CURRICULUM VITAE

PROF. DR. ING. PETR LENFELD

Technical University of Liberec, Studentská 1402/2, Liberec 1, 461 17, Czech Republic

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EDUCATION AND ACADEMIC DEGREES

Professor, Engineering Technology
Faculty of Mechanical Engineering, Technical university of Liberec (TUL), Czech Republic, 2008.

Assoc. Prof., Engineering Technology
Faculty of Mechanical Engineering, Technical university of Liberec (TUL), Czech Republic, 2001.

Dr., Engineering Technology
Faculty of Mechanical Engineering, Technical university of Liberec (TUL), Czech Republic, 1997.

Ing., Engineering Technology
Faculty of Mechanical Engineering, Technical university of Liberec (TUL), Czech Republic, 1989

PROFESSIONAL PROFILE

Dean of Faculty of Mechanical Engineering, Technical university of Liberec
Technical university of Liberec (TUL), Faculty of Mechanical Engineering, Czech Republic, 2014-so far.

Head of Department of Engineering Technology
Technical university of Liberec (TUL), Faculty of Mechanical Engineering, Czech Republic, 2003-2014

Head of Laboratory of Advanced Industry Technologies
Technical university of Liberec (TUL), Centre for nanomaterials, advanced technologies and innovation, Czech Republic, 2010-2011.

Head of Department of Metal Forming and Plastics
Technical university of Liberec (TUL), Faculty of Mechanical Engineering, Czech Republic, 1999-2003

Independent researcher
Tesla Liberec, 1989-1992

PROFESSIONAL AND SCIENTIFIC ORIENTATION

Pedagogical, scientific research and professional focus is focused on research and complex development in the field of plastics, bioplastics, composites and nanomaterials, technologies and processes of plastics processing, construction of parts and molds, simulations, additive processes, innovations, etc. . for the different areas of industry.

He is the author or co-author of 31 publications indexed on the Web of Science and Scopus, 3 monographs, 2 scripts, 8 international and national patents, 30 utility models, 2 European industrial designs, 2 prototypes, 6 proven technologies and 3 commercialized results with signed licensing agreements.

SELECTED PUBLICATIONS (2020, 2019, 2018, 2017)

BORŮVKA, M., BĚHÁLEK, L., BRDLÍK, P., LENFELD, P., BOBEK, J., WONGMANEE, S., PECHOČIAKOVÁ, M. Thermomechanical properties, morphology and non-isothermal crystallization of solid and microcellular biocomposites based on stereocomplexed polylactide and cellulose nanocrystals. *Journal of Thermal Analysis and Calorimetry*, 2020, ISSN: 1388-6150.

LENFELD, P., LENFELDOVÁ, I., BĚHÁLEK, L., BORŮVKA, M. Mechanical Properties of Hierarchical Biopolymer Composite with a Modified Surface of Knitting Fabric. *Materials Science Forum*, Vol. 994, pp. 179-188, ISSN: 1662-9752, Trans Tech Publications Ltd, Switzerland, online: 2020-05-27

BĚHÁLEK, L., BORŮVKA, M., BRDLÍK, P., HABR, J., LENFELD, P., KROISOVÁ, D., VESELKA, F., NOVÁK, J. Thermal properties and non-isothermal crystallization kinetics of biocomposites based on polylactide, rice husks and cellulose fibres. *Journal of Thermal Analysis and Calorimetry,* 2020. ISSN: 1388-6150.

HABR, J., LENFELD, P., BĚHÁLEK, L., BORŮVKA, M., BRDLÍK, P. Mechanical Properties of Biopolymer Composite with Natural Fibers Surface Modified by Low-Temperature Plasma. *MM Science Journal*. ISSN: 1803-1269.

NGAOWTHONG, C., BORŮVKA, M., BĚHÁLEK, L., LENFELD, P., ŠVEC, M., DANGTUNGEE, R., SIENGCHIN, S., RANGAPPA, S., PARAMESWARANPILLAI, J. Recycling of sisal fiber reinforced polypropylene and polylactic acid composites: Thermo-mechanical properties, morphology, and water absorption behavior, *Waste management*, Elsevier, 1, p. 71-81, ISSN: 0956-053X, 2019.

BORŮVKA, M., BĚHÁLEK, L., LENFELD, P., PECHOČIAKOVÁ, M. Structure-related properties of bionanocomposites based on poly(lactic acid), cellulose nanocrystals and organic impact modifier, *Materials Technology*, Taylor & Francis, p. 143-156, ISSN: 1066-7857, n. 3, 2019.

LENFELD, P., BĚHÁLEK, L., BORŮVKA, M., Application of cryogenic grinding for filler preparation in the form of coconut nanocomposites into the thermoplastic matrix with the evaluation of properties while using different types of MAgPP coupling agents. *Journal of Mechanical Engineering*, 2018, 15(2), pp. 13-27. Malaysia, Universiti Teknologi MARA, ISSN: 1823-5514.

VÁCHA, J., LENFELD, P. Correlation between electromagnetic shielding efficiency and resistivity of thermoplastic polymer nanocomposite. *NANOCON 2017–Conference Proceedings*, 9th International Conference on Nanomaterials. Ostrava: 2018. p. 80 – 87. ISBN 978-808729481-9.

PRŮŠEK, J., BORŮVKA, M. LENFELD, P. Natural Aerobic Degradation of Polylactic Acid (Composites) with Natural Fiber Additives. *Materials Science Forum*. Trans Tech Publications, 2018. p. 167–174. ISSN 1662-9752.

NGUYEN VO, T., LENFELD, P. The Effect of Different Heights and Angles of Energy Director on Interface Temperature for Ultrasonic Welding of Thermoplastics. IOP Conference Series: *Materials Science and Engineering*. Institute of Physics Publishing, 2018. (9 pages). ISSN 17578981.

BORŮVKA, M., BĚHÁLEK, L., LENFELD, P., NGAOWTHONG, C. AND PECHOCIAKOVA, M. Structure-related properties of bionanocomposites based on poly (lactic acid), cellulose nanocrystals and organic impact modifier. *Materials Technology*, pp. 1-14, 2018, ISSN 1066-7877. DOI: 10.1080/10667857.2018.1540332.

BORŮVKA, M., BĚHÁLEK, L., HABR, J., LENFELD, P., VÁCHA, J., NGAOWTHONG, C. Properties of injection molded nanocomposites and blends based on PLA, PHBV and L-CNC, *Journal of Mechanical Engineering,* Shah Alam, Selangor Darul Ehsan Malaysia, UiTM Press, p. 128-141, 14 pages, ISSN: 1823-5514, n. 3, 2017.

NGUYEN VO, T., LENFELD, P. A Review of Studies on Ultrasonic Welding. *International Journal of Advance Engineering and Research Development*. Gujarat, 2017, vol. 4, n. 9, 09/2017. p. 482 – 489. ISSN 2348-4470.

GRANTS AND PROJECTS

TAČR: TA01010946. 2011-2013. Research of utility properties and application possibilities of polymeric materials with natural fillers and nanofillers based on synthetic and PLA matrices. Principal investigator TUL: prof. Dr. Ing. Petr Lenfeld.

MSMT: 2010-2013. CZ.1.05./2.1.00/01.005: Centre for nanomaterials, advanced technologies and innovation. Contractor: Technical university of Liberec.

MVČR: VG20122014078. 2012-2014. Applied research of new generation protective masks with nanofiltres to increase men protection from design, technological and material point of view. Principal investigator TUL: prof. Dr. Ing. Petr Lenfeld.

TAČR: TA04011009 2014-2017. Research of utility properties and application possibilities of lightweight polymer composites for the construction of car body and parts with reduced weight. Principal investigator TUL: prof. Dr. Ing. Petr Lenfeld.

MVČR: VI20172020052. 2017-2020. Applied research in the field of the new generation of personal protective equipment for the demands of joint rescue service.

MŠMT: MSM/EF EF16_019/0000843. 2018 – 2022. Hybrid materials for hierarchical structures. OP VVV – Excellent research. CZ.02.1.01/0.0/0.0/16_019/0000843. Principal investigator TUL: prof. Dr. Ing. Petr Lenfeld.

SELECTED PATENTS

LENFELD, P., AUSPERGER, A., BĚHÁLEK, L., BOBEK, J., LUKEŠ, M., SEIDL, M., SEVERA, Z. Composite with synthetic polymeric matrix and cellulose in the form of natural fibre filler. 28.6.2017, EP 2882805.

LENFELD, P., BOBEK, J., SEIDL, M. Composite with polyolefinic thermoplastic matrix and fibers of coconut for extrusion processes. WO2015039635 (A1), EP3046954A1.

HABR, J., LENFELD, P., BĚHÁLEK, L., BOBEK, J., SEIDL, M., LUKEŠ, M., SEVERA, Z., KOPEČEK, J. A polymer composite with natural fibres and a light-weight matrix. 12.7.2017, CZ 306882.

HABR, J., BĚHÁLEK, L., LENFELD, P., BOBEK, J. A polymeric composite with hollow glass microspheres and carbon fibres. 22.11.2017, CZ 307078.

LENFELD, P., AUSPERGER, A., BĚHÁLEK, L., BOBEK., J., HABR, J., LUKEŠ, M., SEIDL, M., SEVERA, Z.. A biocomposite with a PLA matrix and banana fibres. 12.7.2017, CZ 306879.

LENFELD, P., BĚHÁLEK, L., BOBEK, J., HABR, J., SEIDL, M. Protective breathing mask with common aspiration and expiratory opening. 23.12.2015, CZ305677B6; WO2015058731A1; EP3060313A1; JP2017509377A; PH12016500760A1; US2016287915A1.