Grants to fund ground-breaking research under the Excellence Initiative - Research University* programme

in accordance with Ordinance No 32/2020 of 4 March 2020.

In 2021, a total of 55 applications were assessed by the Commission for Awards and Pro-Quality Programmes for the award of breakthrough research grants under the Excellence Initiative - Research University programme.

All applications obtained at least 50% of the maximum number of points specified in § 3 item 2 of the Rector's Ordinance No. 32/2020 of the Rector of the Silesian University of Technology of 4 March 2020 *on the pro-quality competition for funding of breakthrough research under the Excellence Initiative - Research University programme*. The Rector awarded 24 grants for funding breakthrough research.

Ranking list:

No.	Academic title/degree, First name and surname	Research topic	% of points available
1.	mgr inż. Mateusz Dawid Tomczyk (doktorant) / RCH	Use of sulphonylurea derivatives as HK2 inhibitors in anti-cancer therapies	92,63%**
2.	dr hab. inż. Grzegorz Chladek, prof. PŚ (RMT) dr hab. inż. Izabela Barszczewska-Rybarek (RCH) / zespół	Development and testing of antimicrobial hybrid composite nanomaterials enriched with particles of quaternary ammonium derivative of polyethyleneimine	85,26%
3.	dr inż. Paweł Kowol (RE) dr inż. Paweł Nowak (RAU)	Development of a mechatronic traction control model for an organ instrument mapping the dynamics of mechanical traction	85,26%
4.	dr hab. inż. Katarzyna Krukiewicz, prof. PŚ / RCH	Electrodeposited medical textiles and surgical sutures with anti-cancer properties	84,74%
5.	dr hab. inż. Grzegorz Matula / RMT	Application of automation of low-pressure forming of austenitic steel powders and sintering to produce corrosion-resistant surface layers	84,74%

No.	Academic title/degree, First name and surname	Research topic	% of points available
6.	dr hab. inż. Marcin Sajdak / RIE	Disposal and recovery of raw materials from used wind turbine blades by chemical means	84,74%
7.	mgr inż. Filip Gamoń (doktorant) / RIE	Evaluation of the removal of antibiotic resistance genes from wastewater by sunlight-induced photocatalysis	84,53%**
8.	dr hab. inż. Marcin Kozłowski, prof. PŚ / RB	Experimental and numerical investigation of soft and hard body impact resistance of innovative multi-surface bent glass panes	84,21%
9.	dr inż. Marta Kałuża / RB	Investigations into the possibility of using non-structural materials to reinforce walls made from cellular concrete blocks	83,68%
10.	dr hab. inż. Arkadiusz Gertych, prof. wizytujący PŚ (RIB) dr hab. inż. Karolina Nurzyńska, prof. PŚ (RAU) dr inż. lek. Bartłomiej Pyciński (RIB) / zespół	Identification of the presence of gene mutations in non-small cell lung cancer using computational pathomorphology	83,16%
11.	dr hab. Marek Sikora, prof. PŚ / RAU	Development of interpretable data mining methods using deep learning - discrete deep learning	83,16%
12.	dr hab. inż. Marcin Adamiak, prof. PŚ / RMT	Hybrid surface modification in laser micromachining and coating of advanced functional materials	83,16%

No.	Academic title/degree, First name and surname	Research topic	% of points available
13.	dr hab. inż. Ewa Łobos-Moysa, prof. PŚ (kierownik zespołu) dr inż. Edyta Kudlek dr hab. inż. Ewa Felis, prof. PŚ / RIE (zespół)	Transformation of organic cosmetic ingredients in brackish water	83,16%
14.	dr hab. inż. Joanna Michalska / RCH	Development of activation methodology and characterization of structural and electrochemical properties of MXenes phases on the example of Ti3C2Tx	82,63%
15.	dr hab. inż. Wojciech Domagała, prof. PŚ / RCH	Structured π-conjugated bond continuity breaks as a new way to control the properties of micro- and macroscale conducting polymers	82,63%
16.	dr inż. Agata Blacha-Grzechnik / RCH	Quantum dots in the photogeneration of singlet oxygen	82,11%
17.	dr hab. inż. Andrzej Katunin, prof. PŚ / RMT	Modelling and quantification of damage in aerospace structures using the enhanced D-Sight non-destructive testing technique	82,11%
18.	dr inż. Gabriela Kamińska dr inż. Justyna Majewska / RIE (zespół)	Nanocomposites based on clay minerals, sewage sludge and graphene as adsorbents of organic and inorganic pollutants from water	82,11%
19.	mgr inż. Maciej Mrówka (doktorant) / RJO11-CB	Water-soluble flavonoid derivatives with anticancer activity	81,63%**

No.	Academic title/degree, First name and surname	Research topic	% of points available
20.	mgr inż. Magdalena Zięba (doktorantka) / Szkoła Doktorów	Transparent Ti02 electrodes produced by sol-gel and dip-coating techniques	81,63%**
21.	dr inż. Michał Staniszewski / RAU	Using crowd simulation data to validate and train deep learning methods for multi-object detection and tracking in video images	81,58%
22.	dr inż. Marek Kremzer / RMT	Application of incremental technologies to produce ceramic frameworks for pressure infiltration	80,53%
23.	dr inż. Aleksandra Drygała dr hab. inż. Tomasz Tański, prof. PŚ dr inż. Paweł Jarka dr inż. Wiktor Matysiak / RMT (zespół)	Research on innovative architecture of photovoltaic-mechanical system based on hybrid combination of composite semiconductor nanofibres and perovskite	80,53%
24.	dr hab. inż. Gabriela M. Dudek, prof. PŚ / RCH	Preparation and study of physicochemical and separation properties of modified poly(vinyl alcohol) membranes containing molecular magnets as innovative magnetic fillers for pervaporation dehydration of ethanol and isopropanol	80,00%

* Listed in order of grant award

** the assessment takes into account the increase in points referred to in § 3 (1) of Ordinance No. 32/2020.