. Dusza, **J. Morgiel**, Indentation fatigue of WC-Co cemented carbides, Int. Journal of Refractory Metals and Hardmetals, 41(2013)229-235.

48.

K. Sieradzka, D. Kaczmarek, **J. Morgiel**, J. Domaradzki, E. Prociow, B. Adamiak, Structural properties of transparent Ti-V oxide semiconductor thin films, Central European Journal of Physics, 11(2013)251-257.

49.

M. Gajewska, **J. Morgiel**, Microstructure and microhardness of ball milled/hot pressed Aluminium with Mg₃N₂ addition, Archives of Metallurgy and Materials, 58(2013)433-436.

50.

A. Duszova, **J. Morgiel**, Z. Bastl, J. Mihaly, J. Dusza, Characterization of carbon nanofibers/ZrO₂ ceramic matrix composite, Archives of Metallurgy and Materials, 58(2013)459-463.

51.

J. Morgiel, N. Sobczak, M. Pomorska, R. Nowak, J. Wojewoda-Budka, TEM investigation of phases formed during aluminium wetting of MgO at [100], [110] and [111] orientations, Archives of Metallurgy and Materials, 58(2013)497-500.

Research Projects

Projects from Polish National Centre for Science

DEC-2012/05/B/ST8/01794; (2013-2015);

Analysis of reactivity of the multilayer Al/Ti, Al/Ni/ and Ti/Ni coatings through in-situ TEM experiments

,
project leader;

J. Morgiel

Projects from Polish National Centre for Research and Development

GRAF-TECH/NCBR/03/05/2012 (2013-2015); *Ceramic-graphene composites for cutting tools and devices parts with unique properties - CERGRAF*

, coordinator of research realized at IMIM;

J. Morgiel

International exchange programmes

Application of Advanced TEM Techniques for Development of New Materials, in collaboration with prof. J. Labar from Research Institute for Technical Physics and Materials Science; Hungarian Academy of Sciences, (2013-2014)

Experience gained abroad:

Post-Doc Fulbright - Highs scholarship: Stanford University, Department of Materials Science and Engineering, in prof. R. Sinclair group, 1987 - 1988 (12 months)

Research stay: Japan, Sapporo, Hokkaido University, collaboration with prof. Takahashi, November 2003

Prizes and awards:

Fulbrighta-Highsa scholarship; 1987-1988,

Award of Polish Ceramic Socitety - 2009

Silver cross of Merit - 2006 rok

Gold Cross of Merit - 2017

Education of scientific staff

Supervisor of 3 PhD thesis:

Łukasz Major - 2006,

Justyna Grzonka - 2009,

Marta Gajewska - 2014

External reviewer: PhD - 6, DSc - 10.

Reviewer:

- Journal of Microscopy,
- Journal of Materials Engineering and Performance,
- Microscopy and Microanalysis,
- Archives of Metallurgy and Materials,
- Materials Characterization,
- Archives of Civil and Mechanical Engineering,
- Metal Forming - Obróbka Plastyczna Metali,
- Materials Engineering - Inżynieria Materiałowa,
- Ceramic Materials - Materiały Ceramiczne,
- National Science Centre (NCN),
- National Centre for Science and Development (NCBiR).

Organisation of conferences and scientific events

International Conference on Electron Microscopy of Solids (2005, 2008, 2011, 2014),

International Symposium on Vacuum - based Science and Technology (2011, 2008)

Membership in professional societies:

Electron Microscopy and Analysis Society,

Metallurgy of the Polish Academy of Sciences (2012-2015),

Polish Society for Microscopy,

Committee on Materials Science of the Polish Academy of Sciences,

Main scientific interest

transmission electron microscopy,
phase transformations of solids,
functional coatings,
composite materials.