

**Summary Specification of Scientific Accomplishments of a Thesis Supervisor Candidate**

maximum 2 pages - it should be a synthesis of the most important elements of accomplishments

Name and surname, degree, scientific title: Krzysztof Tomczuk, Assistant Professor	
Scientific discipline/s	Mechanical Engineering
Professional development (scientific degrees and titles) chronologically	04.2020 – Assistant Professor 07.2008 – Doctor of Philosophy (PhD) 08.2001 – Master of Science (MSc)
Most important publications/patents from the last 3 years (max. 10)	<ol style="list-style-type: none"> <li>1. K. Tomczuk, P. Tomczuk, M. Chrzanowicz, "Exploring the Feasibility of Autonomous Lighting Systems for Pedestrian Crossings in Off-Grid Areas.", <i>MDPI - Applied Sciences</i>, 2024, 14, 3054. <a href="https://doi.org/10.3390/app14073054">https://doi.org/10.3390/app14073054</a></li> <li>2. P. Obstawski, K. Tomczuk, "High-Temperature Two-Stage Subcritical Heat Pump Running on Environmentally Friendly Refrigerants.", <i>Advances in Science and Technology Research Journal</i>, vol. 18, 3, 2024. <a href="https://doi.org/10.12913/22998624/187103">https://doi.org/10.12913/22998624/187103</a></li> <li>3. K. Tomczuk, P. Obstawski, "Analysis of Cooperation of Compressor Heat Pump with PV System", <i>MDPI – Sustainability</i>, 2024, 16(9), 3797; <a href="https://doi.org/10.3390/su16093797">https://doi.org/10.3390/su16093797</a></li> </ol>
Experience in work with PhD students (defended dissertations, initiated dissertation procedures), chronologically	Review of Mr. Marcin Leśko doctoral thesis entitled: "Lighting fixture with a variable light shape", Rzeszów University of Technology, Public defense of the thesis, Rzeszów 09/02/2022.
Project/grant accomplishments (from the last 10 years)	<ul style="list-style-type: none"> <li>- Project manager "Energy storage - Flux system" 2021-2022. Financing institution NCBiR.</li> <li>- Task manager in the project "ELMAR - Supporting South Baltic SMEs is an entry into online supply chains and markets for the sale of electric boats and ships". 2021-2022. Institution financing the Interreg South Baltic programme.</li> <li>- Contractor in the "Eco-mobility" project. 2010-2013. Project under the European Regional Development Fund. Operational Program Innovative Economy.</li> <li>- Contractor in the project "e-VAN FCEV - a universal delivery vehicle with an electric drive, category N1 with a hydrogen fuel cell and a modular multifunctional cargo space development".</li> </ul>

	<p>2017-2021. Financing institution NCBiR.</p> <ul style="list-style-type: none"> <li>- Contractor within the project "Mobile power supply system from port quays to supply ecology and economy of sea transport". 2013-2016. Financing institution: NCBiR and NFOŚiGW. Gekon II program.</li> <li>- Contractor in the project "Superconducting energy storage with power electronic interface for use in distribution networks". 2015-2018. Financing institution: NCBiR and NFOŚiGW. PBS III programme.</li> <li>- Key evaluation expert. Project entitled: "Innovation Accelerator", task: "HID ballasts". 02/2013 - 10/2013. Financing institution European Social Fund. Human Capital Program.</li> </ul>
<p>Theme scope - research problem - for the solving of which the PhD student is sought</p>	<ol style="list-style-type: none"> <li>1. Development of a hydrogen fuel cell structure for electrical energy storage applications.</li> <li>2. Development of the mechanical structure of a flow cell for electrical energy storage applications.</li> </ol>
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