

DEPARTMENT OF ELECTRICAL MACHINES AND DEVICES

<http://www.kesp.elf.stuba.sk/>

Head of Department

Doc. Ing. Ľudovít Hüttner, PhD.

e-mail: ludovit.huttner@stuba.sk

Tel.: ++421-2-602 91 471

Fax : ++421-2-654 20 415

STAFF

Professors	Prof. Ing. Ladislav Hruškovič, DrSc., Prof. Ing. Ľudovít Klug, PhD.
Associate Professors	Doc. Ing. Ľudovít Hüttner, PhD., Doc. Ing. Neitus Lipták, PhD., Doc. Ing. Ferdinand Valent, PhD.
Assistant Professors	Ing. Ladislav Borba, PhD., Ing. Ľudovít Jurčacko
Technical Staff	Jana Jusková (secretary), Jozef Hubač
PhD. Students	Ing. Michal Duč-Anci, Ing. Branislav Bachratý, Ing. Vladimír Kujan, Ing. Dárius Tavalý

II. EQUIPMENT

II.1 Teaching and Research Laboratories

- Laboratory for Testing and Measurement of Electric Machines
- Laboratory of Special Electric Machines
- Laboratory of Short Circuit Tests (with a high current generator source 35 kA, 2 MVA, 440 V)
- Laboratory of Short Circuit Tests (with a capacitor source)
- Laboratory of Controlled Drives and Servosystems
- Laboratory of Power Electronics
- Laboratory of PLCs
- SUN Workstations equipped workroom for CAMS and FEM experiments

II.2 Special Measuring Instruments and Computers

- Lucas-Nülle didactic equipment for subjects Power Electronics and Controlled Drives
- SIMOVERT, SIMOREG and VONSCH power converters
- State accredited Testing Laboratory of FEI STU for Electric Apparatus (SLEPr)
- Laboratory stands with digital signal processors TMS 320 C 50
- PLA Workplace

III. TEACHING

III.1 Undergraduate Study (Bc.)

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

Power Elements and Systems	(3rd sem., 3-2h)	Ľ.Hüttner, F.Janiček
Power Elements and Systems	(4th sem., 3-2h)	Ľ.Hüttner, F.Janiček
Electric Machines I	(5th sem., 3-2h)	Ľ.Klug

Basics of Controlled Drives	(5th sem., 3-2h)	N.Lipták
Electric Machines II	(6th sem., 3-2h)	E.Klug
Electric Heating Devices	(6th sem., 3-2h)	E.Hüttner
Electric Apparatus	(7th sem., 3-2h)	F.Valent
Power Electronics	(7th sem., 3-2h)	L.Borba
CAD of Electric Machines	(7th sem., 3-2h)	E.Klug
CAMS of Electric Power Systems	(7th sem., 2-3h)	N.Lipták
Electric Drives	(8th sem., 3-2h)	L.Borba
Design of Power Engineering Equipment	(8th sem., 3-2h)	F.Valent

III.2 Graduate Study (Ing.)

Control Drives	(1st sem., 3-2h)	N.Lipták
Generalized Theory of Electric Machines	(1st sem., 2-2h)	E.Klug
CAD of Electric Power Equipment	(1st sem., 3-2h)	E.Klug, E.Hüttner
Electric Traction Systems	(1st sem., 2-2h)	L.Borba
Selected Chapters from Electric Apparatus	(2nd sem., 2-2h)	F.Valent
Modern Methods of Power Systems Control	(2nd sem., 2-3h)	N.Lipták
Special Electric Machines	(2nd sem., 3-2h)	E.Klug
Power Engineering Equipment Production	(2nd sem., 2-2h)	E.Klug, E. Hüttner

III.3 Undergraduate Study (Bc. Distance Education Method)

Electric Machines	(3rd year)	E.Hüttner
Electric Drives	(3rd year)	L.Borba
Electric Apparatus	(4th year)	E.Hüttner

IV. RESEARCH PROJECTS

- Digitization of the Algorithms for Control and Protection Purposes of Devices in Power and Distribution Systems. VEGA 1/0166/03, F. Janiček
- Optimization of generation and Consumption of Electric Energy in Transmission Systems, VTP MŠ SR, F.Janiček

V. COOPERATION

V.1 Cooperation in Slovakia

- ELOSYS Trenčín
- KIWA spol. s r.o. Nitra
- Siemens s.r.o. Bratislava
- TU Košice
- ŽU Žilina
- LEGRAND Slovakia

- MOELLER Slovakia
- OEZ Slovakia
- SCHNEIDER-ELECTRIC, s.r.o.
- BSH Drives and Pumps, Michalovce
- OSRAM Slovakia, a.s., Nové Zámky
- PHOENIX CONTACT, Košice
- PPA Control, a.s.

V.2 International Cooperation

- DEHN+SOHNE, Neumarkt, Germany
- OEZ Letohrad, CzR
- HESS TRADING, Sudoměřica, CzR
- M.SCHNEIDER, Vienna, Austria,
- MOELLER, Schrems, Austria
- PHOENIX CONTACT, Brno, CzR
- ČVUT Praha, CzR
- VUT Brno, CzR
- Politechnika Gliwice, Poland
- VŠB Ostrava, CzR
- ZČU Plzeň, CzR

V.3 Membership in Slovak Organizations and Societies

- E. Hüttner.: Vice-chairman of Common departmental committee of scientific department 26-32-9 Electromechanical Energy Conversion in Slovak Republic
- L. Hruškovič, N. Lipták, F. Valent.: Members of Common departmental committee of scientific department 26-32-9 Electromechanical Energy Conversion in Slovak Republic
- L. Hruškovič, E. Klug, E. Hüttner, N. Lipták, F. Valent: Members of Common departmental committee of scientific department 5.2.11 Electromechanical Energy Conversion at STU FEI
- E. Hüttner.: Member of Common departmental committee of scientific department 5.2.11 Electromechanical Energy Conversion at University of Žilina

V.4 Membership in International Organizations and Societies

- E. Klug: IEEE
- E. Hüttner, L. Klug, F. Valent: IEE
- E. Hüttner: Member of Editorial board of the journal "Electrical machines building and electrical equipment" , Odessa National Polytechnic University, Ukraine

V.5 Contracts

- E. Klug , B.Bachratý.: Innovation of Washmachine Drive UM1BA67; Contract with co. BSH Michalovce

VI. THESES

VI.1 Masters Theses

Masters theses supervised at the Department of Electric Machines and Devices. The names of supervisors are in brackets.

[1] R.Hlavna: Wind Power Plants (E.Klug)

[2] B.Bachratý: Investigation of Properties of the Universal Motor (E.Klug)

- [3] A.Fekete: Secondary Starter of Slip-Ring Induction Motor (L.Borba)
- [4] V.Kujan: Design of AC Voltage Converter (L.Borba)
- [5] J.Medvecký: Project of Constant Current Source (L.Borba)
- [6] D.Tavaly: Circuit for the Verification of Parameters of Overvoltage Protection Devices (L.Jurčacko)
- [7] J.Tóth: Surge Arrester (L.Jurčacko)
- [8] F.Zeman: Surge Arrester (L.Jurčacko)
- [9] J.Štermenský : Wind Power Plants Problematics (E.Klug)

VII. OTHER ACTIVITIES

none

VIII. PUBLICATIONS

VIII.1 Journals

- [1] DARUĽA, I., KLUG, E.: Sources of Wind Power Plants. In: EE - časopis pre elektrotechniku a energetiku. - Vol.11, No.2 (2005) - pp. 10-13. (in Slovak)
- [2] HÜTTNER, E.: Solution of Some Electrical Devices Problems by Simulation Methods. In: Journal of Electrical Engineering. - Vol.56, No.3-4 (2005) - pp. 89-94. (in English)
- [3] HÜTTNER, E., VALENT, P., JURČACKO, E.: The Electric Arc and Its Effect in Electric Instruments. In: EE - časopis pre elektrotechniku a energetiku. - Vol.11, No.6 (2005) - pp. 20-22. (in Slovak)
- [4] JURČACKO, E.: Interruption of a Short-Circuit Current by Low Voltage Distribution Network Overcurrent and Overvoltage Protection Apparatus. In: EE - časopis pre elektrotechniku a energetiku. - Vol.11, No.6 (2005) - pp. 23-24, 28. (in Slovak)
- [5] KLUG, E., HÜTTNER, E.: Use of Electrical Machines in Automobiles. In: EE - časopis pre elektrotechniku a energetiku. - Vol.11, No.3 (2005) - pp. 11-13. (in Slovak)
- [6] VALENT, P.: The Effect of Some Factors upon the Breaking Capability of Circuit Breakers. In: EE - časopis pre elektrotechniku a energetiku. - Vol.11, No.6 (2005) - pp. 18-19. (in Slovak)

VIII.2 Conferences

- [1] DUČ-ANCI, M., BACHRATÝ, B.: Simulation of the Properties of a Universal Motor. In: International Interdisciplinary Honeywell EMI 2005 Student Competition and Conference : Brno, Czech Republic, 26.5.2005. pp. 171-179. (in English)
- [2] DUČ-ANCI, M.: Investigation of the Magnetic Field in a Universalmotor (UM) by FEM. In: 7th Conference for PhD Students ELITECH 2005 : Bratislava, Slovak Republic, 9.2.2005. pp. 125-127. (in English)
- [3] HÜTTNER, E., DUČ-ANCI, M.: Temperature Field During a Short-Time Transient Thermal Process. In: XVI Symposium on Physics of Switching Arc : Brno, Czech Republic, 5.-9.9.2005. pp. 97-100. (in English)

- [4] HÜTTNER, L., JURČACKO, L., VALENT, F.: Research Activities in the Field of Electrical Apparatus at Slovak University of Technology. In: XVI Symposium on Physics of Switching Arc : Brno, Czech Republic, 5.-9.9.2005. pp. 257-267. (in English)
- [5] JURČACKO, L.: Some Problems of Interruption of a Short-Circuit Current by Low Voltage Distribution Network Overcurrent and Overvoltage Protection Devices. In: XVI Symposium on Physics of Switching Arc : Brno, Czech Republic, 5.-9.9.2005. pp. 105-108. (in English)
- [6] KLUG, L., BACHRATÝ, B.: Directly Driven Sources of Wind Power Plants. In: XII International Symposium on Electric Machinery in Prague : Prague, Czech Republic, 7.-8.9.2005. pp. 83-90. (in English)
- [7] KLUG, L., HLAVNA, R.: Direct Drived PM Synchronous Generator for Wind Power Plants. In: 1st International Workshop on Advanced Control Circuits and Systems ACCS'05 : Cairo, Egypt, 6.-10.3.2005. CD-Rom. (in English)
- [8] VALENT, F.: Breaking Capacity of Miniature Circuit Breakers. In: XVI Symposium on Physics of Switching Arc : Brno, Czech Republic, 5.-9.9.2005. pp. 207-210. (in English)

VIII.3 Textbooks

- [1] BORBA, L.: Electric Drives. - Bratislava: FEI STU, 2005. - 208 pp. (in Slovak)
- [2] HÜTTNER, L., KLUG, L.: Electrical Machines. - Bratislava: FEI STU, 2005. (in Slovak)