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Employment and positions

Polish Academy of Sciences, Institute for Metal Research:
1974-1977 - Assistant

Polish Academy of Sciences, Institute of Metallurgy and Materials Science:
1992-2004 - Assistant Professor
2004-2013 - Associate Professor
2013-present - full time job professor
Since 2000 Head of Laboratory of Scanning Electron Microscopy in the frame of Accredited Testing Laboratories (scope of Accreditation No. AB 120)

Jagiellonian University, Regional Laboratory of Physicochemical Analysis and Structural Research:
1977-1981 - Assistant
1981-1984 - Senior Assistant
1984-1987 - Experimental Officer
1987-1992 - Senior Experimental Officer
1992-2007 - Lecturer, Head of Analytical Electron Microscopy Laboratory

Scientific Career

M.Sc.: AGH - University of Science and Technology, Faculty of Metallurgy, 1974

Ph.D.: AGH - University of Science and Technology, Faculty of Materials Science and Ceramics, 1991

D.Sc.: Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2004

Professor nomination, 2013

Scientific achievements

109 papers, among them: 99 papers in refereed journals and periodicals (60 of them cited by the Institute for Scientific Information in Philadelphia), 76 presentations during conferences, 2 chapters in books, 1 monography, 1 book, Hirsch index 14, sum of times cited 606 without self citations 563

The most relevant publications during last 5 years

1.

P. Bobrowski, **M.Faryna**, Z.Pędzich, „Microstructural Characterization of Yttria-Stabilized Zirconia Sintered at Different Temperatures Using 3D EBSD, 2D EBSD and Stereological Calculations”, Journal of Materials Engineering and Performance, 26 (10) 2017 4681-4688

2.

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

3.

Ł Maj, J. Morgiel, K. Mars, J. Grzegorek, **M. Faryna**, E. Godlewska, „Microstructure and hardness of TiAlV4/NiAl/Ti6Al4V joints obtained through resistive heating”, Journal of Materials Processing Tech., 255 2018 689-695

4.

H.Paul, M.M.Miszczyk, R.Chulist, M.Prażmowski, J.Morgiel, A Gałka, **M.Faryna**, F.Brisset, „Microstructure and phase constitution in the bonding zone of explosively welded tantalum and stainless steel sheets”, Materials & Design, 153 2018 177-189

5.

R.Chulist, P.Czaja, T.Tokarski, **M.Faryna**, „Martensitic stabilisation in single crystalline Ni-Mn-Ga and Ni-Mn-Sm magnetic shape memory alloys”, Materials Letters, 230 2018 266-269

6.

O.Kogtenkova, B.Straumal, A.Korneva, T.Czeppe, A.Wierzicka-Miernik, **M.Faryna**, P.Zięba, „Grain Boundary Complexions and Phase Transformations in Al- and Cu-Based Alloys”, Metals 9 1 Article number 10, DOI: 103390/met9010010 2019

7.

M.Mosiąlek, R.P.Socha, B.Bożek, D.Wilgocka-Ślęzak, E.Bielańska, A.Kežionis, T.Šalkus, E.Kazakevičius, A.F.Orliukas, M.Dziubaniuk, J.Wyrwa, J.Wojewoda-Budka, **M.Faryna**, B.Lis,

M.Dudek, R.Lach, „Changes in properties of scandia-stabilised ceria-doped zirconia ceramics caused by silver migration in the electric field", *Electrochimica Acta*, 338, 2020 135866

8.

Jan Dutkiewicz, Damian Kalita, Wojciech Maziarz, Tomasz Tański, Wojciech Borek, Paweł Ostachowski, **Marek Faryna**, „Effect of KOBO Extrusion and Following Cyclic Forging on Grain Refinement of Mg-9Li-2Al-0.5Sc Alloy", *Metals and Materials International*, 26 (2020), 1004-1014

9.

Jan Dutkiewicz, Damian Kalita, Wojciech Maziarz, **Marek Faryna**, "Superplastic deformation of Mg-9Li-2Al-0.5Sc alloy after grain refinement KoBo extrusion and cyclic forging", *Archives of Civil and Mechanical Engineering* 20, 4 (2020) 121
<https://doi.org/10.1007/s43452-020-00128-9>

10.

Paweł Rutkowski, Jan Huebner, Adrian Graboś, Dariusz Kata, Bogdan Sapiński, **Marek Faryna**, „Dense KNN polycrystals doped by Er₂O₃ obtained by hot pressing with hexagonal boron nitride protective layer", *Materials*, 13, 24 (2020) Article Number 5174, DOI: 10.3390/ma13245741

Research Projects

Polish Ministry of Science and Higher Education

1.

Establishing of misorientation distribution function (MDF) for ceramic-based composites 2003 – 2006
(Project No. 4 T08D 010 25), IMMS PAS, supervisor, 2003-2006

2.

Microstructural characterization of dense transparent PLZT ceramics (Project No. N N507 448734), IMMS PAS, supervisor, 2008-2011

3.

Morphology of natural hydroxyapatite for biological applications (Project No. N N507 420236), IMMS PAS, supervisor, 2009-2010

Polish National Science Centre

1.

Electron backscatter diffraction as a tool for grain boundary distribution in three dimensions, (Project 2012/05/B/ST8/00117), IMMS PAS, supervisor, 2013-2016

2.

The influence of grain boundary structure and distribution on ionic properties of zirconia based materials, (Project 2017/27/B/ST8/00143) IMMS PAS, supervisor 2018-2021

European Union Projects

1.

COST, Action 525 – *Advanced electronic ceramics: grain boundary engineering*, Task: *Orientation Imaging Microscopy and Microanalysis Applied to Advanced Materials* ; task leader, 2004-2005

2.

Centre of Excellence in Nano- and Microscale Characterization and Development of Advanced Materials, 5 Frame Programme EU, Accompanying Measures, Contract No. G5MA-CT-2002-04048, IMMS PAS, member of work package 2, 2003-2005

3.

Project No POKL.04.01.01-00-004/10 - „*Interdisciplinary PhD Studies in Materials Engineering with English as the language of instruction*” - Head of PhD Studies, 2010-2015

4.

Project No WND-POWR.03.02.00-00-I043/16 „*International interdisciplinary PhD studies in materials science with English as the language of instruction*” in the frame of the Programme PO WER 2014-2020 Action 3.2 PhD Studies - Head of PhD Studies, 2017- 2020

International exchange programmes

1.

The improvement of the mechanical behaviour of ceramic composites by texture modification, University of Natal, Faculty of Engineering, Durban, South Africa, 1998 – 2000
(prof. Sarp Adali)

2.

Application of electron backscatter diffraction to the characterization of ceramic materials, Max-Planck-Institute für Metallforschung, Stuttgart, Germany, 2000-2002 (dr Ewald Bischoff)

3.

Orientation imaging microscopy and microanalysis applied to advanced materials, Josef Stefan Institute, Ljubljana, Slovenia, 2004 -2005 (dr Goran Drazic)

4.

Microstructural investigations of advanced ceramics, joinings of ceramics and ceramic composites, Department of Materials Engineering, Amnadolu University, Eskisehir, Turkey, 2013-2016 (prof. Servet Turan)

Experience gained abroad

The British Council: Oxford University, Department of Metallurgy and Materials Science 1987 (2 months)

Technische Universität Wien 1993 (1 month)

Philips Electron Optics Laboratory, Eindhoven, Holland – technical training (1993)

Oxford Instruments Microanalysis Group, High Wycombe – technical training (1994)

The Royal Society: Manchester Materials Science Centre 1999 (1 month), 2001 (1 month)

Max Planck Gesellschaft: Institut für Metallforschung, Stuttgart 2000 (1 month), 2001 (2 weeks), 2002 (1 month), 2004 (2 weeks)

Some shorter visits: Fritz Haber Institut Max Planck Gesellschaft, Berlin, Germany 1991 (2 weeks), University of Cambridge Cavendish Laboratory, UK 2003 (2 weeks); Josef Stefan Institute, Ljubljana, Slovenia 2004 (2 weeks) and 2005 (2 weeks); EDAX, Tillburg, the Netherlands
– technical training (2005, Anadolu University, Turkey (2009)

Prizes and awards

2003 - joint award of the Rector of the Jagiellonian University

2004 - joint award of the Rector of the Jagiellonian University

2007 - 2nd Prize for the best poster contribution entitled: Chemical and microstructural characterization of natural hydroxyapatite

2009 - The Prize given by Polish Ceramic Society in recognition of outstanding achievements in the development of SEM techniques applied to ceramic materials

2012 - Silver Medal of Merit awarded by the President of Poland

2017 - Gold Medal of Merit awarded by the President of Poland

Education of scientific staff

Supervisor of 3 PhD theses: dr Anna Maria Janus, dr Katarzyna Berent, dr Piotr Bobrowski

External reviewer: 2 PhD theses

Reviewer: Journal of European Ceramic Society, Archives of Metallurgy and Materials, Archives of Civil and Mechanical Engineering, Materials Science and Engineering, Journal of Physics and Chemistry of Solids, Philosophical Magazine & Philosophical Magazine Letters, Institute of Physics Conference Series, Polish Ministry of Science and Higher Education, Zeitschrift für Metallkunde: International Journal of Materials Research, Micron

Organisation of conferences and scientific events

Member of Management Committee and Polish Coordinator of COST Action 525

Member of International Scientific Committee of the School „Grain-boundary related phenomena in ceramic materials: from micro- to nanoscale dimension” in the frame of COST 525 European Concerted Action on Advanced Electroceramics: Grain Boundary Engineering, 2005, Genova, Italy

Member of Scientific Committee of bi-annual Conference Series of the Polish Ceramic Society, Zakopane, Poland from 2005 - till present

Secretary of the Scientific Committee of the International Workshop „Progress in microstructure characterization by electron microscopy
” - w organized in the frame of Centre of Excellence

„Nano- and Microscale Characterization and Development of Advanced Materials NAMAM”,
2005, Zakopane, Poland

Member of Scientific Committee of the VI Conference of the Polish Ceramic Society, 2007,
Zakopane, Poland

Chair of the session AIV0: Materials and Instrumentation 9th Inter-American Congress of
Electron Microscopy, 2007, Cusco, Peru

Chairman of the IX ESEM Users Club Meeting, 2008, Krakow, Poland

Member of International Advisory Board of the Conference ELECTROCERAMICS XI, 2008,
Manchester, UK

Chairperson of round table discussion: Electron backscatter diffraction, EMAS 2009 – 11th
Workshop, 2009, Gdańsk-Rumia, Poland

Chairperson of the session "Orientation microscopy" XVI International Conference on Electron
Microscopy, 2017, Jachranka, Poland

Chair and co-organizer of the EBSD course at Universidad National de Rosario in the frame of
10th Inter-American Congress of Electron Microscopy, 2009, Rosario, Argentina

Co-chairman of Summer School "Practical aspects of microanalysis "MikroSoFa" dedicated to
EDS and WDS techniques, Katowice 2018

Co-chairman of Summer School "Practical aspects of microanalysis "MikroSoFa" dedicated to EBSD technique, Kraków 2019

Member of the Scientific Committee of the 17th International Conference on Electron Microscopy EM'2020, Wisła, Poland

Chairman of International Scientific Committee of EMAS 2022 - 17th European Workshop on Modern Developments and Application in Microbeam Analysis Society, 07-11 May 2022 Kraków, Poland

Membership in professional societies

European Microbeam Analysis Society, Polish Association for Materials Science, Polish Society for Microscopy, Polish Ceramic Society, member of the Committee for Materials Science and Metallurgy of Polish Academy of Sciences.

Main scientific interest

Advanced scanning electron microscopy techniques, particularly environmental scanning electron microscopy, orientation imaging microscopy and in-situ experiments is SEM. Current field of interest in three dimensional electron backscatter diffraction acquisition and post-processing applied to zirconia polymorphs.