6 LABORATORY OF ELECTRIC VEHICLE DRIVE SYSTEMS

Faculty of Engineering, Research Centre of Vehicle Industry

HEAD OF LABORATORY
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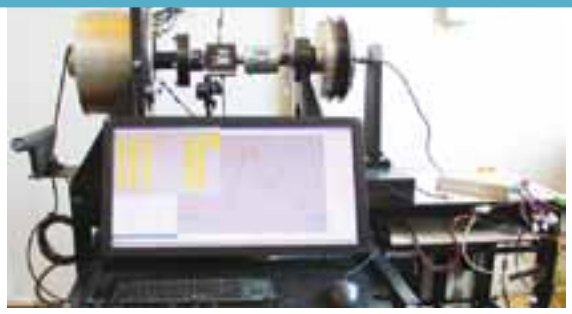
LABORATORY PROFILE

- Year of foundation: 1976
- Capacity (working hours/month): 8 working hours / month available capacity in addition to the educational and research activities
- Main fields of activities: The activities in the laboratory belong to 2 groups: education and research and development. As for education, we provide practice-oriented courses on electrical and control systems applied in alternative fuel vehicles and all-electric vehicles. The laboratory supports the research and development activities of electric road vehicles on their drive systems with measurements and series of measurements on a test-bench
- Technical Specifications: The laboratory has room for a maximum 12 students at a time to participate in laboratory lessons and to use the equipment transformed especially for educational purposes. There is a separated room available for the research and development activities and it is equipped with the devices needed for the room's special task
- Services provided: In the off hours of educational training of the laboratory we can provide support in the field of research and development building upon the laboratory equipment and the specialized knowledge our staff has
- References:
  - Supporting the development of E-VAN Hybrid vehicle's drive train, electric motors and electronics
  - Supporting the development of SZEvo 5 – solar driven vehicle's drive train and electronics

Equipment and software of the laboratory

OWN-DEVELOPED TEST-BENCH WITH ELECTRIC BRAKE

- Year of Development: 2012-2013
- PSM and other low-powered electric motors can be driven, braked and tested on the test-bench using preset values
- Full computational support and registration functions are provided for the system
- Performance: max. 30 kW
- BLDC/three-phase synchronous motor tester
  - 50 kW/400V DC
- 5 electrical inspection frames?
  - 5x2 units 11/23 kW machine
  - suitable for educational and research purposes



- ABB frequency drive, with engine
  - Pmax = 2,5 kW
- Asynchronous motor drive
  - Pmax = 2,5 kW
- AMC drive control (6 units)
- AMC computer-controlled sinus drive control system (1 unit)
- MAXELL 80 F Supercapacitator (2 units)
- 4 Analogue storage oscilloscope