

RESEARCH LABORATORY OF NUMERICAL SIMULATION

ABOUT LABORATORY

The Research Laboratory of Numerical Simulation is a division of the Institute of Mechanical Science, established in 2012.

Prof. Dr. Algirdas Maknickas was appointed the Head of the Laboratory in 2019.

The staff of the Laboratory:

- Algirdas Maknickas (Chief Research Fellow)
- Rimantas Kačianauskas (Chief Research Fellow)
- Raimondas Jasevičius (Chief Research Fellow)
- Darius Vainorius (Research Fellow)

RESEARCH AND INNOVATION

- Particle research
- Research of Biomechanical Systems
- Research of Biological Tissues
- Development and application of information technology, statistical analysis and modelling of physical processes
- Discrete element models of mechanical multiphysics media and structures.

LABORATORY CONTACTS

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SERVICES

- Performs fundamental and applied research in numerical modelling
- Participates in international research programmes and maintains contacts with research centres in foreign countries
- Develops and implements new software for modelling, research and design of engineering systems and technological processes, and provides consultancy services
- Uses the results of scientific work to implement them in practice, and makes innovative proposals.

For the terms and conditions of these services, please contact us on weekdays by phone: +370 5 251 2372, by mobile phone +370 604 77 700 or by email:

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PROJECTS

- EU East-West Cooperation Program "Access to Large Scale Facilities". „Shaking Table Tests of the High-Strength Reinforced Concrete Columns“. Coordinator: National Laboratory of Civil Engineering (LNEC), Portugal. 1998-1999..
- Nordic Energy Program. “Computed Aided Modelling of District Heating“. Lund Institute of Technology, Sweden, 2001-2002.
- PHARE program. Project “Assistance program to VATESI and its TSOs in structural dynamics analysis“. VGTU part “Seismic analysis of Ignalina NPP reactor building“. Coordinator: VTT (Finland). Participants: Scanscott (Sweden); SIP (Sweden); Crea Konsultants (UK); Lithuanian Energy Institute (Lithuania); Kaunas University of Technology (Lithuania); Geology Institute(Lithuania). 2003-2005.
- FP-5 program, CURE "Centre for Urban Construction and Rehabilitation: Technology Transfer, Research and Education". Project Coordinator: Technical University Gdansk. 2002-2006.
- FP-7 project [NMP.2011.4.0-5] INNVIN „Innovative materials solutions for Transport, Energy and Biomedical sectors by strengthening integration and enhancing research dynamics of KMM-VIN“. Coordinator: The European Virtual Institute on Knowledge-based multifunctional materials (KMM-VIN), Belgium, 2012 – 2015.
- A Polish-Lithuanian joint research project of Academies of Sciences. “Discrete element modelling of granular materials and particulates. Partner: Institute of Fundamental Technological Research of Polish Academy of Sciences (IPPT PAN), Poland, 2013-2016.

- Lithuanian State Science and Studies Foundation. “Strong magnetic and electric field effects in quantum structures of manganese oxide thin layers of Investigation”, Coordinator: Institute of Semi-Conductor Physics. VGTU part “Gas shock tube membranes decay and strong magnetic field generator of the induction coil magnetic-mechanical model of”. 2002-2004.
- Lithuanian State Science and Studies Foundation. "Unsteady thermo-hydraulic processes of heat supply networks research". Coordinator: VGTU, partner: Lithuanian Energy Institute. 2005-2006.
- Lithuanian State Science and Studies Foundation. Methodology of non-designed events in Ignalinos NPP I and II energy buildings”, VGTU part: “Evaluation of seismic hazards for energy buildings”. Coordinator: Lithuanian Energy Institute, partner: Vytautas Magnus university, 2007-2008,
- Lithuanian State Science and Studies Foundation. “Multi-spherical model of ellipsoidal particle and its implementation of DEM program”. Contractor VGTU. 2008 2009.
- RI-223807, BALTICGRID-II, BalticGrid Second Phase, Seventh Framework Programme, in the 'Research infrastructures' activity area, FP7-INFRA-2007-1.2.3: e-Science Grid infrastructures, 1/05/2008 to 30/04/2010, Scientific representative of the Project's co-ordinator: Dr Åke Edlund, KTH.
- 2013-2015 Project of Lithuanian Research Council "Modeling of acoustic effects of aerosol particles system by discrete element method". application registration number. MIM-13204, the term: 2013-2015. CEO: Mr Kačianauskas participant A.A. Maknickas Value: 81557 EUR
- 2014-2016 Project of Lithuanian Research Council of scientists groups "Simulation of Blood flow through the aortic valve for an individual patients" (Reg. MIM-14414, contract no. MIM-052/2014). 2014.03-2016.12. Financing amount