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Employment and positions

Institute of Metallurgy and Materials Science, Polish Academy of Sciences: metallurgist (since 2015), assistant professor (since 2018). Deputy Head of Accredited Testing Laboratories of the Institute of Metallurgy and Materials Science and expert in the Testing Laboratory of Transmission Analytical Electron Microscopy (since 2016)

Scientific career

M.Sc.: Cracow University of Technology, Faculty of Mechanical Engineering, 2012

Ph.D.: Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2017

Scientific achievements

The most relevant publications during last 5 years:

1.

L. Major, J.M. Lackner, M. Kot, **M. Janusz**, B. Major, „ Contribution of TiN/Ti/a-C:H multilayers architecture to biological and mechanical properties", Bull. Pol. Ac.:Tech., Vol. 62, No. 3, (2014) 565- 570, Punkty MNiSW-25

2.

L. Major, **M. Janusz**, M. Kot, J. M. Lackner, B. Major: Development and complex characterization of biotribological Cr/CrN + a-C:H (doped Cr) nano multilayer protective coatings for carbon-fiber composite materials, RSC Adv., 2015, 5, 9405-9415 Punkty MNiSW-35

3.

L. Major, **M. Janusz**, J. M. Lackner, M. Kot, B. Major: Microstructure characterization of advanced protective Cr/CrN+a-C:H/a-C:H:Cr multilayer coatings on carbon fibre composite (CFC) Journal of Microscopy, 2015, Vol. 262, Issue 3 2016, 191-202, Punkty MNiSW- 35

4.

M. Kot, Ł. Major, J. M. Lackner, K. Chronowska-Przywara, **M. Janusz**, W. Rakowski: Mechanical and Tribological Properties of Carbon-Based Graded Coatings, Journal of Nanomaterials, Volume 2016, Article ID 8306345, 14 pages, Punkty MNiSW- 30

5.

Ł Major, **M. Janusz**, J. M. Lackner, B. Major Contribution of titanium, chromium and carbon buffer interlayers to bio- tribological properties of multilayer composites, Archives of Metallurgy and Materials., Vol. 61 (2016), 1045-1052, MNiSW- 30

6.

M. Janusz, L. Major, J.M. Lackner, B. Grysakowski H. Krawiec, Microstructure

characterization of localized corrosion wear of Cr/Cr₂N + a-C:H/a-C:H:Cr multilayer coatings on Carbon Fiber Composites (CFC), Bulletin of Polish Academy of Sciences: Technical Sciences Vol. 65 (2017), 171-177, Punkty MNiSW-25

7.

L. Major , **M. Janusz**, J.M. Lackner, M. Kot, M. Dyner, B. Major ; Wear mechanisms of the biotribological nanocomposite a-C:H coatings implanted by metallic nanoparticles; Journal of Microscopy 2017, Vol. 268, str. 94-104, Punkty MNiSW- 35

8.

K. Gawlinska, A. Iwan, Z. Starowicz, G. Kulesza-Matlak, K. Stan-Glowinska, **M. Janusz**, M. Lipinski, B. Boharewicz, I. Tazbir, A. Sikora ; Searching of new, cheap, air- and thermally stable hole transporting materials for perovskite solar cells; Opto-Electronics Review; Vol. 2 (2017), 274-284, Punkty MNiSW-20

9.

M. Janusz, L. Major, M. Kot, M. Dyner, J.M. Lackner, B. Major; Wear Mechanisms Characterization Operating in Micro- and Nanoscale of the a-C:H Coating Implanted by Ag-Pt; Biotribology , Vol 13 (2018), 16-22

10.

Goryczka T., Zubko M., Lelątko J., Salwa P., Wierzchoń T, Wojewoda-Budka J., **Janusz-Skuz a M** .
Structure and Mechanical Properties of Multi-Functional Layer Deposited on Surface of NiTi Shape Memory Alloy, Materials Transactions, Vol. 60, (2019)

11.

Bigos, A., **Janusz-Skuza, M.**, Szczerba, M.J., Kot M., Zimowski, S., Dębski, a, Beltowska-Lehman E: The effect of heat treatment on the microstructural changes in electrodeposited Ni-Mo coatings, Journal of Materials Processing Technology Vol 276, (2020),

12.

Beltowska-Lehmana E, Bigos A., Szczerba M.J. , **Janusz-Skuza M.** , Maj L., Debski A. , Wiazania G., Kot M.:Heat treatment of ultrasonic electrodeposited Ni-W/ZrO₂

nanocomposites, Surface & Coatings Technology, Vol. 393, (2020)

13.

Kwiecien I., Bobrowski P., **Janusz-Skuza M.**, Wierzbicka-Miernik A., Szulc Z., Wojewoda-Budka J.: Microstructure of the interface zone after explosive welding and further annealing of A1050/Ni201 clads using various joining conditions, Journal of Materials Science, Vol. 55, (2020)

14.

I. Kwiecien, P. Bobrowski, **M. Janusz-Skuza**, A. Wierzbicka-Miernik, A. Tarasek, Z. Szulc, J. Wojewoda-Budka: Interface Characterization of Ni/Al Bimetallic Explosively Welded Plate Manufactured with Application of Exceptionally High Detonation Speed, Journal of Materials Engineering and Performance, Vol. 29, 2020

15.

Bigos A., Wolowicz M., **Janusz-Skuza M.**, Starowicz Z., Szczerba M.J., Bogucki R., Beltowska-Lehman E.: Citrate-based baths for electrodeposition of nanocrystalline nickel coatings with enhanced hardness, Journal of Alloys and Compounds, Vol. 850, (2021)

16.

Szmul M., Stan-Glowinska K., **Janusz-Skuza M.**, Bigos A., Chudzio A., Szulc Z., Wojewoda-Budka J.: The Interface Zone of Explosively Welded Titanium/Steel after Short-Term Heat Treatment, METALLURGICAL AND MATERIALS TRANSACTIONS A, Vol. 52 (2021)

Research Projects

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Project (NCN) National Research Project (National Center of Science; Pol. NCN):
Bio-mechanical and microstructure analysis of multilayer nano- composite, protective coatings
for metallic substrates for tissue interaction; number: 2012/07/B/ST8/03396; (contractor)

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CERGRAF: project realized in the frame of „GRAF-TECH" program: Ceramic composites with
grafene for cutting tools and machine parts with unique properties; number:
GRAF-TECH/NCBR/03/05/2012; (contractor)

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Project (NCN): Biomimetic, self- healing, multilayer structures elaboration on thermoplastic
polymer materials; number: 2014/15/B/ST8/00103 (contractor)

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Project (NCN): Bio- compatibile, wear resistant, decorative coatings for biological, corrosive
fluids interaction- development and their multiscale research; number 2015/19/B/ST8/00942
(contractor)

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Development and multiscale characterization of nano-composite, bio- tribological amorphous
carbon matrix coatings, reinforced with metallic nano-particles, No:2015/17/N/ST8/00020
(project lider)

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Anti-bacterial optimization of high-strength, severe-plastic-deformed titanium alloys for spinal
implants and surgical tools SPD-BioTribo; nr: DZP/M-ERA.NET-2015/285/2016 (contractor)

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Isothermal and refrigeration photovoltaic car body,, The National Centre for Research and
Development and The National Fund for Environmental Protection and Water Management,
„GEKON - Generator Koncepcji Ekologicznych" (contractor)

Experienced gained abroad:

ERASMUS+ Joanneum Research Forschungsgesellschaft mbH Materials - Institute of Surface Technologies and Photonics Functional Surfaces, Leoben - Austria, (1 month)

Organization of conferences and scientific events

Participation in the Organizing Committee of the XII International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2014), May 25-30, 2014 Cracow

Participation in the Organizing Committee of the 65th anniversary of the Institute of Metallurgy and Materials Science Polish Academy of Sciences (2017)

Prizes and awards

2016- The first prize for oral presentation at the XXI Physical Metallurgy and Materials Science Conference AMT 2016

2012- M.Sc. with honors

Main scientific interests

Microstructural characterization of nanocomposite, multilayer materials using transmission and scanning electron microscopy.