
Grants

Analysis of tram-pedestrian traffic collision, validation of simulation models

The project is co-financed by the European Union

Registration Number: CZ.02.1.01/0.0/0.0/16_026/0008401

The aim of the project is to increase the safety of trams in relation to pedestrians. The project will solve both passive and active safety tasks. A methodology of tram-pedestrian impact tests with a test dummy will be developed. Using a larger number of crash tests, a simulation model of the tram-pedestrian collision will be created and validated. The equipment and methodology will be used for experimental verification of the benefits, functionality and necessity of the automatic obstacle braking system.

Total cost: 43 449 413,68 Kč

Project realization: 1. 9. 2018 – 31. 8. 2022

Garant of project: doc. PaedDr. Karel Jelen, CSc.

Partners: VÚKV a.s., ŠKODA TRANSPORTATION a.s., Advanced Engineering s.r.o.

Applications of tissue biofluidicity in innovation of biomaterials (GAČR - main recipient ÚT AVČR). Basic research on:

- Biomechanics of spine with clinical and ergonomic applications
- Accentuation of cerebrospinal fluid and its relationship with haemodynamics, respiratory dynamics and intersegmental movement
- Targeted output into clinical and physiotherapeutic applications with the outlook for biomaterial nanotechnology applications

Materials with form memory for blood vessels substitutions (GAČR - main recipient ÚT AVČR). Basic research on:

- Questions of biocompatibility
- Analysis of laboratory samples

Biomaterials and contact boundary - detection and analysis of deforming situations (GAČR - main recipient FSI ČVUT). Basic research on:

- Development of methods for measuring non-electric parameters characteristic of human motion and for contact stress-force transfer
- Testing of methods developed by ČVUT for sport and physiotherapeutic applications

Formation of neuro-information bases and extraction of relevant findings (MŠMT - main recipient FD ČVUT). Basic research on:

- Collection and elaboration of information on resolution of problems with reliability of man-machine communication
- The consequences of cranial trauma and pain (??) on the reliability of man-machine tandem (analysis of selected examples)
- Ergonomic and regime interference

Department holds regular scientific workshops for a wider academic community, with keynote lectures given by international and local experts.