

RESEARCH LABORATORY OF EXPERIMENTAL MECHANICS

ABOUT LABORATORY

The Research Laboratory of Experimental Mechanics at the Faculty of Mechanics was founded in November 16, 1993 by prof. habil. dr. Vladas Vekteris. In 2014, Associate Professor Artūras Kilikevičius was appointed the Head of the Laboratory. In 2017 the Research Laboratory of Experimental Mechanics was merged into the Institute of Mechanical Science.

In 2019, Assoc. Prof. Dr. Jonas Matijošius was appointed Head of the Laboratory.

RESEARCH AND INNOVATION

- Vibrations and Acoustics;
- Dynamic System Analysis;
- Control and Mechatronics;
- Signal Processing and Measurements.
- Applied Mechanics (theoretical, numerical, and experimental study of the response of solids and fluids to external forces).
- Measurement and dynamics of precise mechatronical systems.

LABORATORY CONTACTS

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SERVICES

The laboratory carries out vibrodiagnostics and monitoring of various mechanical systems: compressor stations, gas pumping stations, pumping stations, blowers, electric motors, internal combustion engines, turbines, turbo-motors, turbine generators, technological equipment (machine tools, etc.), railcars, locomotives, mechanical instruments, printing-polygraphic machines, automobiles, and their components. Solves the problem of identification, analysis and suppression of noise sources and carries out electro-acoustic studies. In addition, it carries out tribological loss studies in the power transmission sector, in transport and in general machinery production, identifies the causes of wear, recommends ways of increasing durability and the lubricant additives required, and energy-saving methods; measures the illuminance and selects the positioning of luminaires in workplaces, and carries out the balance of rotating parts in the workplace.

For the terms and conditions of these services, please contact us on weekdays by phone +370 5 251 2372, by mobile phone +370 677 55 819 or by e-mail: arturas.kilikevicius@vilniustech.lt

PROJECTS

Ongoing projects:

- INOVATYVIŲ APLINKŲ TAUSOJANČIŲ ĮRENGINIŲ KŪRIMO IR PROJEKTAVIMO KOMPETENCIJŲ CENTRAS
Project number: Nr. 01.2.2-CPVA-K-703-03-0016; amount of funding allocated to the project – 970 925,78 €
- AKUSTINIS ULTRASMULKIŲ DALELIŲ FILTRAS DUJŲ IŠMETIMO SISTEMOMS
Project number: Nr. 01.2.2-MITA-K-702-12-0007; amount of funding allocated to the project – 300 000,00 € (Vilnius TECH part 105 000,00 €)
- ATSINAUJINANTĮ KURĄ NAUDOJANČIŲ SISTEMŲ IŠMETAMUOSE DUJOSE ESANČIŲ KIETŲJŲ DALELIŲ AKUSTINĖS AGLOMERACIJOS TYRIMAI, Project number: Nr. 09.3.3-LMT-K-712-19-0026; amount of funding allocated to the project – 129 890,76 €.
- NAUJOS KIETŲJŲ DALELIŲ FILTRAVIMO TECHNOLOGIJOS SPRENDINIŲ KŪRIMAS (UAB „VILPROS“ PRAMONĖ“)
Project number: Nr. 01.2.1-LVPA-K-856-01-0256; amount of funding allocated to the project – 406 169,40 € (Vilnius TECH part 84 000,00 €).
- SLOPINIMO SISTEMOS PROJEKTAVIMAS IR DINAMINIŲ CHARAKTERISTIKŲ TYRIMAS (UAB „OKSALIS“)

Project number: Nr. 01.2.1-MITA-T-851-02-0160; mount of funding allocated to the project – 46 826,00 €.

- TRANSPORTO SISTEMŲ POVEIKIO ŽMOGAUS KOMFORTUI TYRIMAI (UAB "ALTAS KOMERCINIS TRANSPORTAS")
Project number: Nr. 01.2.1-MITA-T-851-02-0227; mount of funding allocated to the project – 46 826,00 €.
- BIOLOGINĖS KILMĖS ATSINAUJINANČIŲ DEGALŲ POVEIKIO VARIKLIO DARBO AGREGATAMS POVEIKIO TYRIMAS (UAB "BIOPOWER INDUSTRIES"), Project number: Nr. 01.2.1-MITA-T-851-02-0245; mount of funding allocated to the project – 46 826,00 €.
- VANDENS MINKŠTINIMO SISTEMOS KŪRIMAS IR TYRIMAI (UAB "TVARKDARYS")
Project number: Nr. 01.2.1-MITA-T-851-02-0291; mount of funding allocated to the project – 46 826,00 €.
- Inovatyvios integruotos kino teatro repertuaro prognozavimo ir valdymo sistemos kūrimas (Inno4Cinema),
Project number: Nr. 01.2.1-LVPA-K-856-01-0103, mount of funding allocated to the project – 641 021,47 Eur, Vilnius TECH part 10%)

Completed projects:

- „Interdisciplinary project based learning of space science and technology for university students“ (ESA Contract No. 4000115705/15/NL/NDe). 2016–2018 m.
- "Leonardo da Vinci" program. Project „UPTRONIC“. 2007–2010 m..
- "Investigation of Vibroacoustic characteristics of Machining centers ", 2014, VP2-1.3-AM-05-K "Inočekiai LT" project.
- „Investigation of the Vibration Characteristics of Different Types and Characteristics Safety Products“.2014, VP2-1.3-AM-05-K "Inočekiai LT" project.
- „Investigation of dynamic characteristics of the suppression system used in Firearm “. 2014, VP2-1.3-AM-05-K "Inočekiai LT" project.
- „Investigation of dynamic characteristics of the Solar cells and their fixing systems “. 2014, VP2-1.3-AM-05-K "Inočekiai LT" project.
- „Investigation of working conditions and designing methodology of vibration conveyors“. 2013, VP2-1.3-ŪM-04-K "Inočekiai LT" project.
- 2013 and 2014 Manager of Contests Summer Practice of the Lithuanian Science Council.
- „High Average Power Multiple-fiber Pumping Femtosecond Parametric Light Amplifier (INTEGRA)“. High-tech contract No.B-42/2012. 2012 m.

- Development of a mechatronic system for the measurement of accuracy of angular measuring systems. 2008 04 21 No. B-32/2008 contract with a VMS fund. 2008-2011.
- „Research and Development of the Precision Length Calibration Systems“, ATP program, VMS fund, Reg. No. B-07039. 2003-2005.
- Ultrasonic motors. Mechatronic piezo-systems. Mechatronic system control. 1997–2004 m. Korea Institute of Science and Technology (KIST). VPU (LEU)
- Piezoelectric actuators for Flip-Chip bonding technology. Germany. 2005–2010 m.
- The scientific work on 111 National Program on „High power piezoelectric motors research and development“. Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, China.
- Development and research of an ultrasonic bioreactor for algae cell ultrasonication.
- Micro sensors, micro actuators and controllers for mechatronics systems (Go-Smart).
- Development of ultrasonic piezo-mechanical systems for transporting, dividing and dosing liquids.
- Improving the training of mechatronics-related engineering specialists, improving the skills of instructors, promoting mobility and student inter-institutional co-operation.
- Development of mechatronics related areas of science and studies.