Applied Physics

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Chapters	**University**	**Contributor**	**Number of pages**	**e-Mail**
Executive summary	KU	J. Peuteman		joan.peuteman@kuleuven.be
Introduction	KU	J. Peuteman		joan.peuteman@kuleuven.be
Chapter 1: Electricity and magnetism	**RTU**	A. Ziravecka		zhiravecka@eef.rtu.lv
1.1. Basics of electrostatics	RTU	A. Ziravecka		zhiravecka@eef.rtu.lv
1.2. Magnetism & electromagnetism	RTU	A. Ziravecka		zhiravecka@eef.rtu.lv

1.3. Magnetic circuits & basic laws	RTU	A. Ziravecka		zhiravecka@eef.rtu.lv
References				
Chapter 2: Electrical engineering	**RTU**	A. Ziravecka		zhiravecka@eef.rtu.lv
2.1. DC circuits	RTU	A. Ziravecka		zhiravecka@eef.rtu.lv
2.2. AC circuits	RTU	A. Ziravecka		zhiravecka@eef.rtu.lv
2.3. Three-phase AC systems	RTU	A. Ziravecka		zhiravecka@eef.rtu.lv
2.4. Electrical & Power engineering	RTU	A. Ziravecka		zhiravecka@eef.rtu.lv
References				
Chapter 3: Modern measurement techniques	**RTU**	A. Zabasta		anatolijs.zabasta@rtu.lv
3.1. Introduction to metrology and mathematical modelling	RTU	N. Kunicina, O. Krumins		kunicina@latnet.lv; hm.ojars@gmail.com
3.2. Measuring equipment	RTU	O. Krumins		hm.ojars@gmail.com
3.3. Measurement converters	RTU	O. Krumins		hm.ojars@gmail.com
3.4. Types of errors	RTU	O. Krumins A. Zabasta		hm.ojars@gmail.com anatolijs.zabasta@rtu.lv
3.5. Measurement of non-electric parameters	RTU	O. Krumins A. Zabasta N. Kunicina		hm.ojars@gmail.com anatolijs.zabasta@microdators.lv kunicina@latnet.lv
3.6. Measuring electrical quantities	RTU	O. Krumins A. Zabasta		hm.ojars@gmail.com anatolijs.zabasta@microdators.lv

		N. Kunicina P. Apse- Apsitis		kunicina@latnet.lv Peteris.Apse-Apsitis@rtu.lv
3.7. Difraction methods (XRD, ED, LEED, etc)	BSU	Mazanik Alexander V. Chelyadinskii Alexey R.		mazanikalexander@gmail.com
3.8. Electron microscopy (SEM, HRTEM, etc)	BSU	Mazanik Alexander V.		mazanikalexander@gmail.com
3.9. Spectroscopic methods (Mossbauer, ESR, NMR, XPS, EDAX, etc)	BSU, SRI for NP BSU	Fedotova Julia A.		julia@hep.by
3.10. Optical spectroscopy (Absorption (UV-Vis, IR), Fluorescence (steady-state and time-resolved), Raman Spectroscopy and SERS	GrSU	Maskevich A.A., Maskevich S.A., Strekal N.D.	**30**	amaskevich@grsu.by nat@grsu.by
3.11. Spectroscopy/microscopy in high spatial and temporal resolution (radiation of quantum systems in nanoenvironment, fundamentals of nanooptics, confocal microscopy, near-field microscopy)	GrSU	Stsiapura V.I., Sveklo I.F., Lavysh A.V.	**25**	**?**
3.12. Probe methods (AFM, MFM, EFM, Kelvin probe, TERS)	GrSU	Sveklo I.F., Lavysh A.V., Stsiapura V.I.	**20**	**?**
3.13. Magnetometry	BSU, SRI for NP BSU	J. Kasiuk		Julia-nechaj@yandex.ru
3.14 Laser and spectral ellipsometry, polarization measurements	GSU	A.V. Rogachev N. Fedosenko D. Kovalenko	**15**	fedosenko@gsu.by
References				
Chapter 4: Reliability in the set-up of physical systems	**KU**	J. Peuteman		joan.peuteman@kuleuven.be
4.1. Electromagnetic Compatibility	KU	J. Peuteman		joan.peuteman@kule

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4.2. Conducted emission measurements	KU	J. Peuteman		joan.peuteman@kuleuven.be
4.3. Cage of Faraday	KU	J. Peuteman		joan.peuteman@kuleuven.be
4.4. Radiated emission measurements	KU	J. Peuteman		joan.peuteman@kuleuven.be
4.5. Reliability and functional safety	KU	J. Peuteman		joan.peuteman@kuleuven.be
Chapter 5: Applied system theory	**KU**	J. Peuteman		joan.peuteman@kuleuven.be
5.1. System theory: foundations	KU	J. Peuteman		joan.peuteman@kuleuven.be
5.2. Practical use of MATLAB/SIMULINK	KU	J. Peuteman		joan.peuteman@kuleuven.be
5.3. System theory and DSP	KU	J. Peuteman		joan.peuteman@kuleuven.be
5.4. System theory and EMC filters	KU	J. Peuteman		joan.peuteman@kuleuven.be