prof. Ing. Milan Růžička, CSc.
Born on February 6, 1955 in Nymburk
Faculty of Mechanical Engineering, Czech Technical University in Prague (CTU), Dept. of Mechanics, Biomechanics and Mechatronics.

Academic profile:

- 1974–1979 MD study at CTU in Prague;
- 1979-1984 PhD study at CTU in Prague;
- 1983-1999 assistant at the Dept. of Elasticity and Strength, CTU in Prague;
- 1999 habilitation (Doc.), CTU in Prague;
- 2008 habilitation (full professor), CTU in Prague;

Employment and stays abroad:

- 1983 till now CTU in Prague
- 1980-83 Aerospace Research and Test Institute in Prague (part time job 0,1)
- 1990-92 Institute of Thermodynamic, Prague (part time job 0,1)
- 1987-1988 University of Karlsruhe - 10 months scholarship (DAAD);
- University of Dresden, 3 months,
- TU Darmstadt 2 months (DAAD);
- 2004 Berkeley, USA 2 months.

Professional orientation:

Experimental methods in continuum mechanics, experimental stress and strain analysis, SHM (Structural Health Monitoring), mechanical and fatigue behavior of materials including composites, fracture mechanics. Supervisor of Ph.D. students, 6 graduates, at present 5 Ph.D. students.
Scientific papers in the impact journals (13), scientific papers in non-impact journals with review (15), articles in journals without review, articles in proceedings (169), author or co-author of chapters in 5 book publications.

Educational activity:

Guarant and lecturer of a number of bachelor's, master's and doctoral courses, supervisor of doctoral students (7 defended PhD-works), author of 6 script titles, 4 electronic scripts and lectures.

Further activities:

member of the GACR Branch Committee (6 years 2002-2007), 2 years Chairman of the Engineering Committee of the GACR (2006-2007), member of the Engineering Academy of the Czech Republic (Head of Mechanical Engineering Section), Danubia-Adria Symposium on Advances in Experimantal Mechanics (member of the Scientific committee), Czech Society for Mechanics, Bulletin of Applied Mechanics (ISSN 1801-1217) (member of the Editorial board), Czech Society for Biomechanics (member), European Workshop on Structural Health Monitoring, Chairmen of the Conference International Conference on Variable Amplitude loading, Prague 2015.
member of the Scientific Board of FS ČVUT (since 2010),
Member of the Scientific Board of FS TU in Liberec and Board of FAV ŽČU in Pilsen.

Project application in last years

- ESA Tender AO / 1-7031 / 12 / NL / AD: High performance tanks with in-situ health monitoring
- FLEXTURBINE: Flexible Fossil Power Plants for Future Energy Market through New and Advanced Turbine Technologies, EU2020 Call Topic: LCE - 17 - 2015 (Co-investigator)
- TURBO-REFLEX: TURBOmachinery REtrofits enabling FLEXible back-up capacity for the European Energy System, EU2020 Call Topic: LCE - 2016-17 (Co-investigator)
- GAČR 101/09/0904 Research of effect of loading processes combination spectral properties on structures life (investigator) 2009-2011
- GAČR 101/08/H068 Research of new principle of mechanical sand biomechanical systems with a intelligent behaviour (investigator), 2008-2011
- GAČR 101/08/0299 Research of intelligent composite components of machine tools made of ultrahigh modulus fibers and nano particles modified matrix (co-investigator), 2008-2011

- TAČR TA 02010543 (2012-2015) Research and development of new types of hybrid composite structures with damping (co-investigator).
- TE01010075 (2012-2018) Competence Center - Engineering Manufacturing Technology (Head of WP7)
- TAČR TA 04031450 (2014-2017) System for monitoring of structures using optical fiber sensors (co-investigator)
- TAČR TH01010772 (2015-2017) Development of precision rifle with composite hybrid main (team member)
- TAČR TF03000050 (2017-2019) High Speed Light Transmission for Electric Vehicle Installation Using Composite Materials (team member)

List of the most significant application results in recent years

- Valášek, M. - Růžička, M. - Uher, Ondřej: Manipulator. Patent Office of Industrial Property, 304220. 2013-11-27
- Růžička, M. - Kulíšek, V. - Vrba, P. - Smolík, J. - Mindl, J. - et al .: Hybrid Headstock of MASTURN Machine. [Functional sample]. 2015
- Růžička, M. - Kulíšek, V. - Smolík, J. - Zbožínek, R. - Machálka, M .: Hybrid slide-
- beam with composite reinforcement. 2015
- Růžička, M. - Kulíšek, V. - Vrba, P. - Sova, J. - Smolík, J. - et al .: Composite drive shaft with joint integration for high torque transmission. [Functional sample]. 2015.
- Dvořák, M. - Růžička, M. - Had, J. - Pošvář, Z .: Monitoring of 3D Composite Structures Using Fiber Optic Bragg Grating Sensors. In: Structural Health Monitoring 2011. Lancaster, Pennsylvania: DEStech Publications, Inc., 2011, p. 1595-1602. ISBN 978-1-60595-053-2. application of FBG sensors for monitoring, use in exp. analysis of structures, eg Aero Vodochody a.s.
- Dvořák, M. - Štěpánek, M. - Růžička, M .: Composite Wing of UL Category with Integrated Optical FBG Deformation Sensors. [Functional sample]. 2012

Significant Publications:

- Had, J – Růžička, M: Computational analysis of damage in hybrid composite structure. Composite Structures. Volume 135, January 2016, Pages 109–121. http://dx.doi.org/10.1016/j.compstruct.2015.09.009
- Nieslony, A. – Růžička, M: Fatigue life prediction for broad-band multiaxial loading with various PSD curve shapes. International Journal of Fatigue.Volume 44, November 2012, Pages 74–88. http://dx.doi.org/10.1016/j.compstruct.2015.09.009
- Růžička, M- Uher,O.- Blahouš,K. –Kulíšek, V.: Computational design and static and fatigue tests of high-performance integrated joints. Mechanics of Composite Materials.Volume 46, Issue 3, September 2010, Pages 317-322. http://dx.doi.org/10.1007/s11029-010-9148-8
- Ivan Kelnar , Ludmila Kaprálková, Jaroslav Kratochvíl, Zdeněk Padovec, Milan Růžička, Jiřina Hromádková: Effect of layered silicates and reactive compatibilization on structure and properties of melt-drawn HDPE/PA6 microfibrillar composites. Polymer Bulletin Vol. 73, Is. 6. (2016). ISSN: 0170-0839 (Print) DOI: 10.1007/s00289-015-1570-6. http://dx.doi.org/10.1007/s00289-015-1570-6
- Zdeněk Padovec, Vít Sháněla, Milan Růžička, Norbert Dolejš: Java application for springback analysis of composite plates. Advances in Engineering Software. Volume 72, June 2014, Pages 77–84. http://dx.doi.org/10.1016/j.advengsoft.2013.06.003
- Z. Padovec , M. Růžička: Springback Angle of a C/PPS Laminate with a Textile Reinforcement. Mechanics of Composite Materials. May 2013, Volume 49, Issue 2, pp 221-230. http://dx.doi.org/10.1007/s11029-013-9338-2
- J. PAPUGA, Z. HRUBÝ, M. RŮŽIČKA, M. BALDA and J. SVOBODA: Deterministic Processing of Complex Multiaxial Fatigue Load Data on a Tubular Specimen with Hole. Fatigue & Fracture of Engineering Materials & Structures. Volume 35, Issue 6, pages 523–537, June 2012. http://dx.doi.org/10.1111/j.1460-2695.2011.01644.x