Phone.: (12) 295 2857, room 022, Fax: (12) 2952804

e-mail: w.maziarz@imim.pl

Employment and positions

Institute of Metallurgy and Materials Science, Polish Academy of Sciences: Professor of Pol. Acad. Sci.

Scientific Career

M.Sc.: University of Mining and Metallurgy, 1994

Ph.D.: Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2001

D.SC.: Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2012

Scientific achievements

A total of **95** published items

The most relevant publications during last 5 years

1.

Wójcik A., **Maziarz W**., Szczerba M.J., Sikora M, Żywczak A., Aguilar-Ortiz C.O., Álvarez-Alonso P., Villa E., Flores-Zúñiga H., Cesari E., Dutkiewicz J., Chernenko V.; Transformation behavior and inverse caloric effects in magnetic shape memory Ni44-xCuxCo6Mn39Sn11 ribbons; JOURNAL OF ALLOYS AND COMPOUNDS 721 (2017) 172-181.

2.

W. Maziarz, A. Wójcik, J. Grzegorek, A. Zywczak, P. Czaja, M.J. Szczerba, J. Dutkiewicz, E. Cesari, Microstructure, magneto-structural transformations and mechanical properties of Ni50Mn37.5Sn12.5-xInx (x=0, 2, 4, 6 % at.) metamagnetic shape memory alloys sintered by vacuum hot pressing, JOURNAL OF ALLOYS AND COMPOUNDS 715 (2017) 445-453.

3.

Hudecki A., Gola J., Ghavami S., Skonieczna M., Markowski J., Likus W., Lewandowska M., **Maziarz W**., Los M.J.; Structure and properties of slow-resorbing nanofibers obtained by (co-axial) electrospinning as tissue scaffolds in regenerative medicine, PEER J 2017.

4.

Wójcik A., **Maziarz W**., Szczerba M.J., Sikora M., Dutkiewicz J., Cesari E.; Tuning magneto-structural properties of Ni44Co6Mn39Sn11 Heusler alloy ribbons by Fe-doping; MATERIALS SCIENCE AND ENGINEERING B 209 (2016) 23-29.

5.

Czaja P., Fitta M., Przewoźnik J., **Maziarz W**., Morgiel J., Czeppe T., Cesari E., Effect of heat treatment on magnetostructural transformations and exchange bias in Heusler Ni48Mn39.5Sn9.5Al3 ribbons, ACTA MATERIALIA, 103 (2016) 30-45.

6.

Marzec A., Radecka **M., Maziarz** W., KusiorA. , Pędzich Z., Structural, optical and electrical properties of nanocrystalline TiO2 ,SnO2 and their composites obtained by the sol-gel method, JOURNAL OF THE EUROPEAN CERAMIC SOCIETY 36 (2016) 2981-2989

7.

Czaja P., Szczerba M.J., Chulist R., Bałanda M., Przewoźnik J., Chumlyakov Y.I., Schell N., Kapusta C., **Maziarz W**., Martensitic transition, structure and magnetic anisotropy of martensite in Ni-Mn-Sn single crystal, ACTA MATERIALIA 118 (2016) 213-220

8.

Maziarz W., Wójcik A., Czaja P., Żywczak A., Dutkiewicz J., Hawełek Ł., Cesari E., Magneto-structural transformations in Ni50Mn37.5Sn12.5-xInx Heusler powders, JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS 412 (2016) 123-131

9.

Stevens E., Toman J., Kimes K., Chernenko V. , Wojcik A. , **Maziarz W**., Chmielus M., Microstructural Evaluation of Magnetocaloric Ni-Co-Mn-Sn Produced by Directed Energy Deposition, MICROSCOPY AND MICROANALYSIS 22 (Suppl 3), 2016, 1774-1775

10.

Maziarz W., Czaja P., Wójcik A., Wańkowicz K., Cesari E., Dutkiewicz J., Microstructure and martensitic transformation in Ni48Mn39.5Sn12.5-xSix metamagnetic Heusler alloy ribbons, INT. J. MATER. RES. (formerly Z. Metallkd.) 106, 7 (2015), 711-718

11.

Maziarz W., Czaja P., Wójcik A., Dutkiewicz J., Przewoźnik J., Cesari E., Microstructure and martensitic transformation of Ni50Mn37.5Sn12.5-xGex (X=0, 1, 2, 3) Heusler alloys produced by various technologies, MATERIALS TODAY: PROCEEDINGS 2S (2015) S523 - S528.

12.

Maziarz W, Czaja P, Szczerba M.J., Lityńska-Dobrzyńska L, Czeppe T, Dutkiewicz J, Influence of Ni/Mn concentration ratio on microstructure and martensitic transformation in melt spun Ni-Mn-Sn Heusler alloy ribbons, JOURNAL OF ALLOYS AND COMPOUNDS, 615 (2014) 173-177.

13.

Czaja P, **Maziarz W**, Przewoźnik J, Żywczak A, Ozga P, Bramowicz M, Kulesza S, Dutkiewicz J, Surface topography, microstructure and magnetic domains in Al for Sn substituted metamagnetic Ni-Mn-Sn Heusler alloy ribbons, INTERMETALLICS, 55 (2014) 1-8.

14.

Czaja P, **Maziarz W**, Przewoźnik J, Kapusta C, Hawelek Ł, Chrobak A, Drzymała P, Fitta M, Kolano-Burian A, Magnetocaloric properties and exchange bias effect in Al for Sn substituted Ni48Mn39.5Sn12.5 Heusler alloy ribbons, JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, 358-359 (2014) 142-148.

15.

Maziarz W, Czaja P, Dutkiewicz J, Wroblewski R, Leonowicz M, Magnetic and martensitic transformations in Ni46Mn41.5-xFexSn12.5 melt spun ribbons, MATERIALS SCIENCE FORUM, 782 (2014) 23-30.

16.

Hawelek L, Kolano-Burian A, Szade J, **Maziarz W**, Woznica N, Burian A, The atomic scale structure of nanographene platelets studied by X-ray diffraction, high-resolution transmission electron microscopy and molecular dynamics, DIAMOND AND RELATED MATERIALS, 35 (2013) 40-46.

17.

Maziarz W, Czaja P, Czeppe T, Góral A, Lityńska-Dobrzyńska L, Major Ł, Dutkiewicz J, Structure and martensitic transformation in Ni44Mn43.5Sn12.5-xAlx Heusler alloys, ARCHIVES OF METALLURGY AND MATERIALS, 58 (2013) 443-446.

18.

W. Maziarz, P. Czaja, M.J. Szczerba, J. Przewoźnik, C. Kapusta, A. Żywczak, T. Stobiecki, E. Cesari, J. Dutkiewicz, Room temperature magneto-structural transition in Al for Sn substituted Ni-Mn-Sn melt spun ribbons, JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, 348 (2013) 8-16.

Research Projects

Projects from National Science Centre

- In-situ cast composites strengthened with ceramic nanoparticles, leader of project (2017-2019)
- Advanced investigations of reorientation of martensite variants in plastically deformed Ni-Mn-Ga single crystal, researcher (2012-2015)
- Characterization of aluminum base composite reinforced with quasicrystals, researcher (2012-2015)
- Entropy changes in ferromagnetic shape memory alloys in relation to their e/a ratio to optimize magneto-caloric effect, leader of project (2013-2016)

Projects from National Centre for Research and Technology

- Innovative technology for the production of carbide tools for geotechnics, the main contractor, (2013-2015)
- Modern containing graphene composites based on copper and silver for the energy industry

and electronics - GRAMCOM, the main contractor (2013-2015)

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Innovative materials with reduced levels of the critical elements for magnetic cooling technology - COOLMAT - supervisor of tasks (2013-2016)

UE structural founds

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POIG.01.03.01.-00-058/08- Innovative materials for applications in energy-saving and environmentally friendly electrical devices (2009-2014) - supervisor of task

Experience gained abroad:

Pre-doc fellowship of Katolike University of Leuven (Belgium), 1998 (6 months)

"Memry Europe" scientific experience (Belgium), 1998 (1 month)

Scientific exchange Katolike University of Leuven (Belgium), 2000 (1 month)

Post-doc fellowship in IFW Dresden Institut für Komplexe Materialien (IKM) (Germany), 2001 (3 months)

Centre d'Etude de Chimie Metallurgique (CNRS) Paris-France, PAN-CNRS, 2004-2005 (4 weeks)

Univeristy of Islles of Baleares, Physic Department, 2005-2009 (10 weeks)

Education of scientific staff

Supervisor of 2 PhD thesis: Paweł Czaja (2015), Anna Wójcik (2017)

Thesis tutor Mrs. Katarzyna Wańkowicz (2014)

Invited lectures at international conferences Metallography 2013 and ICOMAT 2014

Prizes and awards:

Ph.D. with honour, 2001

Silver Cross of merit for scientific activity, 2012

Organization of conferences and scientific events

Member of Scientific Committee 15th International Symposium on Metallography, METALLOGRAPHY'013

Member of Advisory Committee of 10th Japanese-Polish Joint Seminar on Micro and Nano Analysis Sapporo 2014

Membership in professional societies

Polish Society for Microscopy,

IMIM-PAN Science Council,

Member of Committee on Materials Science of the Polish Academy of Sciences and secretary of the Section for Physical Metallurgy

Member of the Board of the Krakow branch of the Polish Society for Materials Science

Main scientific interest

Microstructure characterization using advanced transmission electron microscopy techniques. Martensitic transformation in ferromagnetic shape memory alloys. Fabrication and characterization of amorphous and nanocrystalline materials obtained by powder metallurgy and rapid solidification methods. Functional metal matrix composites with various carbon particles.