

Address for correspondence:

Institute of Metallurgy and Materials Sciences, Polish Academy of Sciences, 30-059 Kraków,
Reymonta 25 St.

Phone.: (012) 2952864, room 220 or (012) 2952877, room 005, Fax: (012)-2952804

e-mail: t.czeppe@imim.pl

Employment and positions

1977- 1984- Institute of Catalysis and Physical Chemistry of Surfaces, Polish Academy of Sciences, Lab. of Photoelectron Spectroscopy ESCA;

1984- 1988- PhD studies in the Institute of Metallurgy and Materials Sciences, PAS;

1988 -2011- employed in Institute of Metallurgy and Materials Sciences, PAS:

1988-1990 - physicist in Dept. of Functional Materials and Constructive Materials

1990-2006 - adiunkt (Post doc. Researcher)
- main specialist for the scientific equipment

from 2001- head of the Laboratory of Microcalorimetry of Accredited Testing Labs.

from 2012 - head of the Dept. of Physical and Chemical Properties of Materials

- head of the Laboratory of Calorimetry of Accredited Testing Labs.
- profesor PAS;

Scientific Carrier

1977- B.Sc. in Physics in Jagiellonian University, Dept. Mat-Fiz-Chem, direction -physics, specialization in Solid State Physics, diploma work in Laboratory of Physics of Semiconductors;

1977-1984- Institute of Catalysis and Physical Chemistry of Surfaces, Polish Academy of Sciences: work in the areas of 1. mass spectroscopy, 2. thin layers vacuum deposition, 3. photoelectron spectroscopy X-rays and UV excitation, cooperation and trainings in the Carl-Marx University, Leipsig (GDR);

1984-1989- Ph.D. Studies in the area of metallurgy and materials sciences in the Institute of Metallurgy and Materials Sciences, PAS, in the Laboratory of Transmission Electron Microscopy; Ph.D. work „The influence of the Si, Ni and In to the CuZn alloys on the martensitic transformation and structure of the phases β and β' ”, concerning shape-memory alloys. Specialization in the methods of transmission electron microscopy;

From 1989- employed In the Dept. of Functional Materials and Constructive Materials, worked in the area of the SME alloys, intermetallic phases and metallic glasses. Initiated and developed laboratory of calorimetry and thermal analysis, accredited by the Polish Accreditation Center (PCA). Head of the Laboratory;

2012 - habilitation from the area of the bulk metallic glasses, monograph: „Ni-based metallic glasses, properties of the amorphous and amorphous-crystalline phases” ISBN 978-83-60768-03-07;

from 2012- head of the Dept. of Physical and Chemical Properties of Materials and of the Laboratory of Calorimetry of Accredited Testing Labs.;

-

Member of the Scientific Board of the IMMS PAS in years 20012-2014 i 2015-2018;

-

Member of the Task Party of the Materials Investigations Methods, of the Committee of the Materials Sciences PAS (2012-2014);

-

Member of the Commission of Metallurgy and Foundry of the Krakow Division of Polish Academy of Sciences in 2015-2018;

-

Member of the Editorial Board of the scientific magazine „Pisma o Materiałach" (WWW.lettersonmaterials.com), Eds.: Inst. of Metals Superplasticity Problems RAS, A. Baikov Institute of Metallurgy and Materials RAS, ISSN 2218-5046

-

Member of the International Advisory Board of the EU Project "SINTERCER"

Scientific achievements

The most relevant publications during last 5 years

1.

Mechanism and kinetics of nano-crystallization of the thermally stable NiNb(ZrTi)Al metallic glasses, **T. Czeppe**, J. Therm. Anal. Calorimetry (2010), 101, 615-662;

2.

Structure and properties of Ni-based amorphous ribbons consolidated by high pressure torsion; G. Korznikova,

T. Czeppe

and A. Korznikov , Rev.Adv.Mater.Sci. (2010), 25, 67-73;

3.

Heat capacities of some binary intermetallic compounds in Al-Fe-Ni-Ti system; B. Onderka, A. Sypien, A. Wierzbicka-Miernik,

T. Czeppe

, L.A. Zabdyr, Archives of Metallurgy and Materials (2010), 55(2), 435-439;

4.

Characteristics of 100Cr6 bearing steel after thixoforming process performed with prototype device; Ł. Rogal, J. Dutkiewicz, **T. Czeppe**, J. Bonarski, B. Olszowska-Sobieraj, Trans. Nonferrous Met. Soc. China, (2010), 20, 1033-1036;

5.

Processing Age-hardenable Alloys by Equal-Channel Angular Processing at Room Temperature: Strategies and Advantages; Nguyen Q. Chinh, Jenő Lubiczka, **Tomasz Czeppe**, János Lendvai and Terence G. Langdon, Materiale Science Forum (2010), 633-634, 527-534;

6.

Microstructure and mechanical properties of NiNbZrTiAl amorphous alloys with 10 and 25 at.% Nb content; **T. Czeppe**, P. Ochcin, A. Sypień and Ł. Major, Journal of Microscopy (2010), 237(3) 320-324;

7.

The microstructure and mechanical properties of the Ni-Al-V alloys prepared by levitation and crystallization in copper mould, **T. Czeppe**, G. Korznikova, Z. Świątek, A. Sypień, A. Korznikova and W. Krajewski, Solid State Phenomena (2011), 172-174, 475-480;

8.

Phase Structure and Metastability of NiAlVTi Alloys Prepared by Levitation; **Tomasz Czeppe**, Anna Sypień, Zbigniew Świątek, Marek Michalec, Anna Wierzbicka Miernik, Andrea Kováčová, Jana Bidulská, Chemické listy (2011), 105, 439-441;

9.

First measurement of the heat effect of the grain boundary wetting phase transition; B.B. Straumal, O. A. Kogdenkova, S.G. Protasova, P. Zięba,

T. Czeppe

, B. Baretzky, R. Z. Valiev, J Mater. Sci. DOI 10.10007/s10853-011-5257-6;

10.

Specific heat capacities of Some Ternary Aluminides; B. Onderka, A. Sypień, A. Wierzbicka Miernik, **T. Czeppe** and L. A. Zabdyr, J of Phase Equilibria and Diffusion (2011), 32, 39-41;

11.

Microstructure of the Ni-W solid solution prepared by levitation and after high pressure torsion severe plastic deformation; **T. Czeppe**, A. Sypień, G. Korznikova, A. Korznikov, Solid State Phenomena (2012), 186, 104-107;

12.

Heat effect of grain boundary wetting in Al-Mg alloys; O.A Kogdenkova, S.G. Protasova, A. A.

Mazilkin, B.B. Straumal, , A. S. Gornakova, P. Zięba,

T. Czeppe

& B. Baretzki, Journal of Materials Science (2012), 47 (24), 8367-8371;

13.

Effect of the Wetting of Grain Boundaries on the Formation of a Solid Solution in the Al-Zn System; O. A. Kogtenkova, B. B. Straumal, S. G. Protasova, A. S. Gornakova, P. Zięba and **T. Czeppe**

, JETP Letters (2012), 96 No. 6, 380-384;

14.

The Microstructure of the Ni-Al-V alloys prepared by levitation, rapid quenching and high pressure torsion; G. Korznikova, **T. Czeppe** and A. Korznikov, Rev. of Adv. Mater. Sci. (2012), 31(3), 40-46;

15.

Phase composition and martensitic transformation in alloys and Fast quenched ribbons of Ni-Al-X (X = Co, Cu, Cr, Zr); Ju. M. Koval, G.M. Monastirskij, V. I. Kolomichev, V. V. Odnosum, P. Ochinnikov, **T. Czeppe**, Metallofizika i Noveishie Tekhnologii (2012), 3496), 855-865;

16.

Microstructure of the NiAlV alloys subjected to the HPT deformation; **T. Czeppe**, G.F. Korznikov, A.W. Korznikov, L. Lityńska-Dobrzyńska, Z. Świątek, Archives of Metallurgy and Materials (2013), 38, 447-452;

17.

Structure and martensitic transformation in Ni₄₄Mn_{43,5}Sn_{12,5-x}Al_x Hauser alloys; W. Maziarz, P. Czaja, **T. Czeppe**, A. Góral, L. Lityńska-Dobrzyńska, Ł. Major, J. Major, J. Dutkiewicz, Archives of Metallurgy and Materials (2013), 38, 443-446;

18.

Characterization of semi-solid processing of aluminum alloy 7075 with Sc and Zr additions; Ł. Rogal, J. Dutkiewicz, H. V. Atkinson, L. Lityńska-Dobrzyńska,

T. Czeppe

, M. Modigell, Materials Science & Engineering A A 580 (2013) 362-373;

19.

Phase transformations In Ni-MgZn alloys during high pressure torsion and subsequent heating; O.A. Kogtenkova, A. A. Mazilkin, B. B. Straumal, G. E. Abrosimova, P. Zieba,

T. Czeppe

, B. Baretzki, R.Z. Valiev, J. Mater. Sci. DOI 10.1007/s10853-013-7266-0;

20.

Structure and martensitic transformation In NiMnSn ribbons with partial Sn substitution by Al; W. Maziarz, P. Czaja, M. Faryna,

T. Czeppe

, A. Góral, J. Dutkiewicz, Solid State Phenomena (2013), 203-204, 232-235;

21.

Thermal stability and mechanical properties of the TiCuZrPd glasses with 10, 14 and 20 at.% Pd; A. Sypień, **T. Czeppe**, G. Garzeł, L. Lityńska-Dobrzyńska, J. Latuch, N.Q. Chinh, Journal of Alloys and Compounds (2014) 615 (S108-S112), DOI: 10.1016/j.jallcom.2013.12.240,;

22.

Influence of Ni/Mn concentration ratio on microstructure and martensitic transformation in melt spun Ni-Mn-Sn Heusler alloy ribbons; W. Maziarz, P. Czaja, M.J. Szczerba, **Tomasz Czeppe**, L. Lityńska-Dobrzyńska, Jan Dutkiewicz, Journal of Alloys and Compounds (2014) 615 (S173-S-177);

23.

Influence of the composition modifications on kinetics of crystallization of the amorphous NiNbZrTiAl alloys; **T. Czeppe**, A. Wierzbicka-Miernik, A. Góral, S. Gyurov, Nauczni Izvestija/ Scientific Proceedings/ Conference Proceedings "NDT days 2014"/"Дни на безразрушителния контрол 2014" (2014), 1(150), 254-257;

24.

Mechanical properties of some Ni- and Al-based amorphous metal alloys and their relationship with characteristic parameters of viscosity; Gyurov S., Stefanov S., **Czeppe T.**, Russev K., Nauczni Izwiestija/ Scientific Proceedings/ Conference Proceedings "NDT days 2014"/"Дни на безразрушителния контрол 2014" (2014), 1(150), 258-261;

25.

Composition and microstructure of the Al- multilayer graphene composites achieved by the intensive deformation, **T. Czeppe**, E. Korznikova, P. Ozga, M. Wrobel, L. Litynska-Dobrzynska, G.F. Korznikova, A. W. Korznikov, P. Czaja, R. Socha, Acta Physica Polonica (2014), 126, 921-927;

26.

Influence of Sr and Zr substitution on dielectric properties of $(Ba_{1-x}Sr_x)(Ti_{1-x}Zr_x)O_3$; C. Kajtoch, W. Bąk, B. Garbarz-Glos, K. Stanuch, W. Tejchman, K. Mroczka, **T. Czeppe**, Ferroelectrics (05/2014) 463(1) 130-136;

27.

Study of physical properties of $Ba(Ti_{1-2x}Fe_xNb_x)O_3$ ceramics; C. Kajtoch, W. Bąk, B. Garbarz-Glos, K. Ruebenbauer, A. Błachowski, D. Ziętek, **T. Czeppe**, K. Mroczka, Ferroelectrics (05/2014) 464(1) 42-48;

28.

Influence of Sn-substitution on the phase transitions character in polycrystalline $(Ba_{0.9}Sr_{0.1})(Ti_{1-y}Sn_y)O_3$; C. Kajtoch, W. Bąk, B. Garbarz-Glos, D. Ziętek, M. Gabrys, K. Stanuch, **T. Czeppe**, Ferroelectrics (05/2014) 464(1) 15-20;

29.

Application of the high pressure torsion supported by mechanical alloying for metal-graphene composites preparation; **Tomasz Czeppe**, Elena Korznikova, Piotr Ozga, Lidia Litynska-Dobrzynska, Robert Socha, Mechanik (2015), 2, 147-157;

30.

Effect of heat treatment on magnetostructural transformations and Exchange bias In Hauser Ni₄₈Mn₃₉,₅Sn₉,₅Al₃ ribbons, P. Czaja, M. Fitta, J. Przewoźnik, W. Maziarz, J. Morgiel, **T. Czeppe**, E. Cesari, Acta Mat. 103 (2016) 30-45

31.

Properties of the Ti₄₀Zr₁₀Cu₃₆Pd₁₄ BMG Modified by Sn and Nb Additions, A. Sypien, M. Stoica, and **T. Czeppe**, Journal of Mat. Eng. and Performance 25, (2016) 800-808

32.

Modification of the Ti₄₀Cu₃₆Zr₁₀Pd₁₄ BMG Crystallization Mechanism with Heating Rated 10-140 K/min, **T. Czeppe**, A. Sypien and A. Wierzbicka-Miernik Journal of Mat. Eng. and Performance 25(12) (2016) 5289-5301

33.

Thermo-mechanical study of rapidly solidified NiNbZrTiAl amorphous metallic alloys, Stoyko Gyurov, **Tomasz Czeppe**, Lyudmil Drenchev, Georgi Stefanov, Krassimir Russew, Materials Science & Engineering A, A684 (2017) 222-228

34.

Structure and Properties of the Graphene- and Diamond - copper Composites Fabricated by the High Pressure-High Temperature Method, Katarzyna Janik, **Tomasz Czeppe**, Lucyna Jaworska, Paweł Figiel, Lidia Litynska -Dobrzynska, Piotr Ozga; Mechanik 5-6 (2016) 502-503

35.

Comparison of the Cu- and Al.-graphene composites produced with use of the severe plastic deformation; **Tomasz Czeppe**, Galia Korznikova, Aleksander Korznikov, Piotr Ozga, Lidia Litynska -Dobrzynska, Robert Socha, Anna Sypien, Mechanik 5-6 (2016) 500-501

Research Projects

European Union Projects

-

Bulk Metallic Glass Forming Alloys and Nanocrystallization, properties and application, 4 Frame Program UE, Maria Curie Action; Contract No.HPRN-CT-2000-00033. (coordinator Prof. A. R. Yavari, Polytechnic Grenoble), IMMS PAS, 2000-2003;

-

Ductilisation of Bulk Metallic Glasses (BMG) by Length-scale Control in BMG's Composites and Application, 6 Frame Program UE, Maria Curie Action Contract No. MPRN-CT-2003-504692 (coordinator Prof. A. R. Yavari, Polytechnic Grenoble). IMMS PAS, 2004-2007;

-

COST 535, *Thermodynamics of Alloyed Aluminides*, (Thalu), IMMS PAS, 2002-2006.

-

Development of a sintering center and know-how exchange for non equilibrium sintering methods of advanced ceramic composite materials, REGPOT-CT-2013-316232-SINTERCER the 7th Framework Program EU, 2013-2016 (in cooperation with the Institute of Advanced Manufacturing Technology in Krakow, leader of the project Prof. Lucyna Jaworska Ph.D., D.Sc.)

Projects founded by Ministry of Science and Higher Education

-

Ni based glasses - nanocrystallization and mechanical properties- Project No. N 3T08A 067 28, 2005-2008.

Projects founded by the Polish National Science Centre

-

Influence of selected alloying elements on the crystallization and mechanical properties of metallic glasses NiNb(ZrTi) and TiCuZr, Project No. N N507 303940, 2011-2014.

-

Massive amorphous-crystalline composites on the base of Cu. Project IP2011 026671 (Project leader D.Sc. Ing. Tomasz Kozieł, AGH), 2012-2016.

Projects founded by the National Centre for Research and Development

-

Modern, graphene containing composites on the base of copper and silver for the energetic and electronic industries.- GRAMCOM, GRAF-TECH, Task: *Application of the HPT, severe plastic deformation method to the production of the graphene containing composites for the electrical contacts and heat abstracting substrates*
, 2013-2015 (Task lider Ph.D., D.Sc. Tomasz Czeppe, prof. PAS, coordinator in IMMS PAS Prof. J. Dutkiewicz, Ph.D, D.Sc.).

International cooperation and projects

-

Institute for Metals Superplasticity Problems of the Russian Academy of Sciences, Ufa, Russia;

-

Institute of Metal Science, Equipment and Technologies 'Acad. Angel Balevski' with Hydroaeronautics Centre of the Bulgaria Academy of Sciences;

-

Institute of Solid State Physics of the Russian Academy of Sciences, Chernogolovka, Russia;

-

Dept. of General Physics, Uniwersytet Eötvös Loránd, Budapest, Hungary;

Intermetallic phases, exhibiting magnetic properties, relation between microstructure, magnetic and thermal properties, in cooperation with the Institute for Metals Superplasticity Problems of the Russian Academy of Sciences, Ufa, Russia 2005-2007.

The influence of large plastic strains on the structure and physical properties of Ni-based intermetallic phases and amorphous alloys, in cooperation with the Institute for Metals Superplasticity Problems of the Russian Academy of Sciences, Ufa, Russia 2008-2010.

The influence of the intensive deformation on the structure and physical properties of Ni-based intermetallic phases of close packed structure and amorphous phases, in cooperation with the Institute for Metals Superplasticity Problems of the Russian Academy of Sciences, Ufa, Russia 2011-2013.

Amorphous alloys, relaxation, viscosity, crystallization, mechanical and other properties for

application; in cooperation with the Institute of Metal Science, Equipment and Technologies 'Acad. Angel Balevski' with Hydroaeronautics Centre of the Bulgaria Academy of Sciences, 2012-2014 .

The structure and properties of the complex amorphous-crystalline and crystalline-crystalline systems achieved by the severe plastic deformation, on the base of bilateral cooperation agreement with the Institute for Metals Superplasticity Problems of the Russian Academy of Sciences, Ufa, Russia 2014-2016.

Metallic glasses: viscous flow, thermal stability in relation to mechanical properties. in cooperation with the Institute of Metal Science, Equipment and Technologies 'Acad. Angel Balevski' with Hydroaeronautics Centre of the Bulgaria Academy of Sciences, 2015-2017.

Experience gained abroad

NATO Advanced School of Laser Processing -1992;

International School of Materials Science, University Paris -Sud/CNRS, France 1992;

International School of „In Situ Electron Microscopy in Materials Research”, Max Planck Institute, Haale, Germany, 1995.

International School of “Structural Defects in Intermetallic Compounds” University of Tuluze, Bonascre, France, 2006.

Royal School of Technology, Stypendist of the Swedish Institute, Sztokholm, Szwecja, 1991-1992 (4 month).

Univ. of Balearic Islands, Palma de Mallorca, Hiszpania, 1999 (4 month).

Institute of the Metals Superplasticity Problems, Russian Academy of Sciences, Ufa, Russia

Centre d'Etudes de Chemie Métallurgique, CNRS, Vitri-Sur-Seine, Cedex, France;

The Institute of Complex Materials, Leibnitz -IFW, Dresden- scientific scholarship granted by the Deutscher Akademischer Austauschdienst DAAD - 2016

Most important awards

1990 r - Award of the Scientific Secretary of the Polish Academy of Sciences

2011 r - Award of the Polish and Russian Academies of Science (silver medal) for the outstanding scientific achievements in the Polish - Russian scientific cooperation for year 2010.

Membership in the professional societies

European Materials Research Society,

Polish Association for Materials Science,

Polish Society for Microscopy,

Polish Society of Composite Materials, European Microbeam Analysis Society.

Main scientific interest

Modern methods in calorimetry and thermal analysis, application in materials sciences and Physico-chemistry of metallic systems;
Electron microscopy characterization of the materials;
Metallic glasses and amorphous materials;
Crystallization processes;
High temperature intermetallic phases - properties and microstructure;
Application of the severe plastic deformation for the introduction of new properties in metals and alloys;

Other activities and scientific achievements

Organization of the International Seminar and School of thermal analysis: *"Practical*

Applications of Thermal Analysis Methods in Materials Science"
IMMS PAS/Netzsch Comp., 2012 Krakow.

Students and Ph.D. trainings

2010 - training: Anna Piechota, Dept. of Metals Engineering and Industrial Informatics, AGH.

2014 - PhD training: B.Sc. Ing. Angelika Kmita, Ph.D. Studies, Dept. of Foundry, AGH.

2014 - training: inż. Marlena Tomsia, Dept. of Metals Engineering and Industrial Informatics AGH.

2015- PhD training: B.Sc. ing. Agnieszka Uniwersał, Dept. of Metals Engineering and Industrial Informatics, AGH.