Prof. Wojciech Marczak, Ph.D., D.Sc.

Graduate in Chemistry with honour from the University of Silesia in Katowice, Poland, in 1986, received his Ph.D. degree in Chemistry from the same University in 1993. He was conferred D.Sc. (*habilitation*) by the University of Wrocław, Poland, in 2002. Titular professor since 2018. Research and didactic worker at the Faculty of Mathematics, Physics and Chemistry of the University of Silesia from 1987 to 2012. Professor at the Institute of Occupational Medicine and Environmental Health in Sosnowiec from 2012 to 2019. Professor at the Faculty of Science and Technology of Jan Długosz University in Częstochowa since 2019. Assistant professor at University of Rostock, Germany, in the academic year 2001/02. Visiting professor at University Paul Verlaine – Metz (presently Université de Lorraine, France) and Kazan Federal University (Russia).

W. Marczak's scientific interests include physical chemistry and acoustics. His favourite topics in physical chemistry are molecular interactions in liquids studied by thermodynamic methods, supplemented by neutron scattering (in co-operation with Dr László Almásy from Hungarian Academy of Sciences), and theoretical considerations (in co-operation with Prof. Piotr Lodowski, Ph.D. D.Sc., from University of Silesia).

Selected ideas and achievements of W. Marczak and co-workers reported in peer-reviewed journals are listed below:

- thermodynamic correct formulae for the quantities related to the speed of sound in liquids: internal pressure in and the acoustic impedance of the ideal mixture and the respective "excesses" for the real systems [W. Marczak, *Phys. Chem. Chem. Phys.* 4 (2002) 1889, *ibid.* 3930; W. Marczak, *J. Mol. Liquids*, 325 (2021) 115142],
- formation of microheterogeneities in binary aqueous solutions explained in terms of aggregation due to hydrogen bonds between water – amine hydrates [W. Marczak, B. Czech, L. Almásy, D. Lairez, *Phys. Chem. Chem. Phys.* 13 (2011) 6260],
- successful application of Grunberg-Nissan formula with just one interaction parameter to the viscosity of aqueous solutions thanks to a concept of mixture concentration expressed in terms of "kinetic entities" fractions rather than mole fractions [W. Marczak, N. Adamczyk, M. Łężniak, *Int. J. Thermophysics* 33 (2012) 680],
- a model of surface pressure isotherms for analyzing particle layers on liquid subphases [W. Marczak, M. Rogalski, A. Modaressi, E. Rogalska, *Colloids Surf. A: Physicochem. Eng. Aspects* 489 (2016) 128].

A polynomial for the speed of sound in water at temperatures 0 – 95 ^{o}C and atmospheric pressure [W. Marczak, *J. Acoust. Soc. Am.* 102 (1997) 2776] is one of the reference equations recommended by the National Physical Laboratory, United Kingdom [http://resource.npl.co.uk/acoustics/techguides/soundpurewater/].

W. Marczak is a member of the Polish Chemical Society and the Scientific Committee of "Thermodynamics & Thermochemistry" at the International Confederation of Thermal Analysis and Calorimetry since 2021 (http://www.ictac.org/scientific_commission.html).

W. Marczak was invited lecturer at several scientific conferences and meetings, e.g.:

- 5th Central and Eastern European Conference on Thermal Analysis and Calorimetry (CEEC-TAC5) and 14th Mediterranean Conference on Calorimetry and Thermal Analysis (Medicta2019); Rome, Italy, 2019,

- Seminar of the Department of Physical Chemistry at Technical University of Warsaw and the Thermodynamic Section of the Polish Chemical Society; Warsaw, Poland, 2015,
- I Doctoral Symposium on Chemistry in Lodz; University of Lodz, Poland, 2013
- Bunsenkolloquium “Molecular Thermodynamics of Complex Systems”, University of Rostock, Germany, 2012,
- XVIII International Conference on Chemical Thermodynamics in Russia, RCCT-2011; Samara, Russia, 2011.

His hobby is history and landscape photography.