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Employment and positions

Institute of Metallurgy and Materials Science, Polish Academy of Sciences - Ph.D. studies (2003-2008), assistant professor (2008-2019), associate professor (2020)

Scientific Career

M.Sc.: University of Mining and Metallurgy, Faculty of Applied Mathematics, 2003

Ph.D.: Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2008

D.Sc. Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2020

Scientific achievements

More than 50 papers in refereed journals and periodicals (38 of them cited by the Institute for Scientific Information in Philadephia).

The most relevant publications during last 5 years

1. **M. Bieda**, S. Boczkal, P. Koprowski, K. Sztwiertnia, K. Pieła Texture and microstructure of pure (6n) and commercially pure aluminum after deformation by extrusion with forward-backward rotating die (KoBo) Archives of Metallurgy and Materials 61 (1) , (2016)

2. **M. Bieda** Orientation mapping and in situ annealing in TEM and SEM - characterization of changes in aluminium alloys after deformation Acta Phys. Pol. A

3. **M. Bieda**, A. Jarzębska, Characterization of precipitates in aluminium alloy 6013 after cold-rolling and annealing, Acta Phys. Pol. A

4. J. Kawałko, **M. Bieda**, K. Sztwiertnia Microstructure of commercial purity titanium subjected to complex loading by the kobo method Arch. of Met. And Mater. 61 (1) ,

(2016)

5. P. Koprowski, R. Bogucki, **M. Bieda,** K. Sztwiertnia Thermal stability of AA1050 aluminum alloy after equal channel angular pressing, Archives of Metallurgy and Materials 06/2017; 62(2).

6. K. Pieła, M. Wróbel, K. Sztwiertnia, M. Jaskowski, J. Kawałko, **M. Bieda**, M. Kiper, A. Jarzębska Zinc subjected to plastic deformation by complex loading and conventional extrusion: Comparison of the microstructure and mechanical properties Materials and Design http://dx.doi.org/10.1016/j.matdes.2016.12.05

7. J. Kawałko, P. Bobrowski, P. Koprowski, A. Jarzębska, **M. Bieda**, M. Łagoda, K. Sztwiertnia Journal of Alloys and Compounds Microstructure evolution of CP titanium during deformation in KoBo http://dx.doi.org/10.1016/j.jallcom.2016.11.202

8. 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 07/2017; 726., DOI:10.1016/j.jallcom.2017.07.300

9. A. Chojnacka, J. Kawalko, H. Koscielny, J. Guspiel, A. Drewienkiewicz, **M. Bieda**, W. Pachla, M. Kulczyk, K. Sztwiertnia, E. Beltowska-Lehman:
Corrosion anisotropy of titanium deformed by the hydrostatic extrusion
. Applied Surface Science 07/2017; 426., DOI:10.1016/j.apsusc.2017.07.231

10. A.Jarzębska, **M. Bieda**, J. Kawałko ,Ł. Rogal, P., Koprowski, K. Sztwiertnia, W. Pachla, M. Kulczyk A new approach to plastic deformation of biodegradable zinc alloy with magnesium and its effect on microstructure and mechanical properties Materials Letters 09/2017; 211.,

11. P. Koprowski, **M. Bieda**, S. Boczkal, A. Jarzębska, P. Ostachowski, J. Kawałko, T. Czeppe,

W. Maziarz, M. Łagoda, K. Sztwiertnia: AA6013 aluminium alloy deformed by forward-backward rotating die (KoBo): Microstructure and mechanical properties control by changing the die oscillation frequency. Journal of Materials Processing Technology 11/2017; 253.,

Research Projects

Projects from Ministry of Science and Higher Education

· *Mechanisms of grain refinement during continuous recrystallization process in aluminum alloys with bi-modal distribution of the precipitates. New method obtaining materials with ultra-fine grained structure* (Project No. 507 047 31/1152), IMMS PAS, contractor, 2006-2009.

· *Adaptation a system of automatic TEM-measurement of orientation maps to microstructure analysis in severely deformed metals,* (Project No. 507 159 31/1148), IMMS PAS, main contractor, 2006 – 2008.

· *Improvement of competitive and innovative characteristics of the national industry of non-ferrous metal processing through the preparation of advanced metallic materials and*

technologies of their production (Project No. PBZ-MNiSW-3/3/2006), Task 1.5: *Multiscale, quantitative characteristics of the microstructure of technologically-advanced metallic materials*, IMMS PAS, contractor
,
2007 - 2010.

· *Optimization of the operating properties of had magnetic alloys of the system Fe-Cr-Co. Gradient microstructure magnets. (Projekt N507 530539) IMIM PAS, contractor, 2010 – 2013.*

Experience gained abroad

Socrates Erasmus Scholarship: University of Orleans, France- DESS Ingénierie Mathématique et Outils Informatiques, 2001(half a year)

Some shorter visits:

Microstructural Evolution and Stability – Challenges at the Intersection of Experiment and Theory - Gordon Research Conferences on Physical Metallurgy, Holderness School, Plymouth, USA, 2006 (1 week),

EBSD Users Meeting 2006, Hindsgavl Castle, Middelfart, Dania, 2006 (1 week),

Microscopy - advanced tools for tomorrow's materials - Autumn School on Materials Science and Electron Microscopy, Berlin, 2007 (1 week)

Research Institute for Technical Physics and Materials Science; Hungarian Academy of Sciences, Budapest, 2007, 2008 (1 week each year)

Prizes and awards

2006 Scholarship for Gordon Research Conference on Physical Metallurgy in Plymouth (USA)

2008 Award from Polish Society for Microscopy for distinctive abstract on XIII International Conference on Electron Microscopy, EM`2008

2009 Award from Polish Materials Society for the best Ph.D thesis in the year 2008 in the field of Material Science

2011 2nd Prize for poster contribution on EMAS 2011

Organisation of conferences and scientific events

Member of organizing committee: Workshop Progress In Microstructure Characterization By Electron Microscopy in the frame of Centre of Excellence NAMAM, Zakopane (2005), Symposium on Texture and Microstructure Analysis of Functionally Graded Materials – SOTAMA'2005', Krakow 2005, 2nd Symposium on Texture and Microstructure Analysis –

SOTAMA’2007’, Krakow 2007, Texture Workshop: Measurement & Interpretation, Krakow 2004, 2006.

Main scientific interest

Modern methods of materials characterization including electron microscopy (Orientation microscopy). Methods of texture and microstructure measurement, description and analysis. Texture and anisotropy of physical, chemical and mechanical properties of polycrystalline materials.