



**D.Sc. Piotr Borysiuk, associate professor**

**CONTACT**

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**EDUCATION**

Occupational titles and science degrees	Date (year)	Institution
<b>Master engineer</b> of Wood technology	1996	Faculty of Wood Technology Warsaw University of Life Sciences - SGGW
<b>Doctor</b> of forest sciences in field of wood technology	2000	
<b>Doctor (habilitation)</b> of forest sciences in field of wood technology	2012	

**PROFESIONAL COMPETENCE – over 20 Years**

Position	Date (year)	Institution
Tutor (with doctorate)	2001	Department of Technology and Entrepreneurship in Wood Industry
Assistant professor	2002	
Assistant professor (with habilitation)	2012	Faculty of Wood Technology
Associate professor	2016	Warsaw University of Life Sciences - SGGW

Also:

- in years 2000 – 2001 main technologist in furniture companies ARICA and S&J
- in years 2007 – 2017 Scientific and research specialist at the Research & Development Centre for Wood-Based Panels in Czarna Woda
- in years 2012 – 2019 vice-dean for didactics in the field of wood technology at Faculty of Wood Technology WULS-SGGW
- in years 2009 – 2019 head of Division of Wood-Based Materials Engineering (formerly Division of Wood-Based Panels)
- since October 2019 **Vice-Dean of Faculty of Wood Technology WULS-SGGW**

**SELECTED CURRENT FUNCTIONS**

- member of Discipline council of Forest sciences
- deputy-chairman of Program council of Faculty of Wood Technology WULS-SGGW
- member of Senate Commission on Didactics and Education WULS-SGGW
- member of Senate Commission for the Development of Scientific and Teaching Staff WULS-SGGW
- member of Committee of Forestry and Wood Technology of Polish Academy of Sciences
- member of Association of Foresters and Wood Technologists
- ordinary member of Wood Based Panels Producers Association of Poland
- member of Technical Committee no 100 on Wood Products and Wood Materials of Polish Standardization Committee

## DIDACTIC

- the lectures: Basis of wood based panels technology, Technology of wood based panels, Speciality purpose wood based panels, Designing of technological processes for wood based composites, Finishing technology of wood based composites, Wood-based panels in elements of interior design;
- co-author of handbooks, course books, monographs, e.g.:
  - Ćwiczenia laboratoryjne i projektowe z technologii tworzyw drzewnych (2002)
  - Tworzywa drzewne specjalnego przeznaczenia (2004)
  - Ćwiczenia z technologii tworzyw drzewnych (2009)
  - Przewodnik do ćwiczeń z podstaw technologii tworzyw drzewnych (2013)
  - Słownik terminów drzewnych niemiecko-polski (2014)
  - Drzewne materiały konstrukcyjne (2019)
- conducting lectures on broadly understood wood-based panels, among others, as part of trainings organized by the Research & Development Centre for Wood-Based Panels in Czarna Woda.

## SCIENCE

### Science research:

- wood and non-wood as raw materials for wood-based panels
- analysis and modification of technology of wood-based panels
- low density boards
- new types of wood-based composites
- biopolymers, wood plastic composites.

### Research projects:

- Opti\_wood „Improving the process and material efficiency in the sawmill industry” – research project in the Biostrateg3 program financed by National Centre of Research and Development, BIOSTRATEG3/344303/14/NCBR/2018 (2018 - 2022) – project contractor (coordinator from the Warsaw University of Life Sciences SGGW).
- EFFRaWood „Increasing the efficiency of the use of raw wood material in the industrial production processes” – research project in the Biostrateg2 program financed by National Centre of Research and Development, BIOSTRATEG2/298950/1/NCBR/2016 (2016 - 2018) – project contractor.
- „Production of innovative furniture based on modern particleboard” – research and implementation project under the WoodINN sector program, financed by National Centre of Research and Development (2017 - 2018) – contractor of the part realized by WULS.
- „Innovative technology for the production of furniture elements supported by the digital printing process” – research and implementation project under the WoodINN sector program, financed by National Centre of Research and Development (2017 - 2018) – contractor of the part realized by WULS.
- COST Action FP 1302 Wood Music (2014 - 2017)
- „Research on the use of oligo- and polyglycerols for the production of wood adhesives” – project financed by the MNiSW, no N N 209 0329 38 (2010 - 2012) – project contractor.
- „Examination of formaldehyde emission levels at individual stages of industrial particleboard production” – project financed by the MNiSW, no N N 309 2964 39 (2010 - 2012) – project contractor.
- “Improvement of strength properties and reduction of emission of volatile organic compounds by enzymatic modification of lignin containing biopolymers and composites” – ERA-NET IB project – Scheme of 6 EU Freimwork Programme (2009 - 2011) – project contractor.
- „Performance properties of thermoplastic bonded particleboards” – internal project financed by the WULS, no 504-10-06270011 (2010) – project coordinator.
- „Research on the use of thermoplastics for joining wood particles in the production of particleboard and plywood” – project financed by the MNiSW, no N 309 2869 33 (2007 - 2009) – project coordinator.
- „Research on the use of waste paper in the production of wood-based panels” – project financed by the MNiI, no 3TO8E 068 27 (2005 - 2007) – project contractor.

### Cooperation:

- seats of learning e.g. Poznan University of Life Sciences, Wood Technology Institute, Kazimierz Wielki University in Bydgoszcz, Technical University in Zvolen;

- others e.g. Research & Development Centre for Wood-Based Panels in Czarna Woda.

## RESEARCH OFFER AND EXPERT ASSESSMENTS

- **complaints and expertise** regarding the quality of wood products and wood-based materials and the correctness of assembly services (floors, furniture, woodwork, etc.);
- **opinions on innovation** in the field of products and technologies used in wood technology;
- **assessment and comparative analysis** of the properties of wood and wood-based materials;
- **testing** of physical, mechanical and functional properties of wood-based materials;
- **testing** strength of wood and wood-based materials joints;
- **testing** the properties of coatings on the surface of wood and wood materials.

## SELECTED SCIENCE PUBLICATIONS FROM LAST 6 YEARS:

**ORCID: 0000-0002-7508-9359**

### 2023

**Auriga R., Borysiuk P., Latos M., Auriga A., Kwaśny Ł., Walkiewicz J., 2023:** Impact of Sugar Beet Pulp Share on Selected Physical and Mechanical Properties of Particleboards. *Forests* 2023, 14, 40. <https://doi.org/10.3390/f14010040>

**Grzeźkiewicz M., Krzosek S., Burawska I., Borysiuk P., Mańkowski P., 2023:** Influence of thermo-mechanical densification (TMD) on the properties of structural sawn timber (*Pinus sylvestris* L.). *Forests* 2023, 14, 231. <https://doi.org/10.3390/f14020231>

### 2022

**Borysiuk P., Krajewski K., Auriga A., Auriga R., Betlej I., Rybak K., Nowacka M., Boruszewski P., 2022:** PLA Biocomposites: Evaluation of Resistance to Mold. *Polymers* 2022, 14, 157. <https://doi.org/10.3390/polym14010157>

**Górski J., Podziewski P., Borysiuk P., 2022:** The Machinability of Flat-Pressed, Single-Layer Wood-Plastic Particleboards while Drilling—Experimental Study of the Impact of the Type of Plastic Used. *Forests*, 13, 584. <https://doi.org/10.3390/f13040584>

**Auriga R., Auriga A., Borysiuk P., Wilkowski J., Fornalczyk O., Ochmian I., 2022:** Lignocellulosic Biomass from Grapevines as Raw Material for Particleboard Production. *Polymers* 2022, 14, 2483. <https://doi.org/10.3390/polym14122483>

**Boruszewski P., Borysiuk P., Jankowska A., Pazik J., 2022:** Low-Density Particleboards Modified with Expanded and Unexpanded Fillers - Characteristics and Properties. *Materials* 2022, 15, 4430. <https://doi.org/10.3390/ma15134430>

**Boruszewski P., Borysiuk P., Jankowska A., Pazik J., 2022:** Low-Density Particleboards Modified with Blowing Agents—Characteristic and Properties. *Materials* 2022, 15, 4528. <https://doi.org/10.3390/ma15134528>

**Czarniak P., Borysiuk P., El Bayda H., Perisse F., Menecier S., 2022:** Analysis of technological effects of cold plasma treatment of wood based materials finished with finishing foil and paints. *International Journal of Adhesion and Adhesives* 118 (2022) 103248. <https://doi.org/10.1016/j.ijadhadh.2022.103248>

**Betlej I., Salerno-Kochan R., Borysiuk P., Boruszewski P., Monder S., Krajewski K., Andres B., Krochmal-Marczak B., Pisulewska E., Danecki L., Stanisław Pochwała, 2022:** Quality parameters of PE-pomace based membranes. *Membranes* 12 (2022), 1086. <https://doi.org/10.3390/membranes12111086>

**Borysiuk P., Auriga R., Wilkowski J., Auriga A., Trociński A., Lee S.H., 2022:** A Study on the Susceptibility of PLA Biocomposites to Drilling. *Forests* 2022, 13, 1950. <https://doi.org/10.3390/f13111950>

### 2021

**Borysiuk P., Boruszewski P., Auriga R., Danecki L., Auriga A., Rybak K., Nowacka M., 2021:** Influence of a bark-filler on the properties of PLA biocomposites. *Journal of Materials Science*, <https://doi.org/10.1007/s10853-021-05901-6>

**Auriga R., Borysiuk P., Misiura Z., 2021:** Evaluation of the physical and mechanical properties of particle boards manufactured containing plum pruning waste. *Biuletyn Informacyjny Ośrodka Badawczo-Rozwojowego Przemysłu Płyt Drewnopochodnych w Czarnej Wodzie 1-2/2021*, 5-11, <https://doi.org/10.32086/biuletyn.2021.01>

**Borysiuk P., Auriga R., Jasiński W., 2021:** Influence of water glass on selected properties of particleboard. *Biuletyn Informacyjny Ośrodka Badawczo-Rozwojowego Przemysłu Płyt Drewnopochodnych w Czarnej Wodzie 1-2/2021*, 12-24, <https://doi.org/10.32086/biuletyn.2021.02>

**Kozakiewicz P., Borysiuk P., 2021:** CLT, HBE i co dalej? Nowe tworzywa budowlano-konstrukcyjne na bazie drewna. *5 Forum Holzbau Polska (HBP)*, 21.06.2021r., Jachranka k. Warszawy, Hotel Windsor.

**Borysiuk P., Auriga A., Auriga R., 2021:** Screw holding performance in WPC composites. *Annals of Warsaw University of Life Sciences - SGGW Forestry and Wood Technology*, 113, 43-52, DOI:10.5604/01.3001.0015.2331

- Auriga R., Borysiuk P., Auriga A., Wójcik K., 2021:** An attempt to use „Tetra Pak” waste material in particleboard technology. *Annals of Warsaw University of Life Sciences - SGGW Forestry and Wood Technology*, 114, 70-75, DOI:10.5604/01.3001.0015.2376
- Auriga R., Borysiuk P., Waracka K., Auriga A., 2021:** Susceptibility of drilling particleboard with share of hemp shives. *Biuletyn Informacyjny Ośrodka Badawczo-Rozwojowego Przemysłu Płyt Drewnopochodnych w Czarnej Wodzie 3-4/2021*, 115-121, <https://doi.org/10.32086/biuletyn.2021.04>

## 2020

- Borysiuk P., Wilkowski J., Krajewski K., Auriga R., Skomorucha A., Auriga A., 2020:** Selected properties of flat-pressed wood-polymer composites for high humidity conditions. *BioResources* 15(3), 5156-5178. DOI: 10.15376/biores.15.3.5141-5155
- Grzeskiewicz M., Kozakiewicz P., Borysiuk P., Romanovski V., Cichy A., 2020:** Influence of top layer density and thickness on hardness of two-layer floor elements. *DREWNO WOOD* 63 (205), 69-80. DOI: 10.12841/wood.1644-3985.336.12
- Borysiuk P., Auriga R., Bujak M., 2020:** Możliwości wykorzystania łuski słonecznika jako dodatku surowcowego do wytwarzania płyt wiórowych. *Biuletyn Informacyjny Ośrodka Badawczo-Rozwojowego Przemysłu Płyt Drewnopochodnych w Czarnej Wodzie 1-2/2020*, 32-44, <https://doi.org/10.32086/biuletyn.2020.03>
- Betlej I., Krajewski K., Borysiuk P., 2020:** An assessment of the susceptibility of bacterial cellulose films to fouling by mold fungi. *Annals of Warsaw University of Life Sciences - SGGW Forestry and Wood Technology*, 110, 103-109
- Dyrwal P., Borysiuk P., 2020:** Impact of phenol film grammage on selected mechanical properties of plywood. *Annals of Warsaw University of Life Sciences - SGGW Forestry and Wood Technology*, 111, 5-12
- Dyrwal M., Borysiuk P., 2020:** Selected problems concerning volatile organic compounds emission reduction from thick-veneer pine plywood. *Annals of Warsaw University of Life Sciences - SGGW Forestry and Wood Technology*, 111, 13-20
- Auriga R., Borysiuk P., Baran R., 2020:** Zastosowanie technologii druku 3D oraz modelowania komputerowego w projektowaniu spersonalizowanych wypełnień płyt komórkowych. *Biuletyn Informacyjny Ośrodka Badawczo-Rozwojowego Przemysłu Płyt Drewnopochodnych w Czarnej Wodzie 3-4/2020*, 155-166, <https://doi.org/10.32086/biuletyn.2020.06>

## 2019

- Borysiuk P., Kozakiewicz P., Krzosek S., 2019:** *Drzewne materiały konstrukcyjne*. Wydawnictwo SGGW, Wydanie I, Warszawa. ISBN 978-83-7583-815-2.
- Król P., Borysiuk P., Mamiński M., 2019:** Comparison of Methodologies for Acid Buffering Capacity Determination—Empirical Verification of Models. *Applied Sciences*, 9(11), 2345, DOI: 10.3390/app9112345.
- Auriga R., Borysiuk P., Gumowska A., Smulski P., 2019:** Influence of apple wood waste from the annual care cut on the mechanical properties of particleboards. *Annals of Warsaw University of Life Sciences - SGGW. Forestry and Wood Technology*, 105/2019, 47-53.
- Borysiuk P., Auriga R., Kośka P., 2019:** Influence of the filler on the density profile of wood polymer composites. *Annals of Warsaw University of Life Sciences - SGGW. Forestry and Wood Technology*, 106/2019, 31-37.
- Auriga R., Borysiuk P., Smulski P., 2019:** Drewno jabłoni pochodzące z rocznego cięcia pielęgnacyjnego jako dodatek surowcowy przy produkcji płyt wiórowych. *Biuletyn Informacyjny Ośrodka Badawczo-Rozwojowego Przemysłu Płyt Drewnopochodnych w Czarnej Wodzie*, 1-2/2019, 17-24, <https://doi.org/10.32086/biuletyn.2019.02>.
- Borysiuk P., Jencyk-Tolloczko I., Auriga R., Kordzikowski M., 2019:** Sugar beet pulp as raw material for particleboard production. *Industrial Crops & Products* 141 (2019) 111829, <https://doi.org/10.1016/j.indcrop.2019.111829>.
- Borysiuk P., Burawska-Kupniewska I., Auriga R., Kowaluk G., Kozakiewicz P., Zbieć M., 2019:** Influence of layered structure of composite timber floor boards on their hardness. *Drvna Industrija* 70 (4) 399-406 DOI 10.5552/drvind.2019.1856.
- Borysiuk P., Furmanik A., Auriga R., 2019:** Wpływ warunków użytkowania na wybrane właściwości meblowych płyt wiórowych wykończonych filmem melaminowym. *Biuletyn Informacyjny Ośrodka Badawczo-Rozwojowego Przemysłu Płyt Drewnopochodnych w Czarnej Wodzie*, 3-4/2019, 107-117 <https://doi.org/10.32086/biuletyn.2019.04>

## 2018

- Borysiuk P., Kozakiewicz P., Nurczyk T., 2018:** Wpływ temperatury na wybrane właściwości płyt wiórowych. *Biuletyn Informacyjny Ośrodka Badawczo-Rozwojowego Przemysłu Płyt Drewnopochodnych w Czarnej Wodzie*, 1/2, 6-13 <https://doi.org/10.32086/biuletyn.2018.01>.
- Gumowska A., Wronka A., Borysiuk P., Robles E., Sala C., Kowaluk G., 2018:** Production of layered wood composites with a time-saving layer-by-layer addition. *BioResources*, 13(4), 8089-8099 DOI: 10.15376/biores.13.4.8089-8099.

- Borysiuk P., Auriga R., Stępień M., Jencyk-Tołłoczko I., 2018:** Attempts at application of polyethylene-coated waste paper as a raw material in the insulation boards production. 11<sup>th</sup> International Science Conference: „Chip and Chipless Woodworking Processes”, Proceedings, TU Zvolen, 13-15 September 2018 r., 235-240.
- Borysiuk P., Krajewski K., 2018:** Influence of pine wood impregnation with natural linseed oil on its modulus of elasticity. Annals of Warsaw University of Life Sciences - SGGW. Forestry and Wood Technology, 104/2018, 123-129.
- Borysiuk P., Auriga R., Jankowski K., Monder S., 2018:** Layered structural-insulating panels. Annals of Warsaw University of Life Sciences - SGGW. Forestry and Wood Technology, 104/2018, 239-244.

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