

Correspondence address: **Institute of Metallurgy and Materials Science PAS, 30-059 Kraków, 25 Reymonta St.**

Phone: **+48 12 295 28 62**, Room: **120**, fax.: **+48 12 295 28 04**

e-mail: m.miszczyk@imim.pl

Employment and positions:

Ph.D. Eng. Magdalena Maria Miszczyk has been employed at the Institute of Metallurgy and Materials Science of Polish Academy of Sciences, as metallurgist (from 2008), now as assistant professor (from 2014). Since 2009 is an expert at the Accredited Testing Laboratories of the Polish Centre for Accreditation at the Institute of Metallurgy and Materials Science PAS: Laboratory of Transmission Analytical Electron Microscopy, Laboratory of X-Ray Diffraction, Laboratory of Scanning Electron Microscopy at the IMMS PAS in Kraków.

Scientific Career:

M.Sc., Eng.: Pedagogical University of Kraków, Poland
Technical Education - 2007, (master's thesis entitled: „*The characteristic of microstructure at the alloys AgCuTi, characterize the range of immiscibility gap in the liquid state*”)
")

Ph.D.: Institute of Metallurgy and Materials Science PAS, Department of Plastic Deformation of Metals, Kraków, 2013,

(Ph.D. thesis entitled: "*Microstructure and texture evolution during annealing of plane strain compressed fcc metals*")

École Nationale Supérieure des Mines de Saint-Etienne, Centre Sciences des Matériaux et des Structures, Spécialité : Sciences et Génie des Matériaux, Saint-Etienne, France, 2013, (titre de these: "*Modifications de la microstructure et de la texture pendant le recuit des métaux déformés de structure c.f.c.*")

Others: Agricultural University of Kraków, Poland, Post-graduate study.

"*Professional Head of Research and Development Projects*", Kraków, 2012

Scientific achievements:

Total number of scientific papers **32** included **13** papers at the List of Philadelphia (Institute for Scientific Information), citations: **34**, Hirsh factor: **5**.

The most relevant publications during last 5 years

1.

M. M. Miszczyk, H. Paul, J. H. Driver: "TEM and SEM analyses of the orientation relations of recrystallized grains in a stable Al-1 wt.%Mn single crystal", *Materials Characterization*, 2016, 112, pp. 68-80.

2.

M. M. Miszczyk, H. Paul, J. H. Driver: "Plastic flow instabilities formation in nominally stable

{110}<001>-oriented copper single crystal", *Advancements in Theoretical and Applied Plasticity*", *Proceedings of PLASTICITY'16: The twenty Second International Symposium on Plasticity and its Current Applications*, Ed. Akhtar S. Khan, USA, Maryland 2016, ISBN: 978-0-9911654-7-6, pages: 7-9.

3.

H. Paul, **M. M. Miszczyk**, J. H. Driver: „Micro- and macro- scaleshear banding in C{112}<111>-oriented single crystals of fcc metals", *Advancements in Theoretical and Applied Plasticity*", *Proceedings of PLASTICITY'16: The twenty Second International Symposium on Plasticity and its Current Applications*, Ed. Akhtar S. Khan, USA, Maryland 2016, ISBN: 978-0-9911654-7-6, pages: 10-12.

4.

H. Paul, **M. M. Miszczyk**: „Mechanism of macroscopic shear bands formation in polycrystalline copper pre-deformed by ECAP and subsequently plane strain compressed", *Advancements in Theoretical and Applied Plasticity*, *Proceedings of PLASTICITY'16: The twenty Second International Symposium on Plasticity and its Current Applications*, Ed. Akhtar S. Khan, USA, Maryland 2016, ISBN: 978-0-9911654-7-6, pp. 13-15.

5.

M. M. Miszczyk, J. Poplewska, H. Paul, J. H. Driver: „The influence of the as-deformed texture components on cube-oriented grains formation during primary recrystallization of AA1050 alloy", *Advanced Materials Research*, 2016 (submitted)

6.

H. Paul, **M. M. Miszczyk**, J.H. Driver, P. Drzymała: „Recrystallization twinning during primary recrystallization in stable single crystals of fcc metals", *Advanced Materials Research*, 2016 (submitted)

7.

M. Miszczyk, H. Paul, J. H. Driver, C. Maurice: "New orientation formation and grain growth during primary recrystallization in stable single crystals of three face-centred cubic metals", *Acta Materialia*, 2015, 83, pp. 120-136.

8.

□ **M. M. Miszczyk**, H. Paul, J. H. Driver, C. Maurice: "New orientation formation during recrystallization of channel-die deformed Al-1%Mn alloy single crystals of stable orientations" Archives of Metallurgy and Materials, 2015 (in press).

9.

H. Paul, **M. M. Miszczyk**: „Deformation microstructure and texture transformations in fcc metals of medium-to-high stacking fault energy: critical role of micro- and macro- scale shear bands", Archives of Metallurgy and Materials, 2015 (in press).

10.

M. M. Miszczyk, H. Paul: "Recrystallization behavior of plane strain deformed Al-Mn-Mg-S-cZr alloy", Solid State Phenomena, 2015, 231, pp. 1-10.

11.

H. Paul, J.H. Driver, A. Tarasek, W. Wajda, **M. Miszczyk**: "Mechanism of macroscopic shear band formation in plane strain compressed fine-grained aluminium", Materials Science Engineering A, 2015 (submitted).

12.

H Paul, J. Morgiel, M. Faryna, M. Prażmowski, **M. Miszczyk**: „Microstructure and interfacial reactions in the bonding zone of explosively welded Zr700 and carbon steel plater", International Journal of Materials Research, 2015 (in press).

13.

M. M. Miszczyk, H. Paul, J. H. Driver, C. Maurice: "Crystallographic aspects of nucleation and grain growth during recrystallization of high stacking fault energy metals as characterized on model Al-1%at.Mn alloy crystals", IOP Conference Series: Materials Science and Engineering, 2015 (in press).

14.

M. Miszczyk, H. Paul, J. H. Driver, C. Maurice: "Disorientation relations during the early stages of recrystallization in medium and low SFE fcc metals", Materials Science Forum, 2014, 783-786, pp. 2585-2590.

15.

H. Paul, J. Morgiel, T. Baudin, F. Brisset, M. Prażmowski, **M. Miszczyk**: "Characterization of Explosive Weld Joints by TEM and SEM/EBSD", Archives of Metallurgy and Materials, 2014, 59, pp. 1129-1136.

16.

M. Miszczyk, H. Paul, J. H. Driver, C. Maurice, „Relacje dezorientacji w początkowych stadiach rekrytalizacji metali o sieci rsc o średniej i małej energii błędu ułożenia", Rudy i Metale Nieżelazne, 2013, R57, 5, str. 312-318

17.

H. Paul, P. Uliasz, **M. Miszczyk**, W. Skuza, T. Knych, „An SEM/EBSD study of shear bands formation in Al-0.23%wt.Zr alloy deformed in plane strain compression", Archives of Metallurgy and Materials, 2013, Vols. 58, pp. 145-150

18.

H. Paul, L. Lityńska, **M. Miszczyk**, M. Prażmowski, „Microstructure and phase transformation near the bonding zone of Al/Cu clad manufactured by explosive welding", Archives of Metallurgy and Materials, 2012, Vols. 57, pp. 1151-1162

19.

R. Bański, H. Paul, M. Prażmowski, **M. Miszczyk**: „Wpływ obróbki cieplnej na zmiany mikrostrukturalne oraz właściwości mechaniczne bimetalu Ti/Ni wytwarzanych metodą spajania wybuchowego", Rudy i Metale Nieżelazne, 2012, R57, 5, str. 312-318

20.

W. Wajda, Ł. Madej, H. Paul, R. Gołąb, **M. Miszczyk**: „Validation of texture evolution model for polycrystalline aluminium on the basis of 3D digital microstructures", Steel Research International, 2012, pp. 1111-1114

21.

H. Paul, **M. Miszczyk**, M. Prażmowski: „Experimental investigation of texture gradients in aluminium/copper plates bonded through explosive welding process", Materials Science

Forum, 2012, Vol. 702-703, pp. 603-606

22.

M. Miszczyk, H. Paul, J.H. Driver, Cl. Maurice: „Microstructure and Texture Evolution during Annealing of Plane Strain Compressed Al and Al-1%Mn alloy Single Crystals”, Archives of Metallurgy and Materials, 2011, Vol. 56, Issue 5, pp. 933-938

Research Projects:

Supervisor:

- Krystalograficzne aspekty procesu rekrytalizacji w technicznych stopach aluminium, research project No: IP2011 036471, IMMS PAS, supervisor, 2011-2013,

Co-worker:

- Przemiany fazowe na ośnwie i na granicach między fazowych wymuszone przez intensywne odkształcenie plastyczne, international project No: UMO-2011/01/M/ST8/07822, IMMS PAS, co-worker, 2012-2014,
- Opracowanie i definicja modeli naprężenia uplastyczniającego materiałów polikrystalicznych w skali makro, project No: 2011/01/B/ST8/01649, IMMS PAS, co-worker, 2011-2014,
- Mechanizmy ewolucji struktury i tekstury w procesach zdrowienia i rekrytalizacji metali o sieci

regularnej ściennie centrowanej, project No: 3010 B/T02/2011/40, IMMS PAS, co-worker, 2011-2013,

- Wpływ struktury wydzieleni fazowych na proces rozdrobnienia strukturalnego oraz zachowanie w procesie rekrytalizacji w stopach aluminium przetworzonych metodami intensywnej przeróbki plastycznej, project No: 765/N - FRANCJA/2010/0, IMMS PAS, co-worker, 2010-2012,

- Opracowanie technologii wytwarzania wielowarstwowych wyrobów przeznaczonych na elementy wymienników ciepła wykonane z nowoczesnych materiałów funkcjonalnych na bazie stopów aluminium, project No: R15 048 03, IMMS PAS, co-worker, 2008-2010,

- Modelowanie rozwoju mikrostruktury i tekstury z uwzględnieniem roli pasm ścinania, project No: 3 T08A 06130, IMMS PAS, co-worker, 2008-2009.

Bilateral scientific co-operation with abroad:

Implementation of the Ph.D. dissertation in the "co-tutelle" system between the Institute of Metallurgy and Materials Science PAS in Krakow and the École Nationale Supérieure des Mines de Saint-Etienne, France, 2009-2013.

Experience gained In Poland and abroad:

2015 Erasmus Plus - Technical University of Denmark, Department of Wind Energy, Denmark - 3 weeks, prof. Dorte Juul Jensen.

2015 CHALMERS University of Technology, Department of Materials and Manufacturing Technology, Sweden - 2 weeks, Prof. Uta Klement.

2011, 2010, 2009 Région Rhône Alpes Fellowship - CMIRA - France - École Nationale Supérieure des Mines de Saint-Etienne - Centre Sciences des Matériaux et des Structures - 3x6 months, prof. Julian H. Driver, dr Claire Maurice.

Prizes and awards:

2014 Award of Polish Society for Materials for the Best PhD thesis in the field of Materials Engineering in 2013.

Organization of conferences and scientific events:

Member of the Organizing Committee International Conference "XII International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2013)", 2013.

Membership in professional societies:

Member of the Scientific Board of the Institute of Metallurgy and Materials Science of the Polish Academy of Sciences (2015-2018).

Polish Association for Materials Science

European Microbeam Analysis Society

Main scientific interest:

Non-homogeneous flow of metallic materials. The microstructure and texture transformations during recrystallization. The texture analysis by X-ray diffraction. TEM and SEM techniques of local orientation measurements.