

**DEPARTMENT OF MECHANICS**  
**<http://aladin.elf.stuba.sk/Katedry/KMECH/>**

**Head of Department**

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**I. STAFF**

Professors	Prof. Ing. Justín Murín, DrSc., Prof. Ing. Viktor Ferencey, CSc.
Associate Professors	Doc. Ing. Vladimír Kutiš, PhD.
Assistant Professors	Ing. Andrej Kalaš, PhD., Ing. Vladimír Goga, PhD., Ing. Tibor Sedlár, Ing. Juraj Matej, PhD., Ing. Viktor Královič
Research Workers	Ing. Róbert Fric, PhD.
Part-time Workers	Prof. Ing. Miroslav Vereš, PhD., Ing. Stanislav Stančík, Ing. Juraj Paulech
Technical Staff	Katarína Beringerová, Katarína Kermietová (secretary), František Erdödy
PhD. Students	Ing. Rastislav Ďuriš, Ing. Rastislav Belák, Ing. Viktor Královič, Dipl. Ing. Rolf Seemann, Dipl. Ing. Stepha Kugler, Ing. Tibor Sedlár, Ing. Juraj Paulech, Ing. Stanislav Stančík, Ing. Vladimír Staňák, Ing. Martin Bugár, Ing. Martin Kandl, Ing. Juraj Hrabovský, Ing. Tomáš Jediný

**II. EQUIPMENT**

**II.1 Teaching and Research Laboratories**

- Laboratory of Thermopower Machines and Devices
- Laboratory of Mechanics of Strength and Deformable Bodies
- Centre of Designing and Computational Mechanics

**II.2 Special Measuring Instruments, Software and Computers**

- Insert Press Monitoring System DMF-P V3
- Boiler Gas Analyser Industrial Combustion Optimiser Neotronics
- Experimental Impulse Turbine F800 - Hilton, Ltd. England
- Advantech PC-LabCard PCI 1710 with equipment
- Digital Oscilloscope RIGOL DS1052E
- Waveform Generator RIGOL DG1012
- Horizon Fuel Cell Software Adaptor
- Renewable Energy Education Science Set
- IR Thermometer FLUKE 572
- Mathematica 6
- Matlab R14
- Catia V5
- SolidEdge V20
- NX5
- ANSYS Multiphysics
- MSC.Software
- AutoCAD
- IQ – 100

**III. TEACHING****III.1 Undergraduate Study (Bc.)**

Subject, semester, hours per week for lectures and for seminars or practical exercises, name of the lecturer.

Basis of Engineering and Technical Documentation (1st sem., 2-2h)		M. Vereš T. Sedlár
CAD in Technical Documentation	(opt. sem., 1-3h)	A. Kalaš
Mechanics (for Electrotechnics)	(5th sem., 3-2h)	J. Murín
Mechanics (for Automotive Electronics)	(6th sem., 2-2h)	J. Murín
Introduction to Modelling and Simulation	(5th sem., 3-2h)	V. Kutiš A. Beláň
Structural Elements and Systems	(5th sem., 2-2h)	M. Vereš
Design of Vehicles	(6th sem., 2-2h)	V. Ferencey
Continuum Mechanics	(5th sem., 2-2h)	J. Murín

**Distance study**

Basis of Engineering and Technical Documentation (1st sem.)		T. Sedlár
Mechanics	(5th sem.)	J. Murín
Introduction to Modelling and Simulation	(5th sem.)	V. Kutiš A. Beláň

**III.2 Graduate Study (Ing.)**

Nuclear Power Facilities	(1st sem., 2-2h)	V. Kutiš
CAE of Mechatronic Systems	(1st sem., 3-2h)	V. Goga
Applied Mechanics	(1st sem., 2-2h)	J. Murín
Vehicle Dynamics	(1st sem., 2-2h)	V. Ferencey
Designing of Luminaires	(2nd sem., 3-2h)	R. Fric
Designing by Higher CAD Systems	(2nd sem., 1-3h)	R. Fric
Numerical Solution of Field Theory Problems	(2nd sem., 3-2h)	J. Murín
Finite Element Methods for Mechatronics	(1st sem., 2-3h)	J. Murín
Computational Solution of Field Theory Problem	(2nd sem., 3-2h)	J. Murín
Power machines	(2nd sem., 2-2h)	V. Ferencey

**Distance study**

CAE of Mechatronic Systems	(1st sem.)	V. Goga
Numerical Solution of Field Theory Problems	(2nd sem.)	J. Murín
Applied Mechanics	(1st sem.)	J. Murín

#### **IV. RESEARCH PROJECTS**

- Development of the New Multiphysical Beam Finite Elements with Composite or Functionally Graded Materials. VEGA 1/0093/10 (J. Murín)
- Research of Hybrid Powertrain Control Strategies of Vehicle in the Term of Ecological Parameters, Economical Efficiency and Vehicle Performances. VEGA 1/0627/10 (V. Ferencey)
- Support for Modelling and Simulations of Cooperation of Advanced Hybrid Energy Sources in Mechatronic Systems. OVVČ/2010 (V. Staňák)
- Use of Computer Aided Engineering Systems to Solve Mechatronic Systems OVVČ/2010 (V. Goga)
- Advanced GaN Mechanical Sensors for Extreme Conditions SK-FR-0041-09 (principal investigator: T. Lalinsky - ELU SAV, co-workers: V. Kutiš - KMECH FEI STU)
- National Centre for Research and Application of Renewable Energy Sources (ITMS: 26240120028), supported by the Research & Development Operational Programme funded by the ERDF (principal investigators F. Janiček, Ľ. Jelemenský) Activity 3.2 (principal investigator J. Murín)

#### **V. COOPERATION**

##### **V.1 Cooperation in Slovakia**

- VÚJE jsc, Trnava
- Sova jsc, Bratislava
- JE Jaslovské Bohunice
- JE Mochovce
- Sjf ŽU Žilina
- Škoda Auto Slovakia, Bratislava
- Institute of Construction and Architecture, Slovak Academy of Sciences
- IPT Pezinok
- OMS Senica
- ZSE jsc
- SEZ Dolný Kubín
- Ministry of Interior of the Slovak Republic
- Defense and Strategy Studies Institute jsc
- Institute of Electrical Engineering, Slovak Academy of Sciences
- International Laser Centre, Bratislava
- Armed Forces Academy of General Milan Rastislav Štefánik, Liptovský Mikuláš
- Alexander Dubček University of Trenčín
- Technical University of Košice

##### **V.2 International Cooperation**

- Energovýzkum Ltd., Brno, Czech Republic
- Vienna University of Technology, Austria
- Technical University Ilmenau, Germany
- University College of Swansea, United Kingdom
- FSB University Zagreb, Croatia
- TU Rijeka, Croatia
- TU Novi Sad, Serbia
- TU Niš, Serbia
- Brno University of Technology, Czech Republic
- University of West Bohemia, Czech Republic
- Military School, Brno, Czech Republic

**V.3 Membership in Slovak Organizations and Societies**

- Co-chairman in Slovak Society for Mechanics (J. Murín)
- Slovak Society for Mechanics (V. Kutiš)
- Vice President of Association of the Defence Industry of the Slovak Republic (V. Ferencey)

**V.4 Membership in International Organizations and Societies**

- Chair of Slovak branch of Central European Association for Computational Mechanics (CEACM) (J. Murín)
- European Community on Computational Methods in Applied Sciences (ECCOMAS) (J. Murín)
- International Association for Computational Mechanics (IACM) (J. Murín)
- Central European Association for Computational Mechanics (CEACM) (V. Kutiš)
- Institute for Mechanics of Materials and Structures, TU Vienna, Austria (J. Murín)

**VI. THESES****VI.1 Masters Theses**

Masters theses supervised at the Department of Mechanics. The names of supervisors are in brackets.

- [1] Mucha, P.: Creating Electro-Thermal-structural Coupled Field of FEM in Mathematica (V. Kutiš)
- [2] Hrabovský, J.: Solution of Coupled Electric-Thermal-Structural Problem Using New Finite Element with Spatial Variation of Material Properties (J. Murín)
- [3] Jediný, T.: Electronic Differential Lock – EDS System (V. Goga)
- [4] Kikta, P.: Equipment Design for Testing Absorption Properties of Materials (V. Goga)
- [5] Sojčák, J.: Design Traction and Geometry Optimalization of the Selected Member of the Crank Mechanism (V. Goga)

**VI.2 PhD Theses**

- [1] Ďuriš, R.: Solution of Non-linear Problems with Full Non-linear Stiffness Matrices (J. Murín)
- [2] Kugler, S.: Development of a Laterally Pressed Quadrilateral Shell Element (J. Murín)
- [3] Seemann, R.: Modelling and Optimisation of a Mechanical Structure for a Rotating Ion-Optical System (J. Murín, M. Pavlovič)
- [4] Matej, J.: Optimization of Power Distribution in Parallel Hybrid Vehicle (V. Ferencey)

**VII. OTHER ACTIVITIES**

- Membership in the editorial board of journal: Mechanical Engineering (J. Murín)
- Membership in the Scientific Editorial Advisory Board of Journal: Engineering Review, Croatia (M. Vereš)
- Expert in Mechanical Engineering (T. Sedlár)
- Participation with the Stuba Green Team on the Formula Student Electric Race Car Project. (V. Staňák)

**VIII. PUBLICATIONS****VIII.1 Journals**

- [1] BUGÁR, M. - STAŇÁK, V.: Energy Management of Fuel Cell / Battery / Supercapacitor Hybrid Power Source for Vehicle Applications. In: EE časopis pre elektrotechniku a energetiku. - ISSN 1335-2547. - Vol. 16, Special Issue (2010), p. 185-188. (in English)

- [2] FERENCEY, V.: Fuel Cells - Electricity Source for Motor Vehicles. In: EE časopis pre elektrotechniku a energetiku. - ISSN 1335-2547. - Vol. 16, Special Issue (2010), p. 194-198. (in English)
- [3] FRIC, R.: Light Source Thermal Analysis I - Sodium High-Pressure Discharge Lamp. In: Posterus.sk. - ISSN 1338-0087. - November (2010), <http://www.posterus.sk/?p=9314>. (in English)
- [4] FRIC, R.: Light Source Thermal Analysis II - Incandescent Lamp. In: Posterus.sk. - ISSN 1338-0087. - December (2010), <http://www.posterus.sk/?p=9400>. (in English)
- [5] GOGA, V.: Cellular Solids - Foam Materials I. Introduction, Structure and Applications. In: Posterus.sk. - ISSN 1338-0087. - July (2010), <http://www.posterus.sk/?p=7861>. (in Slovak)
- [6] GOGA, V.: Cellular Solids - Foam Materials II. Manufacturing of Cellular Solids. In: Posterus.sk. - ISSN 1338-0087. - July (2010), <http://www.posterus.sk/?m=201007>. (in Slovak)
- [7] GOGA, V.: Cellular Solids - Foam Materials III. Properties. In: Posterus.sk. - ISSN 1338-0087. - September (2010), <http://www.posterus.sk/?p=8404>. (in Slovak)
- [8] GOGA, V.: Measurement of the Energy Absorption Capability of Polyurethane Foam. In: Posterus.sk. - ISSN 1338-0087. - March (2010), <http://www.posterus.sk/> (in English)
- [9] GOGA, V.: Testing and Application of New Phenomenological Material Model for Foam Materials. In: Posterus.sk. - ISSN 1338-0087. - January (2010), <http://www.posterus.sk/?p=3923>. (in English)
- [10] MATEJ, J.: Powerflows in Hybrid Vehicles. In: Posterus.sk. - ISSN 1338-0087. - November (2010), <http://www.posterus.sk/?p=913>. (in English)
- [11] MATEJ, J. - BEBJAK, J.: Braking Simulation of Vehicle. In: Posterus.sk. - ISSN 1338-0087. - July (2010), <http://www.posterus.sk/?p=8012>. (in Slovak)
- [12] MATEJ, J. - GOGA, V. - JEDINÝ, T.: Virtual Prototyping Utilized in Industry Production. In: Posterus.sk. - ISSN 1338-0087. - December (2010), <http://www.posterus.sk/?p=9438>. (in English)
- [13] KEŤÚČIK, M. - SEDLÁR, T.: Mechatronical Device for Training of the Service Dogs 2. In: Metalurgija. Metallurgy. - ISSN 0543-5846. - Vol. 49, No. 2 (2010), p. 337-340. (in English)
- [14] KOMPIŠ, V. - VANČO, M. - FERENCEY, V.: Shock Waves Propagation in Composite Materials. In: Strojnícky časopis = Journal of Mechanical Engineering. - ISSN 0039-2472. - Vol. 61, No. 2 (2010), p. 73-87. (in English)
- [15] KRÁLOVIČ, V. - PAULECH, J. - STANČÍK, S.: Fluid-Thermal Analysis of Bundle Conductors. In: EE časopis pre elektrotechniku a energetiku. - ISSN 1335-2547. - Vol. 16, Special Issue (2010), p. 226-229. (in English)
- [16] KUGLER, S. - FOTIU, P.A. - MURÍN, J.: A Highly Efficient Membrane Finite Element with Drilling Degrees of Freedom. In: Acta Mechanica. - ISSN 0001-5970. - Vol. 213, Nr. 3-4 (2010), p. 323-348. (in English)
- [17] MURÍN, J. - AMINBAGHAI, M. - KUTIŠ, V.: Exact Solution of the Bending Vibration Problem of FGM Beams with Variation of Materials Properties. In: Engineering Structures. - ISSN 0141-0296. - Vol. 32 (2010), p. 1631-1640. (in English)

- [18] MURÍN, J. - SEDLÁR, T. - KLÚČIK, M. - GOGA, V.: Mechatronical Device for Training of the Service Dogs 1. In: *Metalurgija. Metallurgy.* - ISSN 0543-5846. - Vol. 49, No. 2 (2010), p. 400-403. (in English)
- [19] O'BOY, D.J. - KRYLOV, V.V. - KRÁLOVIČ, V.: Damping of Flexural Vibrations in Rectangular Plates Using the Acoustic Black Hole Effect. In: *Journal of Sound and Vibration.* - ISSN 0022-460X. - Vol. 329 (2010), p. 4672-4688. (in English)
- [20] SEEMANN, R. - PAVLOVIČ, M. - MURÍN, J.: Methodology for Assessment of Beam-Transport Accuracy at Rotating Ion-Therapy Gantries. Part IV. In: *Metrológia a skúšobníctvo.* - ISSN 1335-2768. - Vol. 15, No. 1 (2010), p. 3-11. (in English)
- [21] SEEMANN, R. - PAVLOVIČ, M. - MURÍN, J.: Methodology for Assessment of Beam-Transport Accuracy at Rotating Ion-Therapy Gantries. Part V. In: *Metrológia a skúšobníctvo.* - ISSN 1335-2768. - Vol. 15, No. 3 (2010), p. 3-10. (in English)
- [22] STAŇÁK, V. - BUGÁR, M.: Analysis and Simulation of Energy Recovery in Modern Electric Vehicles. In: *EE časopis pre elektrotechniku a energetiku.* - ISSN 1335-2547. - Vol. 16, Special Issue (2010), p. 244-247. (in English)
- [23] STANČÍK, S. - FRIC, R. - PAULECH, J. - KUTIŠ, V. - MURÍN, J. - CIRÁK, J.: Electro-Thermal and Fluidized-Thermal Analysis of the Rope Coupling. In: *Energetika.* - ISSN 0375-8842. - Vol. 60 (2010), p. 569-572. (in Slovak)
- [24] VANKO, G. - DRŽÍK, M. - VALLO, M. - LALINSKÝ, T. - KUTIŠ, V. - STANČÍK, S. - RÝGER, I. - KOSTIČ, I.: AlGaIn/GaN C-HEMT Structures for Dynamic Stress Detection. In: *Procedia Engineering.* - ISSN 1877-7058. - Vol. 5 (2010), p. 1405-1408. (in English)

## VIII.2 Conference Proceedings

- [1] AMINBAGHAI, M. - MURÍN, J. - KUTIŠ, V.: Free Vibration of the Multilayer FGM Beams under Longitudinal Variable Elastic Foundation with Effect of Large Axial Force. In: *New Trends in Statics and Dynamics of Buildings: 8th International Conference.* Bratislava, Slovak Republic, 21.-22.10.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3373-1. - p. 1-8. (in English)
- [2] BELÁK, R. - KUTIŠ, V.: Piezoelectric Beam Element for Finite Element Method. In: *ELITECH'10: 12th Conference of Doctoral Students.* Bratislava, Slovak Republic, 26.5.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3303-8. - CD-Rom. (in English)
- [3] BENKOVSKÝ, P. - STAŇÁK, V.: Implementation of Electric Propulsion in Small Race Car. In: *ELITECH'10: 12th Conference of Doctoral Students.* Bratislava, Slovak Republic, 26.5.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3303-8. - CD-Rom. (in English)
- [4] BUGÁR, M.: Energy Budget Optimization of Electric Vehicle Driving Dynamics. In: *ELITECH'10: 12th Conference of Doctoral Students.* Bratislava, Slovak Republic, 26.5.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3303-8. - CD-Rom. (in English)
- [5] BUGÁR, M. - STAŇÁK, V. - FERENČEY, V.: Influence of Implementation of Electric Drive in the Vehicle on its Reliability in Operation. In: *9th International Technical Systems Degradation Conference: Liptovský Mikuláš, Slovak Republic, 7.-10.4.2010.* - Lublin: Wydawnictwo-Drukarnia Liber Duo s.c., 2010. - ISBN 978-83-911726-8-1. (in English)

- [6] BUGÁR, M. - STAŇÁK, V. - FERENCEY, V.: Optimal Power Management Design for Battery Powered Electric City Bus. In: Mechanical Engineering 2010: 13th International Conference on the Occasion of the 70th Anniversary of the Beginning of Education of Mechanical Engineering Students at the Slovak University of Technology in Bratislava. Bratislava, Slovak Republic, 21.10.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3304-5. - p. 6-12. (in English)
- [7] BUGÁR, M. - STAŇÁK, V. - FERENCEY, V.: Optimized Design of Hybrid Powertrain for Unmanned Light Fighting Vehicle. In: Armament and Technics of Land Forces 2010: 16th International Conference. Liptovský Mikuláš, Slovak Republic, 10.-11.11.2010. - Liptovský Mikuláš: Armed Forces Academy, 2010. - ISBN 978-80-8040-409-3. - CD-Rom. (in English)
- [8] ĎURIŠ, I. - GOGA, V.: Electronic and Mechanical Systems of Aircraft Landing Gear and Simulation of Landing Gear Retraction. In: ŠVOČ 2010: Proceedings of Selected Works. - Bratislava: FEI STU, 2010. - ISBN 978-80-227-3286-4. - CD-Rom. (in Slovak)
- [9] ĎURIŠ, R. - MURÍN, J.: 2D Geometric Nonlinear Beam Finite Element. In: Computational Mechanics 2010: 26th Conference with International Participation. Hrad Nečtiny, Czech Republic, 8.-10.11.2010. - Pilsen: University of West Bohemia, 2010. - ISBN 978-80-7043-919-7. (in English)
- [10] ĎURIŠ, R. - MURÍN, J.: 2D Geometric Nonlinear Beam Finite Element with Full Nonlinearised Stiffness Matrices. In: ECCM 2010: 4th European Conference on Computational Mechanics. Solid, Structures and Coupled Problems in Engineering. Paris, France, 16.-21.5.2010. - Paris: Computational Structural Mechanics Association, 2010. - CD-Rom. (in English)
- [11] FERENCEY, V.: Development and Utilization of Unmanned Ground Vehicles. In: Armament and Technics of Land Forces 2010: 16th International Conference. Liptovský Mikuláš, Slovak Republic, 10.-11.11.2010. - Liptovský Mikuláš: Armed Forces Academy, 2010. - ISBN 978-80-8040-409-3. - p. 44-47. (in English)
- [12] HERETÍK, P. - MURÍN, J.: Modelling of the Temperature Rise of the Atomic Reactor Fuel Cell. In: ŠVOČ 2010: Proceedings of Selected Works. - Bratislava: STU, 2010. - ISBN 978-80-227-3286-4. - CD-Rom. (in Slovak)
- [13] HRABOVSKÝ, J. - MURÍN, J.: Solution of Coupled Electric - Thermal - Structural Problem Using New Finite Element with Spatial Variation of Material Properties. In: ŠVOČ 2010: Proceedings of Selected Works. - Bratislava: STU, 2010. - ISBN 978-80-227-3286-4. - CD-Rom. (in Slovak)
- [14] KUGLER, S. - FOTIU, P.A. - MURÍN, J.: The Stress in Thickness Direction in Simulations with Shell Elements. In: 10th International Conference on Computational Structures Technology: Valencia, Spain, 14.-17.9.2010. - Stirlingshire: Civil-Comp-Press, 2010. - ISBN 978-1-905088-37-9. - CD-Rom. (in English)
- [15] MURÍN, J. - AMINBAGHAI, M. - KUTIŠ, V.: Free Vibration of the FGM-Beams with Continuous Transversal Symmetric and Longitudinal Variation of Material Properties with Effect of Large Axial Force. In: ECCM 2010: 4th European Conference on Computational Mechanics. Solid, Structures and Coupled Problems in Engineering. Paris, France, 16.-21.5.2010. - Paris: Computational Structural Mechanics Association, 2010. - CD-Rom. (in English)
- [16] MURÍN, J. - AMINBAGHAI, M. - KUTIŠ, V.: Free Vibration of the Multilayer FGM Beams under Longitudinal Variable Elastic Foundation. In: New Trends in Statics and Dynamics of Buildings: 8th International Conference. Bratislava, Slovak Republic, 21.-22.10.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3373-1. - p. 121-128. (in English)

- [17] MURÍN, J. - KUTIŠ, V. - PAULECH, J.: Multiphysics Analysis of a Functionally Graded Material Conductor with Spatial Variation of Material Properties. In: 10th International Conference on Computational Structures Technology: Valencia, Spain, 14.-17.9.2010. - Stirlingshire: Civil-Comp-Press, 2010. - ISBN 978-1-905088-37-9. - CD-Rom. (in English)
- [18] NOGE, F. - FERENČEY, V.: Systems of Electronically Controlled Automotive Suspension. In: ŠVOČ 2010: Proceedings of Selected Works. - Bratislava: FEI STU, 2010. - ISBN 978-80-227-3286-4. - CD-Rom. (in Slovak)
- [19] PAULECH, J. - LAGO, J. - KUTIŠ, V. - STANČÍK, S. - FRIC, R. - MURÍN, J.: CFD Simulation of Air Flow around Overhead Power Lines. In: Power Engineering 2010. Renewable Energy Sources: 1st International Scientific Conference. Tatranské Matliare, Slovak Republic, 18.-20. 5. 2010. - Bratislava: STU, 2010. - ISBN 978-80-89402-24-3, CD-Rom[9]. (in English)
- [20] PAULECH, J.: Influence of Ambient Conditions on Measuring of Electric Field with Capacity Probe. In: ELITECH'10: 12th Conference of Doctoral Students. Bratislava, Slovak Republic, 26.5.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3303-8. - CD-Rom. (in English)
- [21] STANÁK, V.: Systems of Electric Braking of Vehicles with Energy Recuperation. In: ELITECH'10: 12th Conference of Doctoral Students. Bratislava, Slovak Republic, 26.5.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3303-8. - CD-Rom. (in English)
- [22] STANČÍK, S.: Analysis of Temperature Rise in Power Line Joints: the Qualitative Comparison. In: ELITECH'10: 12th Conference of Doctoral Students. Bratislava, Slovak Republic, 26.5.2010. - Bratislava: STU, 2010. - ISBN 978-80-227-3303-8. - CD-Rom. (in English)
- [23] STANČÍK, S. - FRIC, R. - PAULECH, J. - KUTIŠ, V. - MURÍN, J.: Electro-Thermal and Fluid-Thermal Analysis of Temperature Rise of the Power Line Conductor Joints. In: Power Engineering 2010. Renewable Energy Sources: 1st International Scientific Conference. Tatranské Matliare, Slovak Republic, 18.-20. 5. 2010. - Bratislava: STU, 2010. - ISBN 978-80-89402-24-3. - CD-Rom. (in English)
- [24] STANČÍK, S. - FRIC, R. - PAULECH, J. - KUTIŠ, V. - MURÍN, J.: Possibilities of Computer Modelling in the National Center for Research and Application for Renewable Energy Sources. In: Power Engineering 2010. Renewable Energy Sources: 1st International Scientific Conference. Tatranské Matliare, Slovak Republic, 18.-20. 5. 2010. - Bratislava: STU, 2010. - ISBN 978-80-89402-24-3. - CD-Rom. (in English)

### VIII.3 Textbook

- [1] KUTIŠ, V.: Introduction to Modeling and Simulation. - Bratislava: STU, 2010. - 133 p. - ISBN 978-80-227-3345-8. (in Slovak)

### VIII.4 Patent

- [1] KALAŠ, A.: Impact Forces Signaling Device for Stationary Vehicle: Patent number 5406. - 4 p. - Mediation Date: 17.2.2010. (in Slovak)