

## **Faculty of Mechanical Engineering (GPK)**

The Faculty of Mechanical Engineering decisively represents the mechanical engineering activities of the country's economy whilst keeping a watchful eye on world trends. Undergraduate training includes mechanical engineering, energy engineering, mechatronics, industrial product design, and design areas, upon which our six master courses are built. Surveys show that our graduate engineering professionals are the most sought-after in the industry, and possess the greatest prestige if they have received their diploma at the Mechanical Engineering Faculty of BME.

GPK is the mastermind behind the Sustainable Energy area of the university research program of BME. Its strategic research areas are related to the threefold requirements of environment and climate protection, supply security, and competitiveness as follows. Energy efficiency, energy conservation, carbon neutral technologies, knowledge in support of decision making. The faculty priority of carrying out energy researches is indicated by the fact that it provides an essential research base for each department of the Faculty.

In the Vehicle Technology, Transport and Logistics project, the analysis of fluid mechanical equipment, fuel supply systems and other engineering subsystems are in the forefront of our research. In the Biotechnology, Health and Environmental Protection project, our primary task includes the modelling of living organisms in relation to the engineering methods of medicine. In the Intelligent Environment and E-Technologies project the research objective of our Faculty is to seek solutions that are capable of providing real-time management of complex engineering and economic systems in volatile, uncertainty-laden environments with need to balance optimization, autonomy and cooperation. The direction of Faculty researches in the Nanophysics, Nanotechnology and Materials Science project is the analysis of the characteristics improving the effects of nanoadditives, and the elaboration of hybridization procedures. The surface modification procedures are based on electrochemical, fast heating and micro-cutting procedures.

The Faculty infrastructure comprises of the equipment at the laboratory and workshop premises. The development of these, in keeping up with modern technologies and with the support of the industry, is the true priority of the Faculty.