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**General information:** TECHTEXTIL – Frankfurt am Main – cover II; LUKASIEWICZ Research Network – Institute of Biopolymers and Chemical Fibres – p. 3; The 17<sup>th</sup> Pacific Polymer Conference 2022 – p. 10; Polymers'2022 New Trends in Polymer Science: Health of the Planet, Health of the People – p. 10; The 16<sup>th</sup> International Conference on Inorganic Membranes 2022 – p. 10; The 16<sup>th</sup> EPF European Polymer Congress 2022 – p. 10; 84<sup>th</sup> Prague Meeting on Macromolecules 2022 – p. 10; 25<sup>th</sup> CONVERGENCE Knoxville 2022 – p. 17; International Conference on Cellulose Fibres 2022 – p. 31, 87; ITMC Conference and Smart Textiles Salon 2022 – p. 36; College of Merchandising, Hospitality & Tourism – p. 43; Kyoto International Conference Center, Japan 2022 – p. 43; ICSTFD 2022: 16 International Conference on Sustainable Textiles and Fashion Design, France – p. 87; ICTDMMS 2022: 16 International Conference on Textile Development, Marketing and Market Samples, Italy – p. 87; 14<sup>th</sup> International Conference on Textile Composites Kyoto Institute of Technology, Japan – p. 87; LUKASIEWICZ Research Network – Institute of Biopolymers and Chemical Fibres – Medical masks (commercial offer) – cover III.



# ŁUKASIEWICZ RESEARCH NETWORK – INSTITUTE OF BIOPOLYMERS AND CHEMICAL FIBRES



**Director of the Institute:** Radosław Dziuba, Ph.D.

**The Institute of Biopolymers and Chemical Fibres** was consolidated with the Pulp and Paper Research Institute in 2007.

**The research subject** of IBWCH is conducting scientific and development research, as well as implementing their results into praxis in the following fields:

- processing, modifying, and application of biopolymers,
- techniques and technologies of manufacturing, processing, and application of chemical fibres and other polymer materials and related products,
- techniques and technologies connected with manufacturing, processing and application of products of the pulp and paper industry and related branches

**R&D activity** includes the following positions, among others:

- biopolymers – modifying and processing,
- functional, thermoplastic polymers,
- biodegradable polymers and products from recovered wastes,
- industrial biotechnology, e.g. bioprocesses for modifying and processing polymers and fibres, and biosyntheses of nanobiomaterial polymers,
- biomaterials for medicine, agriculture, and technique,
- nano-technologies, e.g. nano-fibres, polymer nano-coatings, nano-additives for fibres.
- processing of polymer materials into fibres, films, micro-, and nano- fibrous forms, and nonwovens,
- paper techniques, new raw material sources for manufacturing paper pulps,
- environmental protection,

**The Institute is active** in implementing its works in the textile industry, medicine, agriculture, plastic processing, filter and packing materials manufacturing, as well as in the cellulose and paper industries.

**The Institute has** the following five laboratories, which have accreditation certificates PCA:

- Laboratory of Microbiology
- Laboratory of Biodegradation
- Laboratory of Environment Protection
- Laboratory of Metrology
- Laboratory of Paper Quality

**The Institute's offer of specific services** is wide and differentiated, and includes:

- physical, chemical and biochemical investigations of biopolymers and synthetic polymers,
- physical, including mechanical investigation of fibres, threads, textiles, and medical products,
- tests of antibacterial and antifungal activity of fibres and textiles,
- investigation in biodegradation,
- investigation of morphological structures by SEM and ESEM
- investigation and quality estimation of fibrous pulps, card boards, and paper products, including paper dedicated to contact with food, UE 94/62/EC tests, among others.
- Certification of paper products.

**The Institute is member** of domestic and international scientific organisations, the following, among others: EPNOE Association-European Polysaccharide Network of Excellence, Polish Chitin Society, Centre of Advanced Technology of Human-Friendly Textiles 'PROHUMANOTEX', Polish Platform of Textile Technology, Polish Platform of the Forest-Wood Technology Sector, International Scientific Network 'Environment versus Technology' ENVITECH-NET.

**The Institute participates** in the following strategic research projects: KEY PROJECT: 'Biodegradable fibrous goods', BI-OGRATEX – PO IG 01.03.01-00-007/08; FORESIGHT PROJECT: 'Modern technologies for textile industry. A Chance for Poland' – UDA – PO IG 01.01.01-00-005/09-00 (as a leader); STRATEGIC PROJECT: 'Technology for the preparing of biodegradable polyesters using renewable raw materials', BIOPOL – PO IG 01.01.02-10-025/09; STRATEGIC PROJECT: 'Application of biomass for production of environmentally friendly polymeric materials', BIOMASS – PO IG 01.01.02-10-123/09.

**The Institute organises** educational courses and workshops in fields related to its activity.

**The Institute is active** in international cooperation with a number of corporation, associations, universities, research & development institutes, and companies from Austria, Germany, Finland, France, Sweden and the United States among others.

**The Institute is a publisher** of the scientific journal 'FIBRES & TEXTILES in Eastern Europe'; the journal is since 1999 on the 'Philadelphia List' of the Institute for Scientific Information.

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