



Pawel Olszewski, Ph.D. Eng.

Curriculum Vitae

1 Professional Profile

I have two passions in my professional life: solving engineering problems and teaching college students. These passions define my professional goals: (i) support the industrial sector with innovative ideas, related to energy conversion and conservation, and (ii) serve and teach students with already gained experience:

- Outstanding understanding of various industrial energy and manufacturing processes
- Solid analytical and numerical modelling skills applied in the solving of non-standard problems including genetic optimization
- Strong experimental background including specialty system design and construction.
- Outstanding interpersonal, organizational, team managing and teaching skills.

2 Education

- Postdoctoral study, Mechanical Engineering, University of Michigan (USA), 2011-2014.
- Ph.D., Mechanical Engineering, Warsaw University of Technology (Poland), 2006.
- M.Sc., Mechanical Engineering, Warsaw University of Technology (Poland), 2001.

3 Work History

3.1 University Of Wisconsin Oshkosh, USA

3.1.1 Associate Professor

Sep 2020 - present

- Research in optimization of industrial energy systems and flameless combustion
- Establishing, design, construction and managing of the UW Oshkosh Teaching and Energy Research Industrial Lab (TERIL), transcending traditional boundaries between mechanical and electrical engineering,
- Elaboration of new BS degree Industrial Automation Engineering
- Teaching lower- and upper-level courses in Mechanical Engineering Technology: Thermodynamics, Heat Transfer, Measurements Control and Data Acquisition, Motors and Drives, Mechanics of Materials, Design Problems, Finite Elements Analysis, Statics, Basic Manufacturing Processes, Machine Components, Fundamentals of Drawings, Fundamentals of Engineering Technology, General Physics I and II.
- Mentoring engineering students with their Independent Study projects
- Establishing and mentoring of the UW Oshkosh Engineering Club





3.1.2 Assistant Professor

Aug 2014 – Aug 2020

- Development in the start-up phase of the new Department of Engineering Technology, with the Mechanical Engineering Technology program as the largest major
- Teaching lower- and upper-level courses in Mechanical Engineering Technology
- Participation in work targeted ABET Accreditation

3.2 University Of Michigan, Ann Arbor, USA

Jan 08 – Jul 09, Sep 11 – Aug 14

3.2.1 Postdoctoral Researcher

- Technical Director in two projects (US DoE IAC and State Michigan) offering energy audits (ISO 50001) – over 80 conducted energy audits, proposed energy savings recommendations exceeded \$17,000,000,
- Research in areas: energy industrial furnaces and biomass thermal decomposition

3.2.2 Dekaban Fellow, Lecturer

- Small and medium size factory energy auditing – U.S. DoE IAC
- Research in biomass to biofuel conversion (modelling and experimental research).
- Teaching – ME 350 Thermodynamics II – lectures highly rated by participated students.

3.3 Warsaw University of Technology WUT, Poland

Oct 06 – Dec 07, Nov 09 – Aug 11

3.3.1 Adjunct Professor

- Preliminary work and organization of energy audits in Poland – Save Energy project.
- Simulation of underground solar energy storage systems – published papers.
- Teaching: Thermodynamics, Heat Transfer, Environment Protection, Renewable. Energy.

3.3.2 Expert, Poland-Japan Energy Conservation Technology Center P-J ECTC

- Advising and auditing of industrial energy systems in cooperation with Japanese experts.
- Partnership coordination between P-J ECTC and Warsaw University of Technology.
- Theoretical and practical professional trainings in energy efficiency for managers from industrial sector.

3.4 Polish Oil and Gas Company, Poland

Apr 99 – Sep 06, Jul 09 – Jul 11

3.4.1 Head of Technical Consulting Section, Central Measurement and Testing Laboratory

- Participation and managing in R&D projects in natural gas industry
- Member participation in work of the European Union Committee for Standardization, work effect: published standard: "EN 16314 Gas meters. Additional functionalities".
- Supervision of natural gas measurement systems.
- Successfully accomplished professional courses entitled "Measurements and uncertainty estimation in natural gas industry".





3.4.2 Head of Geometrical Section, Central Measurement and Testing Laboratory:

- Responsibility for the accreditation of the national lab's measurement standards.
- Participation in testing of new natural gas flow meters.

3.4.3 Specialist in Measurements Bureau, Headquarter

- Preparation, processing and data reporting to the Corporation's Executive Board.

4 Academic achievements

4.1 External accomplishments

- Jul, 2018 – WiSys Innovation Grant (~\$30,000), after positive WARF recommendations
- Jun, 2018 – Provisional Patent Application for flameless impingement oven
- May, 2018 – Research presentation for the WARF (UW Madison) Accelerator Program
- 2017 – WiSys (UW System) Innovation Grant (\$3,000).

4.2 UW Oshkosh Faculty Development Program award:

- 2019 – “Energy optimization of industrial chiller powered by a variable speed drive”
- 2018 – “Synergistic effects of gas impingement and flameless combustion”
- 2017 – “Self-learning Abilities in Multi-pump Systems”
- 2016 – “Influence of geometrical parameters on flameless combustion in industrial proc.”
- 2015 – “Optimization of a Complex Parallel Pump System”

4.3 US DoE Advanced Manufacturing Office Awards for Excellence in Applied Energy Engineering Research (\$25,000 each)

- 2013 – project “Radiation enhancement in melting and heat treating furnaces to increase productivity and reduce pollutants – an inexpensive method with significant benefits”
- 2012 –project “Possibility of Combustion Furnace Operation with O₂-Enriched Gas from N₂ Generator”

4.4 Others

- 2006 – PhD thesis with the distinction Cum Laude

5 Additional Education

- Jan 2007: Energy Conservation Center, Tokyo: Energy Conservation Policy in Industry.
- Jul, 2006 – Jul, 2007: P-J ECTC. Courses related to energy conservation in industry.
- Jan 2006: Warsaw University of Technology, Poland. Measurement Uncertainty.
- Jul 2006: Polish Center for Accreditation, Warsaw. Laboratory Internal Auditing.
- Nov 2004: Polish Center for Testing and Certification. TQM and Accreditation.





6 List of Publications:

6.1 Peer-reviewed publications

1. Olszewski P. Experimental analysis of ON/OFF and variable speed drive controlled industrial chiller towards energy efficient operation, Applied Energy 309 (2022), DOI: [10.1016/j.apenergy.2021.118440](https://doi.org/10.1016/j.apenergy.2021.118440)
2. Olszewski P., Arafeh J., Parametric analysis of pumping station with parallel-configured centrifugal pumps towards self-learning applications, Applied Energy 231 (2018), DOI: [10.1016/j.apenergy.2018.09.173](https://doi.org/10.1016/j.apenergy.2018.09.173)
3. Atreya A., **Olszewski P.**, Chen Y., Baum H. R., The effect of size, shape and pyrolysis conditions on the thermal decomposition of wood particles and firebrands, International Journal of Heat and Mass Transfer (2017), DOI: [10.1016/j.ijheatmasstransfer.2016.11.051](https://doi.org/10.1016/j.ijheatmasstransfer.2016.11.051)
4. Olszewski P., Genetic Optimization and Experimental Verification of Complex Parallel Pumping Station with Centrifugal Pumps, Applied Energy (2016), DOI: [10.1016/j.apenergy.2016.06.084](https://doi.org/10.1016/j.apenergy.2016.06.084)
5. Kluczek A., Olszewski P., Energy audits in industrial processes, Journal of Cleaner Production (2016), DOI: [10.1016/j.jclepro.2016.10.123](https://doi.org/10.1016/j.jclepro.2016.10.123)
6. Olszewski P., Borgnakke C., Volumetric capacity influence on energy consumption in oil lubricated screw compressors, Journal of Thermal Science and Engineering Applications (2016), Vol. 8, DOI: [10.1115/1.4034091](https://doi.org/10.1115/1.4034091)
7. Olszewski P., Heat Recovery Investigation from Dryer-Thermal Oxidizer System in Corn-Ethanol Plants, Applied Thermal Engineering (2015) DOI: [10.1016/j.applthermaleng.2015.02.033](https://doi.org/10.1016/j.applthermaleng.2015.02.033)
8. Olszewski P., Genetic optimization of steam multi-turbines system, Applied Thermal Engineering (2014) DOI: [10.1016/j.applthermaleng.2014.06.007](https://doi.org/10.1016/j.applthermaleng.2014.06.007)
9. Kluczek A., Olszewski P., Multidirectional Aspects of Energy Auditing in the Industrial Sector in the United States, District Heating, Heating, Ventilation (Ciepłownictwo, Ogrzewnictwo, Wentylacja), 11/2014, pp. 420 – 428
10. Olszewski P., Sustainable management of compressed air systems, Mega-Industry, 4/2007, pp. 50 – 53
11. Olszewski P., Sustainable management of rotational pumps, Refrigeration & Air Conditioning (Chłodnictwo&Klimatyzacja), 09/2007, pp. 99 – 104
12. Olszewski P., Ideal energy... about genetic algorithms and how to use solar energy during wintertime, District Heating, Heating, Ventilation (Ciepłownictwo, Ogrzewnictwo, Wentylacja), 07-08/2007, pp. 25 – 32
13. Olszewski P., Save energy, Modern Industry (Nowy Przemysł), Special Report 2007
14. Olszewski P., Costs of energy utilizing in detached buildings, part II, District Heating, Heating, Ventilation (Ciepłownictwo, Ogrzewnictwo, Wentylacja), 10/2002, pp. 15 – 21
15. Olszewski P., Costs of energy utilizing in detached buildings, part I, District Heating, Heating, Ventilation (Ciepłownictwo, Ogrzewnictwo, Wentylacja), 9/2002, pp. 17 – 24
16. Olszewski P.: Technical solutions for heat demand in detached buildings, District Heating, Heating, Ventilation (Ciepłownictwo, Ogrzewnictwo, Wentylacja), 5/2002

6.2 Patents

1. Olszewski P., Flameless Impingement Oven, PCT/US019/045127, 8/5/2019





6.3 Conferences

1. Chen Y., Daya R., Cao W., Olszewski P., Atreya A., Effect of torrefaction on fast pyrolysis of centimeter-scale birch wood particles, 9th U.S. National Combustion Meeting, Cincinnati 2015
2. Cao W., Chen Y., Olszewski P., Aanjaneya K., Ponnappalli C.S., Atreya A., Radiation enhancement to increase efficiency and reduce pollutants, 9th U.S. National Combustion Meeting, Cincinnati 2015
3. Ming X., Borgnakke D., Campos M., Olszewski P., Borgnakke C., Atreya A., Possibility of Combustion Furnace Operation with Oxygen-Enriched Gas from Nitrogen Generator, Proceedings of 2013 ACEEE Summer Study on Energy Efficiency in Industry
4. Olszewski P., Optimisation of working ground heat storage with seasonal regeneration, Proceedings of ASME International Mechanical Engineering Congress and Exposition 2006, Chicago, Illinois, USA.
5. Olszewski P., The possibility of using the ground as seasonal heat storage - the numerical study, Proceedings of 2004 ASME Heat Transfer/Fluids Engineering Summer Conference 2004, Charlotte, North Carolina, USA
6. Olszewski P., Numerical modeling of temperature field in the ground storage system with vertical borehole, 9th International Conference on Thermal Energy Storage FUTURESTOCK 2003, Warsaw, POLAND September 1-4, 2003, Proceedings of FUTURESTOCK 2003, Volume I: 405 – 410

6.4 Posters

1. Atreya A., Wu O., Violi A., Davis A., Chen Y., Olszewski P., An Autonomous Biomass Reactor to Create Carbon Natural Transportation Fuels and Prevent Forest Fires, MCubed Symposium 2013, University of Michigan, Ann Arbor, Nov 15, 2013
2. Leszczyńska – Domańska M., Domański R., Olszewski P., Analysis of long-term high temperature underground waste heat storage, VIII Conference "Research Problems of Heat Engineering", Warsaw, Poland, Dec 11-14, 2007
3. Leszczyńska – Domańska, M., Domański R., Olszewski P., Using of Solar radiation for Bridge deck Deicing in Polish climate – underground energy storage, XIII Symposium of heat and mass transfer, Darłówko – Koszalin, Poland, Sep 3 – 6, 2007

7 Other Skills

Computer Proficiency: Windows, MS Office (all components), DELPHI, C++, CorelDraw, AutoCAD, HTML, ArcView, Surfer, LabVIEW, FLUENT and others.

8 Interests

Automotive, traveling, mountain hiking, camping, swimming, skiing, programming, DIY

