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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 Gąsior, 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 Li<sub>2</sub>Sb and Li<sub>3</sub>Sb and mixing enthalpy of liquid Li-Sb alloys, *Journal of Alloys and Compounds*, 673 (2016) 272-277.

4.

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

5.

**S. Terlicka**, A. Debski, W. Gąsior, 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. Gąsior, 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. Gąsior, Structural and physicochemical properties of silver-rich Ag-Al alloys, *Calphad*, 68 (2020) 101739.

9.

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

10.

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

11.

**S. Terlicka**, A. Dębski, W. Gąsior, W. Gierlotka, M. Pęska, 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. Saternus, A. Fornalczyk, W. Gąsior, Calorimetric measurements of the Li-Pd system, 318 (2020) 114074.

13.

**S. Terlicka**, A. Dębski, W. Gąsior, A. Fornalczyk, M. Saternus, 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. Gąsior, 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. Gąsior, 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. Saternus, 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. Saternus, A. Fornalczyk, W. Gąsior, 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. Gąsior, 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. Gąsior, 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. Gąsior, 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. Gasior, 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. Smekalska, 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.