PERSONAL INFORMATION Petr Blecha

Brno University of Technology, Faculty of Mechanical Engineering,
Technická 2896/2, Brno, 616 69, Czech Republic

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blecha@fme.vutbr.cz

http://www.fme.vutbr.cz/prdetail.html?pid=2489&lang=1

Sex male | Date of birth 01/06/1973 | Nationality Czech Republic

WORK EXPERIENCE

2020 - present Authorised Director of the Institute of Manufacturing Technology

Brno University of Technology, Faculty of Mechanical Engineering,
Technická 2896/2, Brno, 616 69, Czech Republic

- Responsibility for multidisciplinary research agenda;
- management of projects and cooperation with industrial partners;
- development of R&D cooperation with institutions abroad.

2009 - present Head of the Department of Production Machines and Equipment
Mechatronics Division of the NETME Centre

Brno University of Technology, Faculty of Mechanical Engineering, NETME Centre,
Technická 2896/2, Brno, 616 69, Czech Republic

- Responsibility for research agenda of the Department of Production Machines and Equipment;
- management of projects and cooperation with industrial partners;
- coordination of interdisciplinary cooperation with universities as well as with external research institutions;
- development of R&D cooperation with institutions abroad.

2006 - present Director of the Institute of Production Machines, Systems and Robotics

Brno University of Technology, Faculty of Mechanical Engineering, Technická 2896/2, Brno, 616 69,
Czech Republic

- Executive position in research and educational activities of the Institute, leadership of a team of 42 staff members;
- active participation in conception of development of the tuition of mechanical engineering field of study, implementation of double-degree study programmes with TU Chemnitz (Germany);
- publishing of research papers and teaching materials, coordination and management of projects, consultation and lecturing activities in the Czech Republic and abroad.

2005 - 2012 Head of Department of Production Machines
Institute of Production Machines, Systems and Robotics

Brno University of Technology, Faculty of Mechanical Engineering, Technická 2896/2, Brno, 616 69,
Czech Republic

- Responsibility for research and educational agenda of the Department;
- lecturing, implementation of new courses focused on machining and forming machines;
- publication of teaching materials;
- cooperation with foreign institutions.

1999 - 2006 Researcher at the Research Center of Automatic Manipulation

Brno University of Technology, Faculty of Mechanical Engineering, Technická 2896/2, Brno, 616 69,
Czech Republic

- Research and development in the field of automatization, quality and capability assurance of production machines;
- development of original methods for hazard identification and risk assessment in design of machinery;
- assurance of reliability, functional and electrical safety of machinery and procedures for assessment of electromagnetic compatibility of machines.

EDUCATION AND TRAINING

2018 **Recertification „Safety Engineer“ at TÜV AUSTRIA CERT**
Approvement of competences in safety engineering.

2011 **Training „Certified Safety Engineer“ at TÜV Austria Akademie**
Ending 11. April 2011 with certification exam.

2010 **Associate Professor (doc.)**
Design and Process Engineering; Brno University of Technology.

2006 **Training „Ausbildung zum Risikomanager“ at TÜV Österreich Akademie**
Ending 22. Mai 2006 with certification exam.

2004 **Teaching skills course for academic staff of the Brno University of Technology**
Lifelong learning ending with certification exam.

2003 **Doctor of Philosophy (Ph.D.)**
Design and Process Engineering; Construction of machinery and equipment; Brno University of Technology.

1997 **Technical Connoisseurship in Engineering and in Economics of Production Machines, Equipment and Systems**
Lifelong learning ending with certification exam.

1996 **Master of Science in Mechanical Engineering (Ing.)**
Mechanical Engineering, Construction of machinery and equipment; Brno University of Technology.

PERSONAL SKILLS

Mother tongue(s): Czech

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Germany	C1	C2	C1	C1	C2
English	A2	B1	B1	B2	B1
Russian	B1	B1	A1	A2	A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Communication skills

- Good communication skills gained through my experience as Director of Institute;
- teacher / high school teacher with experience of more than 20 years;
- lecturers - more than 100 contributions at international conferences and invited lectures;
- good negotiating skills in crisis situations resulting in the position Director of Institute.

Organisational / managerial skills

- Leadership skills (I have led teams of more then 80 workers and researchers);
- organizational skills in dealing with the challenges (project principal investigator and co-investigator).

Professional skills

- Analyses of capability of machinery design – quality management according to ISO 9000 series;
- analyses of capability of production processes – quality management according to ISO 9000 series;
- analyses of environmental impacts of products and production processes – according to ISO 14000 and ISO 50000 series;
- OHSAS analyses according to ISO 18000 series.

Digital competence
- MS Office;
- Matlab/SIMULINK;
- NX (I-Deas).

Other skills
- Assessment of safety of machinery design;
- assessment of functional safety of safety-related parts of control systems;
- assessment of electrical safety and electromagnetic compatibility of machinery.

Driving licence B

ADDITIONAL INFORMATION

Publications

H-index: **4** (Web of Science); **7** (Scopus)
ORCID ID: 0000-0003-4182-288X
Researcher ID: AAS-5230-2020
Scopus ID: 36247237500

Sum of citations (without self-citations) indexed within SCOPUS: 155
Sum of citations (without self-citations) indexed within ISI Web of Knowledge: 46
Sum of other citations (without self-citations,): 49

Bibliographic references of the most significant results of scientific and research activities

HOLUB, Michal, Petr BLECHA, Frantisek BRADAC, Tomas MAREK and Zdenek ZAK. GEOMETRIC ERRORS COMPENSATION OF CNC MACHINE TOOL. MM Science Journal [online]. 2016, 2016(06), 1602-1607. DOI: 10.17973/MMSJ.2016_12_2016194. ISSN 18031269. Available from: http://www.mmscience.eu/december-2016.html#2016194 **Times cited: 7**

HOLUB, Michal, Petr BLECHA, Frantisek BRADAC and Roman KANA. VOLUMETRIC COMPENSATION OF THREEAXIS VERTICAL MACHINING CENTRE. MM Science Journal [online]. 2015, 2015(03), 677-681. DOI: 10.17973/MMSJ.2015_10_201534. ISSN 18031269. Available from: http://www.mmscience.eu/october-2015.html#201534; **Times cited: 14**

TŮMA, Zdenek, Jiri TŮMA, Radek KNOFLÍČEK, Petr BLECHA and Frantisek BRADÁČ. The Process Simulation Using by Virtual Reality. Procedia Engineering [online]. 2014, 69, 1015-1020. DOI: 10.1016/j.proeng.2014.03.084. ISSN 18777058. Available from: http://linkinghub.elsevier.com/retrieve/pii/S1877705814003300; **Times cited: 22**

BLECHA, Petr, Lubomír W. NOVOTNÝ
Integration of Risk Management into the Process of PLC-Software Development in Machine Tools. MECHATRONICS: RECENT TECHNOLOGICAL AND SCIENTIFIC ADVANCES Pages: 2011 ,19-24 . ISBN: 978-3-642-23243-5 **Times cited: 7**

HADAS, Zdenek, Michal HOLUB, Petr BLECHA, Jan VETISKA and Vladislav SINGULE. ENERGY ANALYSIS OF ENERGY HARVESTING FROM MACHINE TOOL VIBRATIONS. MM Science Journal [online]. 2014, 2014(01), 463-466 . DOI: 10.17973/MMSJ.2014_03_201404. ISSN 18031269. Available from: http://www.mmscience.eu/march-2014.html#201404; **Times cited: 2**

BLECHA, Petr, Radim BLECHA a Frantisek BRADAC. Integration of risk management into the machinery design process. In Mechatronics: Recent Technological and Scientific Advances, 9th International Conference on Mechatronics 2011; Warsaw; Poland; 2011, p. 473-482 ISBN 978-364223243-5; **Times cited: 12**

Projects

2020 – present LEVEL-UP - Protocols and Strategies for extending the useful Life of major capital investments and Large Industrial Equipment., European Union - Horizon 2020, ID: H2020-NMBP-TR-IND-2018-2020, Member of project team, principal person responsible at BUT

2019 – present National Centre of Competence ENGINEERING, Technology Agency of the Czech Republic - National Competence Centers 1, ID: TN01000015, Member of project team, principal person responsible at BUT

2019 – present Increasing the level of OSH management in workspace with occurrence of fine and ultra fine particles, Technology Agency of the Czech Republic – Programm ÉTA, ID: TL02000240, Fellow researcher

2019 – present Machine Tools and Precision Engineering; Ministry of Education, Youth and Sports, ID: EF16_026/0008404, Fellow researcher

2018 – present Application of research results of assembly platforms in direct cooperation with SMEs, Ministry of Industry and Trade, ID: EG17_176/0014554, Fellow researcher

2014 – present Use of progressive technologies for efficient assembly and setting up of machine tools, TA ČR - Programm ALFA, ID: TA04011406, Project manager.

2014 – present NETME Centre PLUS; Nr. LO1202 - „National Sustainability Programme I“, Senior researcher, Head of the Department of Production Machines and Equipment at Mechatronics Division.

2012 – present Competence Center - Manufacturing Technology, TE01020075, Project Co-Investigator and Work package manager.

2011 – 2013 Support of development of fully satisfying machines, MPO ČR Programm TIP, Project ID: FR-TI3/780, project manager.

2011 – 2013 Ecodesign in machine tool construction, MPO ČR Programm TIP, Project ID: FR-TI3/655, co-manager.

2009 – 2013 NETME Centre - New Technologies for Mechanical Engineering, EU Project OP VaVpI Nr. CZ.1.05/2.1.00/01.0002 (www.netme.cz/en), senior researcher, Head of the Department of Production Machines and Equipment at Mechatronics Division.

2009 – 2012 Knowledge and Skills in Mechatronics - Innovations Transfer to Practice, EU Project OP VpK Nr. CZ.1.07/2.2.00/07.0406 (http://mechatronika.fme.vutbr.cz/EN/index.aspx), member of management team.

2005 – 2011 Research of Production techniques and technologies project, Nr. 1M0507 (www.rcmt.cvut.cz), head of project RCMT No. 1.2.4.

Patents

HOLUB, M.; BLECHA, P.; BRADÁČ, F.; PAVLÍK, J.; VETIŠKA, J.; FLEKAL, L.; Brno University of Technology, Brno, CZ: Device to measure accuracy of spindle run under static load; Patent Nr.: 305589 (2015). Used during solutions of R&D activities and maintained as excellent know-how of the workplace.

PAVLÍK, J.; BADIN, P.; KOLÍBAL, Z.; BLECHA, P.; BLECHA, R.; BRADÁČ, F.; Brno University of Technology, Brno, CZ: Manipulator for automatic change of tools. Patentu Nr.: 303528 (2012).

KOLÍBAL, Z.; BLECHA, P.; BLECHA, R.; TOMAN, J.; BRADÁČ, F.; Brno University of Technology: Adaptive vacuum-type end effector. Utility model; Registration Number: 25083 (2013).

Cooperation with industry (over the past 5 years)

2019

- Risk and Safety Analysis of WeldPrint MCV 5X hybrid center, head of research team, producer KVOSVIT MAS, a.s.
- Assessment of functional safety of a machining centre MCV 1000 5AX, head of research team, producer KVOSVIT MAS, a.s.
- Risk and Safety Analysis of WeldPrint MCV 5X hybrid center, head of research team, producer KVOSVIT MAS, a.s.
- Functional safety assessment of the vertical turning centre KL 285 MC SIEMENS 828D, head of research team, producer KVOSVIT MAS, a.s.

2018

- Risk and Safety Analysis of Grinding machine BUD 100 CNC Multi, head of research team, producer Slovácké strojírny, akciová společnost.
- Functional safety assessment of the BUD 100 CNC Multi grinding machine, head of research team, producer Slovácké strojírny, akciová společnost.
- Risk analysis of electrical circuits and electromagnetic compatibility by the BUD 100 CNC Multi type grinding machine, head of research team, producer Slovácké strojírny, akciová společnost.
- Risk and Safety Analysis of EXPERTURN 1000 C Machine, head of research team, producer TOSHULIN, a.s.

- Functional safety assessment of the vertical machining centre EXPERTURN 1000 C Nr. 1840, head of research team, producer TOSHULIN, a.s.
- Risk analysis of electrical circuits and electromagnetic compatibility by vertical vertical machining centre EXPERTURN 1000 C v.č. 1840, head of research team, producer TOSHULIN, a.s.
- Risk and Safety Analysis of Machines FU, FRU and SKD series produced by TOS KUŘIM - OS, a.s., head of research team, producer TOS KUŘIM - OS, a.s.
- Risk and Integrated Safety Analysis of KHZ 8A pneumatic-hydraulic drop hammer, head of research team, producer Šmeral Brno a.s.
- Risk and Safety Analysis of WALDRICH COBURG 50-15 S 4040X gantry type grinding machine, head of research team, producer SBA mechatronics GmbH, Austria
- Functional safety assessment of the WALDRICH COBURG 50-15 S 4040X gantry type grinding machine, head of research team, producer SBA mechatronics GmbH, Austria
- Risk analysis of electrical circuits and electromagnetic compatibility by the WALDRICH COBURG 50-15 S 4040X gantry type grinding machine, head of research team, producer SBA mechatronics GmbH, Austria
- Risk and Safety Analysis of MCV 800 machining center, head of research team, producer KVOSVIT MAS, a.s.
- Assessment of functional safety of a machining centre MCV 800, head of research team, producer KVOSVIT MAS, a.s.
- Risk and Safety Analysis of robotic cell 1R16, head of research team, producer KVOSVIT MAS, a.s.
- Risk and Safety Analysis of robotic line 1R12, head of research team, producer KVOSVIT MAS, a.s.
- Risk and Safety Analysis of robotic line HRIDELCENTRUM 1R10, head of research team producer KVOSVIT MAS, a.s.
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2017

- Risk and Safety Analysis of MCU 450 multifunctional five-axis machining center, head of research team, producer KOVOSVIT MAS, a.s.
- Risk analysis and assessment for the project Testing room - testing of steam turbines – NoloadTest (FMECA), head of research team, producer SIEMENS, s.r.o. - Branch Industrial Turbomachinery in Brno.
- Risk and Safety Analysis of EXPERTURN 1250 S Machine, Nr. 1811, head of research team, producer TOSHULIN, a.s.; reviewed by Bureau Veritas France.
- Functional safety assessment of the vertical machining centre EXPERTURN 1250 S, Nr. 1811, head of research team, producer TOSHULIN, a.s.; reviewed by Bureau Veritas France.
- Risk analysis of electrical circuits and electromagnetic compatibility by vertical vertical machining centre EXPERTURN 1250 S Nr. 1811, head of research team, producer TOSHULIN, a.s.; reviewed by Bureau Veritas France
- Risk and Safety Analysis of robotic line ROTORCENTRUM 1R07, head of research team, producer KVOSVIT MAS, a.s.
- Functional safety assessment of the robotic line ROTORCENTRUM 1R07, head of research team, producer KVOSVIT MAS, a.s.
- Risk analysis of electrical circuits and electromagnetic compatibility by robotic line ROTORCENTRUM 1R07 according to the directives 2014/35 / EU and 2014/30/EU, head of research team, producer KVOSVIT MAS, a.s.

2016

- Development of equipment for production process automatization, head of research team, producer MEZ spol. s r.o. Pelhřimov.
- Risk and safety analysis of a EXPERTURN 1000 S machine tool, head of research team, producer TOSHULIN, a.s.
- Assessment of functional safety of a EXPERTURN 1000 S machine tool, head of research team, producer TOSHULIN, a.s.
- Risk and safety analysis of a electrical circuits and electromagnetic compatibility at EXPERTURN 1000 S machine tool, head of research team, producer TAJMAC-ZPS, a.s.
- Risk and safety analysis of a EXPERTURN 1250 S machine tool, head of research team, producer TOSHULIN, a.s.
- Assessment of functional safety of a EXPERTURN 1250 S machine tool, head of research team, producer TOSHULIN, a.s.

- Assessment of functional safety of a KS 600 mining machine, head of research team, producer OSTROJ, a.s. Opava.
- Risk and Safety Analysis of FU 150 Machine, head of research team, producer TOS KUŘIM - OS, a.s.
- Functional safety assessment of machining centre with movable stand FUT 150, hlhead of research team, producer TOS KUŘIM - OS, a.s.
- Risk analysis of electrical circuits and electromagnetic compatibility by machine tools series FU according to the directives 2014/35 / EU and 2014/30 / EU, head of research team, producer TOS KUŘIM - OS, a.s.

2015

- Development of virtual models of machines WHQ 13 CNC, WRD 150 Q, WHR 13 Q, WHtec 130, head of research team, producer TOS VARNSDORF a.s.
- Risk and safety analysis of a SKDY 63/80D machine, head of research team, producer ČKD BLANSKO - OS, a.s.
- Assessment of functional safety of a SKDY 63/80 D machine; head of research team, producer ČKD BLANSKO - OS, a.s.
- Risk and safety analysis of a machine operator cabin at HCW 2 machine tool, head of research team, producer HESTEGO, a.s.
- Risk and safety analysis of a EXPERTURN 1250 S machine, head of research team, producer TOSHULIN, a.s.
- Assessment of functional safety of a EXPERTURN 1250 S machine, head of research team, producer TOSHULIN, a.s.
- Assessment of functional safety of a MCV machine, head of research team, producer TAJMAC-ZPS, a.s.
- Risk and safety analysis of a vertical forging press LMZ 4000, head of research team, producer ŠMERAL Brno, a.s.

2014

- Assessment of functional safety of a machining centre MCU 1100, head of research team, producer KOVOSVIT MAS, a.s.
- Risk and Safety Analysis of MCU 1100V-5X Machine, head of research team, producer KOVOSVIT MAS, a.s.

Memberships

2015 – present	Member of the Scientific Board, Faculty of Mechanical Engineering, Brno University of Technology.
2014 – present	Member of the National Innovation Platform - Engineering, manufacturing and distribution of electricity, electrical engineering.
2013 – present	Executive board member of the Technology platform on manufacturing engineering technology.
2013 – present	Chairman of Committee for Impartiality Assurance and Certification Board of the Certification Body No. 3156.
2011 – present	Member of the Technical Committee for Reliability of International Federation for the Promotion of Mechanism and Machine Science (IFToMM).
2011 – present	Member of Aacademic Workers Chamber of Academy Senate of Faculty of Mechanical Engineering, Brno University of Technology.
2010 – 2015	Chairman of Branch Commitee for Doctoral Study Programme Metrology and Quality Testing.
2009 – 2013	Member of Committee for Impartiality Assurance and Certification Board of the Certification Body No. 3156.
2008 – present	Editorial Board Member of MM Science Journal (www.mmscience.eu).
2008 – present	Editorial Board Member of Journal of Safety Research and Applications (www.bozpinfo.cz/josra).
2007 – present	Main Technical Representative in The International Academy for Production Engineering (CIRP).
2007 – present	Member of Research Fuondation Committee.
2006 – present	Member of Study Programme Committee.

Foreign internships

2014 – present	TU Košice (Slovakia) – regular teaching mobility (safety management in machinery).
2014 – present	TU Wien (Austria) – regular teaching mobility (quality management).
2001 – present	TU Chemnitz (Germany) – regular teaching mobility (quality management, automatization and safety of machine tools).
2000	TU Chemnitz - research stay (Dynamische Verhaltens von Poly-V-Riemen).
1998	TU Chemnitz - research stay (Aktiv magnetgelagerter Spindeln für Werkzeugmaschinen).