

Dorota Chwieduk Prof. DSc. PhD. Mech. Eng. MSc.

Power and Aeronautical Engineering Faculty

Warsaw University of Technology

Prof. Dorota Chwieduk is in two world ranking lists of The World's Top 2% most cited scientists in the world, 1) in last decades (since 1960) and 2) in the last year 2021.

Deputy Director of the Institute of Heat Engineering, Warsaw University of Technology 2012 - 2020.

Head of the Postgraduate studies on Energy Efficient Buildings, Energy Characteristics of Buildings, energy Auditing and Thermal Refurbishment of Buildings, since 2009.

President of the Polish Solar Energy Society and of the Polish Section of International Solar Energy, since 1993;

President of the International Solar Energy Society – Europe, 2009 – 2011 and Past President 2011 - 2013; Member of the Board of the International Solar Energy Society – Europe, 2003 -2013;

Vice President of the International Solar Energy Society – Europe, 2007 – 2009.

Member of the World Renewable Energy Network -WREN since 1996;

Member of the Advisory Board of the World Renewable Energy Network, since 2016.

Member of the Polish National Standard Committee, Section of Mechanics, 2001 – 2008.

Editor in Chief of the Polish Solar Energy Journal, since 1993.

Member of the Board of the Polish Renewable Energy Chamber – PRK OZE, since 2010.

Nominated Fellow Member of the Energy Problems Committee, Polish Academy of Sciences, since 2010 - the only woman.

Nominated Fellow Member of the Thermodynamics and Combustion Committee of the Polish Academy since 1993.

Nominated Fellow Member of the Physics of Building Construction Section of Civil and Water Treatment Engineering Committee Polish Academy of Sciences, since 1996.

Member of the International Management and Steering Committee of the EU Smart Cities EERA JP, since 2012.

Awards for scientific achievements

- Awarded by the Ministry of Buildings in 2006 for a chapter Low energy buildings. Renewable energy (in Polish) pp. 1065 – 1151 in: Vol. II Physics of Buildings, publisher Arkady, Klemm P. (Ed.), ARKADY, 2006
- Awarded by the annual title of the year 2006 as „Promoter of Renewable Energy” by the “Clean Energy” magazine
- Awarded in 2008 by the World Renewable Energy Network – WREN as Pioneer of Renewable Energy.
- Awarded in 2009 by The Ministry of Infrastructure for the Best DSc Dissertation (habilitation) in Poland, given in 2009.
- Awarded in 2010 by the Division of Production Engineering of the Warsaw University of Live Science for achievements and support for the Division.
- Awarded the Gold Medal in 2013 given by the President of the Republic of Poland for Long Service for the Country.
- Awarded in 2012, 2015, 2018, 2020, 2022 by the Rector of the Warsaw University of Technology for the Best Scientific Achievements.
- Awarded in 2015 – Bronze Medal for the 100 years of Polish tradition of the Warsaw University of Technology - awarded by the Senate of the Warsaw University of Technology, 2015.
- Awarded 3 place in the International Competition EDP *Renewables University Challenge* in Poland, as a supervisor of the MSc student, 2016
- Awarded the Medal of KEN – Commission of Natural Education given by the Ministry of Education, 2016.
- Awarded the Gold Cross of Merit in 2018 given by the President of the Republic of Poland.
- Awarded the Life Pioneer Award in recognition of outstanding achievements as WREN pioneers in their work promoting Renewable Energy globally in 2021 given by the WREN

RTD on Energy, Buildings and environment

Key research:

- renewable energies with focus on solar energy systems (solar active and passive), solar architecture and heat pumps;
- energy efficiency and rational use of energy in buildings, retrofitting, eco-buildings;
- modern options of energy conservation including polygeneration;
- modern ecological and energy saving technologies;

- modern issues in energy storage, with focus on PCM applications and underground thermal energy storage.

Details:

- Unconventional methods of energy conversion and storage
- Solar energy, active and passive solar energy use, solar technologies
- Heat transfer in buildings
- Energy interactive building envelope, hybrid systems
- Renewable energy systems in buildings
- Solar Energy in Buildings
- Energy performance of buildings
- Thermal modernization of buildings and energy audits
- Smart cities
- Heat pumps, monovalent and bivalent energy systems, integrated multi-sources energy systems
- Poligeneration – trigeneration, combined heating, cooling and electric energy production
- Photovoltaics PV, integrated systems, hybrid systems –PVT – PhotoVoltaic/ Thermal
- Short and long term thermal energy storage
- Underground thermal energy storage
- Thermal energy storage through phase change process, application of PCM (Phase Change Materials)
- Energy efficiency of systems and devices
- Life Cycle Assessment – LCA, embodied energy