



Şcoala Doctorală Interdisciplinară  
(SDI)

Domeniul de doctorat:

Inginerie Electrică

Conducător doctorat:

Prof. dr.ing. Elena HELEREA

### TEME (TEMATICĂ) PENTRU CONCURS

**TEMA 1:** *Metode și tehnici de monitorizare a calității energiei electrice și de reducere a pierderilor în rețelele electrice cu generare distribuită*

**Bibliografie recomandată:**

1. Dugan R., s.a, *Electric power system quality*, Mc Grow Hill, 2004 (cap. 1-4, 9).
2. Helerea E., *Electrical Energy Quality Monitoring*, Course notes, CD, Transilvania University Library, 2013.
3. Andrei M., Chicco G., Napoli R., Porumb R., Postolache R., Toader C., *Technical and economic challenges to electricity quality regulation*, Revista Energetica, vol. 52, nr. 2, 2004, pp. 50-61.

**TEMA 2:** *Metode și instrumente avansate de detectare a mediilor electromagnetice cu microsenzori*

**Bibliografie recomandată:**

1. Nicolaide, A., *Electromagnetics - General theory of the electromagnetic field - Classical and relativistic approaches* (Third edition revised and augmented). [online]. Braşov, Transilvania University Press, Brasov, 2012 (pag. 31-95).
2. Helerea, E., Călin, M. D., *Materials in Electrical Engineering*. [online]. Braşov: Editura Universităţii Transilvania din Braşov, 2015 (cap. 1, 5)
3. Moraru, A.; Ursachi, C.; Helerea, E., *A new washable UHF RFID tag: Design, fabrication and assessment*. Sensors, 2020, 20, 3451.

**TEMA 3:** *Diagnoza defectelor și prognoza duratei de viață la componente și echipamente electrice*

**Bibliografie recomandată:**

1. Helerea, E., *Materiale electrotehnice. Dielectrici*, Editura Universităţii Transilvania din Braşov, Braşov, 1998 (cap. 7).
2. Notingher P., Dumitran L., s.a, *Determination of the remaining lifetime of power transformers liquid insulations based on the absorption/resorption currents*, The 10-th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 2017, pp. 428 – 433.

3. Măriuț, L., Helerea, E., „*Multiple stress life analysis on underground power cables from distribution networks*”, Proceedings of Doctoral Conference on Computing, DoCEIS 2012, 2012, pp. 275-283.

**Conducător doctorat:**

Prof. dr.ing. Elena HELEREA





Transilvania  
University  
of Brasov

## ADMISSION TO DOCTORAL STUDIES

2020-2021

Session September 2020

Interdisciplinary Doctoral School  
(SDI)

Field of doctoral studies:

Electrical Engineering

PhD supervisor:

Prof.dr.ing. Elena HELEREA

### TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

**TOPIC 1:** *Methods and techniques for monitoring the energy quality and reducing losses in distributed generation networks*

**Recommended bibliography:**

1. Dugan R., s.a, *Electric power system quality*, Mc Grow Hill, 2004 (cap. 1-4, 9).
2. Helerea E., *Electrical Energy Quality Monitoring*, Course notes, CD, Transilvania University Library, 2013.
3. Andrei M., Chicco G., Napoli R., Porumb R., Postolache R., Toader C., *Technical and economic challenges to electricity quality regulation*, Revista Energetica, vol. 52, nr. 2, 2004, pp. 50-61.

**TOPIC 2:** *Advanced methods and tools for electromagnetic media detection with microsensors*

**Recommended bibliography:**

1. Nicolaide, A., *Electromagnetics - General theory of the electromagnetic field - Classical and relativistic approaches* (Third edition revised and augmented). [online]. Braşov, Transilvania University Press, Brasov, 2012 (pag. 31-95).
2. Helerea, E., Călin, M. D., *Materials in Electrical Engineering*. [online]. Braşov: Editura Universităţii Transilvania din Braşov, 2015 (cap. 1, 5).
3. Moraru, A.; Ursachi, C.; Helerea, E., *A new washable UHF RFID tag: Design, fabrication and assessment*. Sensors, 2020, 20, 3451.

**TOPIC 3:** *Diagnosis of defects and lifetime prognosis for electrical components and equipment*

**Recommended bibliography:**

1. Helerea, E., *Materiale electrotehnice. Dielectrici*, Editura Universităţii Transilvania din Braşov, Braşov, 1998 (cap. 7).
2. Notingher P., Dumitran L., s.a, *Determination of the remaining lifetime of power transformers*

*liquid insulations based on the absorption/resorption currents*, The 10-th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 2017, pp. 428 – 433.

1. Măriuț, L., Helerea, E., „*Multiple stress life analysis on underground power cables from distribution networks*”, Proceedings of Doctoral Conference on Computing, DoCEIS 2012, 2012, pp. 275-283.

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