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Employment and positions

Institute of Metallurgy and Materials Science, Polish Academy of Sciences: metallurgist (since 2015), assistant professor (since 2018). Since 2016 an expert in the Accredited Testing Laboratories of IMIM PAS in the Physicochemical Test Laboratory L-8. Deputy Head of Laboratory L-8 since 2019. From November 2019 to April 2021 Deputy Head of the Testing Laboratory at IMIM PAN. Since 2020 also an expert in the Laboratory of Calorimetry and Thermal Analysis L-5.

Scientific career:

M. Sc.: Jagiellonian University, Faculty of Chemistry, Chemistry, 2014.

Ph.D.: Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2018.

Scientific achievements

The most relevant publications during last 5 years:

1.

S. Terlicka, A. Dębski, Mixing enthalpy of liquid Ga-Li-Zn alloys, *Thermochimica Acta*, 625 (2016) 3-8.

2.

S Terlicka, A Dębski, W Gaşior, R Dębski, Thermodynamic properties of Ga-Zn system. Experiment vs model, *The Journal of Chemical Thermodynamics*, 102 (2016) 341-347.

3.

S. Terlicka, A. Dębski, P. Fima, Enthalpy of formation of Li₂Sb and Li₃Sb and mixing enthalpy of liquid Li-Sb alloys, *Journal of Alloys and Compounds*, 673 (2016) 272-277.

4.

S. Terlicka, A. Debski, W. Gaşior, Thermodynamic description of the Ga-Li-Zn system, *Thermochimica Acta* 659 (2018), 66-73.

5.

S. Terlicka, A. Debski, W. Gaşior, Thermodynamic properties of Li-Pb system, *Journal of Molecular Liquids* 249 (2018) 66-72.

6.

S. Terlicka, A. Dębski, P. Fima, Enthalpy of mixing of ternary Li-Pb-Sb alloys, *Journal of Phase Equilibria and Diffusion*, 39(4) (2018) 412-425.

7.

S. Terlicka, A. Dębski, A. Budziak, M. Zabrocki, W. Gašior, Structural and physical studies of the Ag-rich alloys from Ag-Li system, *Thermochimica Acta* 673 (2019) 185-191.

8.

S. Terlicka, A. Dębski, W. Gierlotka, A. Wierzbicka-Miernik, A. Budziak, A. Sypien, M. Zabrocki, W. Gašior, Structural and physicochemical properties of silver-rich Ag-Al alloys, *Calphad*, 68 (2020) 101739.

9.

S. Terlicka, A. Dębski, M. Saturnus, A. Fornalczyk, W. Gašior, Calorimetric investigation of the Li-Pt system, *Journal of Molecular Liquids*, 312 (2020) 113446.

10.

S. Terlicka, A. Dębski, W. Gašior, Thermodynamic properties of Li-Sb liquid solution by QAM, *Metallurgical and Materials Transactions A*, 51 (2020) 4826-4837.

11.

S. Terlicka, A. Dębski, W. Gašior, W. Gierlotka, M. Peška, M. Polański, Thermodynamic properties of liquid Mg-Pt alloys determined by the calorimetric method, *Journal of Molecular Liquids*, 317 (2020) 113976.

12.

S. Terlicka, A. Dębski, M. Saturnus, A. Fornalczyk, W. Gašior, Calorimetric measurements of the Li-Pd system, 318 (2020) 114074.

13.

S. Terlicka, A. Dębski, W. Gašior, A. Fornalczyk, M. Saturnus, Experimental results of the Li-Pb-Pt system obtained by the high temperature drop calorimetry, *Journal of Molecular Liquids*, 332 (2021) 115824.

14.

S. Terlicka, A. Dębski, A. Sypień, W. Gąsior, A. Budziak, Determination of thermophysical and thermodynamic properties of Ag-Mg alloys, *Materials Today Communications* 29 (2021) 102946

15.

A. Dębski, **S. Terlicka**, Calorimetric measurements of liquid (Al + Li + Zn) alloys, *The Journal of Chemical Thermodynamics*, 92 (2016) 91-96.

16.

A Dębski, **S Terlicka**, W Gąsior, A Góral, Calorimetric study of the Li-Zn system, *The Journal of Chemical Thermodynamics*, 103 (2016) 374-380.

17.

A. Dębski, **S. Terlicka**, A.S. Budziak, W. Gąsior, Calorimetric and XRD studies of Ag-rich alloys from Ag-Li system, *Journal of Alloys and Compounds* 732 (2018) 210-217.

18.

W. Gąsior, A. Dębski, **S. Terlicka**, Calorimetric and Electromotive Force Measurements of Al-Li-Zn Liquid Solution, *Journal of Phase Equilibria and Diffusion*, 37(4) (2016) 481-490.

19.

A. Dębski, M.H. Braga, **S. Terlicka**, W. Gąsior, A. Góral, Formation enthalpy of Ga-Li intermetallic phases. Experiment vs. calculations, *Journal of Chemical Thermodynamics*, 124 (2018) 201-106.

20.

M. Trybula, **S. Terlicka**, P. Fima, Thermodynamics of liquid Li-Sb alloys - experiment vs modeling, *Journal of Chemical Thermodynamics*, 128 (2019) 134-140.

21.

M. Saternus, A. Fornalczyk, W. Gąsior, A. Dębski, **S. Terlicka**, Extraction and purification of PGM solutions obtained from metallurgical treatment of used automotive catalytic converters,

METAL 2019 Conference Proceedings, (2019) 1381-1386; ISBN- 978-80 -87 294-92-5.

22.

M.H.Braga, A. Dębski, **S.Terlicka**, W. Gaşior, A. Góral, Experimental and ab initio study of the Ag-Li system for energy storage and high-temperature solders, Journal of Alloys and Compounds, 817, (2020), 152811.

23.

M. H. Braga, A. Dębski, **S. Terlicka**, W. Gaşior, A.Góral, The Ag-Li system's experimental and ab initio thermodynamic dataset, Data in brief, 28, (2020), 104939.

24.

24. W. Gierlotka, A. Dębski, **S. Terlicka**, M. Saturnus, A. Fornalczyk, W. Gasior, On the Pb-Pd system. Calorimetric studies and ab-initio aided thermodynamic calculations, Journal of Molecular Liquids, 316 (2020) 113806.

25.

M. Saturnus, A. Fornalczyk, W. Gaşior, A. Dębski, **S. Terlicka**, Modifications and improvements to the metal collector method using an mhd pump for recovering platinum from used car catalysts, Catalysts, 10 (2020) 880.

26.

A. Dębski, S. Terlicka, W. Gaşior, W. Gierlotka, M. Pęska, M. Polański, Thermodynamic properties of Mg-Pd liquid alloys, Journal of Molecular Liquids, 317 (2020) 114024.

27.

W. Gierlotka, A. Dębski, **S. Terlicka**, W. Gaşior, M. Pęska, M. Polański, Insight into phase stability in the Mg - Pd system. The ab-initio calculations, Journal of Phase Equilibria and Diffusion, 41 (2020) 681-686.

28.

W. Gierlotka, A. Dębski, **S. Terlicka**, W. Gaşior, M. Pęska, M. Polański, I-T. Lin, Insight into

phase stability in the Mg - Pt system. The ab initio calculations, Journal of Phase Equilibria and Diffusion, (2021); <https://doi.org/10.1007/s11669-020-00857-7>.

29.

A. Dębski, M. Pęska, J. Dworecka-Wójcik, **S. Terlicka**, W. Gąsior, W. Gierlotka, M. Polański, Structural and calorimetric studies of magnesium-rich Mg-Pd alloys, Journal of Alloys and Compounds, 858 (2021) 158085.

30.

A. Dębski, W. Gierlotka, **S. Terlicka**, W. Gąsior, On the Mg-Pb system. Calorimetric studies and thermodynamic calculations, Journal of Alloys and Compounds, 861 (2021) 158396.

31.

A. Dębski, **S. Terlicka**, W. Gąsior, W. Gierlotka, M. Pęska, J. Dworecka-Wójcik, M. Polański, Calorimetric studies of magnesium-rich Mg-Pd alloys, Materials, 14(3) (2021), 680.

32.

A. Dębski, **S. Terlicka**, W. Gąsior, M. Saternus, A. Fornalczyk, Calorimetric studies and thermodynamic properties of Li-Pb-Pd liquid alloys, Journal of Molecular Liquids, 339 (2021) 116791.

33.

M. Pęska, K. Smektalska, J. Dworecka-Wójcik, **S. Terlicka**, W. Gąsior, W. Gierlotka, A. Dębski, M. Polański, Hydrogen sorption behavior of mechanically synthesized Mg-Ag alloys, International Journal of Hydrogen Energy, 46 (2021) 33512-33163.

Monographs:

Badania termodynamiczne stopów z litem jako materiałów do magazynowania energii, 335-350,

2017, ISBN 978-83-60768-41-9, POLSKA AKADEMIA NAUK Instytut Metalurgii i Inżynierii Materiałowej im. Aleksandra Krupkowskiego ul. Reymonta 25, 30-059 Kraków.

Właściwości termodynamiczne stopów Li-Pb-Sb, 2018, ISBN 978-83-60768-45-7, POLSKA AKADEMIA NAUK Instytut Metalurgii i Inżynierii Materiałowej im. Aleksandra Krupkowskiego ul. Reymonta 25, 30-059 Kraków.

Research Projects:

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Thermodynamic characterization of the Ga-Li system, Project SONATA (NCN), 2014/13/D/ST8/03147, IMIM PAS, participant.

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Wpływ stężenia litu w stopach Pb-Li na zwilżalność oraz efektywność ekstrakcji metali cienkich warstw katalitycznych w porowatych kapilarach ceramicznych. Badania, modelowanie, Project OPUS (NCN), 2017/27/B/ST8/01464, (IMIM PAN), participant.

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Thermodynamic properties of alloys from Mg-Pd and Mg-Pt systems, Project OPUS (NCN), 2019/31/B/ST8/01371, (IMIM PAN/ WAT), participant.

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The effect of the addition of phosphorus and silver on the absorption/desorption properties of magnesium, 2019-2020 (IMIM Project Miniatura 3 (NCN), 2019/03/X/ST5/00053, (IMIM PAN), project leader.

Awards:

Larry Kaufman scholarship, CALPHAD XLVI conference, Saint-Malo, France, 2017.

Main Scientific interests:

Metallic materials for energy and hydrogen storage; Thermodynamic properties of alloys based on reactive, alkali metals; measurements of formation and mixing enthalpies with the use of calorimetric methods; electromotive force measurements.