

Witold ŁOJKOWSKI

Curriculum Vitae

Personal Information

Date and place of birth: July 25, 1952, Warsaw E-mail: <u>w.lojkowski@labnano.pl</u>; www.labnano.pl

ORCID: 0000-0001-8521-0688

Google scholar: https://scholar.google.pl/citations?hl=pl&user=y2AvD1IAAAAJ

Current Position

Institute of High Pressure Physics, Polish Academy of Sciences

Academic Titles

1974 – MSc in Physics, Faculty of Physics, University of Warsaw

1981 – PhD in Materials Science, Warsaw University of Technology

1991 – Habilitation (DSc) in Materials Science, Cracow University of Science and Technology

2012 - Full Professor, awarded by the President of Poland

Positions and Functions

Since 1986: Head of the Laboratory (currently: Laboratory of Nanostructures)

1988–1992: CEO of spin-off company IZOPRESS Ltd., producing high-pressure equipment

2006: Member of the advisory team to the Minister of Science and Education (Nanotechnology)

2005–2014: Member, COST "Materials, Physics, Nanoscience" Domain Committee

2005–2014: Polish Delegate to the OECD Working Party on Nanotechnology

2005–2014: Polish Expert to the European Commission Committee on "Nanotechnology, Materials and Production Methods"

2010–2016: Professor, Białystok University of Technology, Faculty of Management

2010–2016: Supervised over 40 engineering and master's theses

2019–2022: Member, User Committee, NANORIGO project (EU governance of nanotechnology risks)

International Experience

1981–1982: Alexander von Humboldt Fellow, University of Saarbrücken, Germany

1986–2007: Over 36 months of research as a visiting scientist at:

- Max Planck Institute for Metals Research, Stuttgart, Germany

- Osaka University, Japan

- University of Marseille, France
- University of Ulm, Germany

Scientific Achievements

1981–1995: Development of the theory of grain and interphase boundary structures.

1985–1990: Led development of SHS synthesis of SiC powders, including isostatic pressing and sintering into products.

1985–1995: Research on diffusion along grain boundaries; demonstrated orientationdependent interstitial vs. vacancy diffusion mechanisms.

1995–2005: Proposed the mechanism of nanostructure formation under severe plastic deformation (e.g., in railway rails).

2005–2010: National Foresight Project coordinator; contributed to EU nanotechnology roadmaps.

2005–2025: Nanoparticles for medicine and optical applications via combined microwave and high-pressure synthesis:

Publications and Citations

Google Scholar profile: https://scholar.google.com/citations?user=y2AvD1IAAAAJ&hl=pl

Publications in indexed journals: 400+; Citations: 9 678 (4 427 in the last 5 years)

h-index: 52 (36 in the last 5 years)

Patents

4 international patents, 6 national patents

Selected Monographs

- W. Łojkowski, H.-J. Fecht: The Structure of Intercrystalline Interfaces, Progress in Materials Science, 45, 339 (2000)
- W. Łojkowski: High Pressure Effects in Chemistry, Biology and Materials Science. Defect and Diffusion Forum, Vols. 208–209, 2002
- W. Łojkowski, J.R. Blizzard: Functional Nanomaterials for Optoelectronics and other Applications. Solid State Phenomena, Vol. 99–100, 2004
- R.R. Piticescu, W. Łojkowski, J.R. Blizzard: From Nanopowders to Functional Materials. Solid State Phenomena 106, 2005
- W. Łojkowski, J.R. Blizzard: High Pressure Technology of Nanomaterials. Solid State Phenomena 114, 2006
- W. Łojkowski, J.R. Blizzard, U. Narkiewicz, J.D. Fidelus: Doped Nanopowders, Synthesis, Characterisation, Applications. Solid State Phenomena 128, 2007
- W. Łojkowski, B. Gambin, A. Świderska-Środa: Scenarios of development of advanced metallic, ceramic and composite materials, Vol 1 and 2. ISBN 978-83-7204-886-8 (2008)
- Świderska-Środa, K.J. Kurzydłowski, M. Lewandowska, W. Łojkowski: The World of Nanoparticles, PWN, Warsaw 2016. ISBN: 9788301187705

Selected Coordinated Research Projects

2000-2003: European Centre of Excellence "High Pressure"

2003-2006: European Centre of Excellence "Prenabio"

2005–2009: COST projects: "High Pressure Tuning of High Pressure Reactions" and "Chemistry in High Energy Microenvironments"

2006–2008: Foresight project: "Development scenarios for advanced metallic, ceramic and composite materials"

2008–2011: DONANO project: "Doped nanopowders for innovative industry"

2010–2013: Eranet - Matera: OXYNANOSEN, Optical sensor of oxygen partial pressure in gases

2011–2014: Eranet – Matera SONOSCA Sonochemical technologies for bone regeneration scaffolds

2013–2016: Eranet – Matera GoIMPLANT: Fracture-resistant, robust, resorbable orthopedic implant

2016–2019: Coordinator of the Polish team in FP5–FP7 EU consortia:

- NANOFORUM: Nanotechnology and barriers to its development
- NanoRoad SME and PhotoRoad SME: Road Maps for Nanotechnology
- NANOFATE: Fate of nanoparticles in the environment
- SHYMAN: Synthesis of nanoparticles for industrial applications
- Coordinator of IWC PAN's tasks in the CePT I and CePT II infrastructure projects (budget: over 18 million PLN)

Professional Memberships

- Polish Association for Materials Research (Vice-President, 2002–2020)
- Polish Society for Metallurgy
- Societas Humboldtiana Polonorum
- Deutsche Alpenverein, Ulm Section (SSV 1846)

Selected Training

2003: Time management – personal effectiveness

2003: Project management - process and communication approach

2004: Team management – aspects of group processes

2008: GTD: Get Things Done – personal productivity system

2009: Developing cooperation and leading a team

2009: Effective managerial communication – building authority

2010: Completion of six project management courses

2016–2022: Certificates of knowledge of management standards ISO 170025 and ISO 13485

Honours and Awards

- 2007: Gold Medal of Merit from the President of Poland for outstanding scientific achievements
- 2007: Diploma 'Ambassador of Polish Congresses' awarded by the Polish Tourism Organization

Languages

English – good

German – moderate

Italian, French, Russian – basic

Additional Interests

- Projects management
- Technology foresight
- Geopolitics

The 10 most quoted papers:

The mechanism of formation of nanostructure and dissolution of cementite in a pearlitic steel during high pressure torsion Y Ivanisenko, W Lojkowski, RZ Valiev, HJ Fecht Acta Materialia 51 (18), 5555-5570	609	2003
Nanostructure formation on the surface of railway tracks W Lojkowski, M Djahanbakhsh, G Bürkle, S Gierlotka, W Zielinski, Materials Science and Engineering: A 303 (1-2), 197-208	339	2001
A review of microwave synthesis of zinc oxide nanomaterials: Reactants, process parameters and morphologies J Wojnarowicz, T Chudoba, W Lojkowski Nanomaterials 10 (6), 1086	335	2020
Tensile strength and ductility of ultra-fine-grained nickel processed by severe plastic deformation N Krasilnikov, W Lojkowski, Z Pakiela, R Valiev Materials Science and Engineering: A 397 (1-2), 330-337	274	2005
Quantitative methods for nanopowders characterization T Wejrzanowski, R Pielaszek, A Opalińska, H Matysiak, W Łojkowski, Applied Surface Science 253 (1), 204-208	228	2006
Current trends in the development of microwave reactors for the synthesis of nanomaterials in laboratories and industries: a review S Dąbrowska, T Chudoba, J Wojnarowicz, W Łojkowski Crystals 8 (10), 379	188	2018
Zinc oxide nanoparticles toxicity to Daphnia magna: size-dependent effects and dissolution S Lopes, F Ribeiro, J Wojnarowicz, W Łojkowski, K Jurkschat, A Crossley, Environmental toxicology and chemistry 33 (1), 190-198	187	2014
Graphene oxide-based nanocomposites decorated with silver nanoparticles as an antibacterial agent S Jaworski, M Wierzbicki, E Sawosz, A Jung, G Gielerak, J Biernat, Nanoscale research letters 13, 1-17	180	2018
Intrinsic defect related luminescence in ZrO2 K Smits, L Grigorjeva, D Millers, A Sarakovskis, J Grabis, W Lojkowski Journal of Luminescence 131 (10), 2058-2062	149	2011
Europium doped zirconia luminescence K Smits, L Grigorjeva, D Millers, A Sarakovskis, A Opalinska, JD Fidelus, Optical Materials 32 (8), 827-831	142	2010