

## PHD ADMISSION SEPTEMBER 2025 SESSION

**Ph.D. field:** Electronic Engineering, Telecommunications and Information Technologies  
**PhD supervisor:** Prof.Dr.Fiz. Doru URSUTIU (Full Member of AOSR)

### THEMES (THEMES) FOR THE CONTEST

#### TOPIC 1: *Technologies and Portable Monitoring Systems in Biomedical Engineering*

1. Content / Main issues addressed
2. IoT and IIoT systems (biomedical and industrial)
3. Smart portable monitoring systems (reconfigurable)
4. Communication systems (trends, development, applications)
5. Autonomous alimentare system (Energy harvesting)

#### Recommended bibliography:

1. Chamunorwa, T; Ursutiu, D; Modran, HA., Electronic Educational Laboratory Platform for Students, 18th Annual International Conference of the International-Association-of-Online-Engineering (IAOE) and the Global-Online-Laboratory-Consortium (GOLC) on Remote Engineering and Virtual Instrumentation (REV) - Online Engineering and Society 4.0, 2022 | ONLINE ENGINEERING AND SOCIETY 4.0 298 , pp.311-322
2. Ravariu C., E. Manea, Babarada F., Ursutiu D., Mihaiescu D., Smith AM, "Organic Compounds on Integrated Nanostructured Materials for Biomedical Applications" Proceedings of the 15th International Conference on Remote Engineering and Virtual Instrumentation ISSN: 23.67337 million isbn: 978-3-319-95678-7, Publishing Year: 2018
3. Neagu, A., Ursutiu, D., Samoilă C., Jingles, V - "INTERNET of Things AND ONLINE ENGINEERING ", Editors: Auer, Michael E., Zutin, Danilo G. (eds.) Lecture Notes in Networks and Systems, vol 22. Springer, modularity Applied to SMART HOME pp. 1062 (pp.56 -67) ISBN 978-3-319-64352-6 Online [https://doi.org/10.1007/978-3-319-64352-6\\_6](https://doi.org/10.1007/978-3-319-64352-6_6) DOI Print ISBN 978- 3-319-64351-9 © Springer International Publishing AG Published: 2017
4. D. Ursutiu and other New trends on monitoring and diagnosis for health sciences, Chapter: "Preliminary results related to the effects melotherapy BioRadio and analysis

Using the LabVIEW analyzes" p.95-113 Ed. LAP LAMBERT Academic Publishing, 2015, ISBN: 978 -3-659-77699-1

Notes / Preconditions / Note: *NO*

☒ Scientific doctorate (full-time only)

☐ Professional doctorate in the fields of Music and Sports Science and Physical Education (frequency or low frequency)

☒ X with funding from the state budget

☒ X with tax or funding from sources other than the state budget

## **TOPIC 2: *Contributions to the improvement of energy capture systems for indoor applications.***

### **Content / Main issues addressed**

1. Notification and control systems
2. Hard component yes soft reconfigurable yes adaptable
3. AI Artificial Intelligence Systems
4. Modern communication systems
5. Autonomous portable powering systems (Energy harvesting)

### **Recommended bibliography:**

1. J. Biron und J. Follett, Foundational Elements of an IoT Solution, O'Reilly Media, Inc., 2016.
2. M. Friedli, L. Kaufmann, F. Paganini und R. Kyburz, «Energy Efficiency of the Internet of Things,» April 2016.
3. I. E. A. IEA, More Data, Less Energy : Making Network Standby More Efficient in Billions of Connected Devices, 2014.
4. A. Harb, «Energy harvesting: State-of-the-art,» Renewable Energy, Bd. 36, pp. 2641-2654, 2011.
5. H. Jayakumar, K. Lee, W. S. Lee, A. Raha, Y. Kim und V. Raghunathan, «Powering the internet of things,» in 2014 IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED), La Jolla, CA, USA, 2014.
6. N. J. Guilar, T. J. Kleeburg, A. Chen, D. R. Yankelevich and R. Amirtharajah, "Integrated Solar Energy Harvesting and Storage," IEEE Transactions on Very Large Scale Integration (VLSI) Systems, vol. 13, no. 3, pp. 627-537, 27 March 2009.
7. K. N. A. C. a. A. G. F. Giuppi, «Challenges in energy harvesting techniques for autonomous self-powered wireless sensors,» in 2013 43rd Eur. Microw. Conf. EuMC 2013 - Held as Part 16th Eur. Microw. Week, EuMW 2013, 2013.
8. V. Goudar, Z. Ren, P. Brochu, M. Potkonjak und Q. Pei, «Optimizing the output of a human-powered energy harvesting system with miniaturization and integrated control,» IEEE Sensors Journal, Bd. 14, Nr. 7, pp. 2084 - 2091, 2014

**Notes / Preconditions / Note:** *will be adapted/completed/eliminated, as the case may be*

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☐ Professional doctorate - in the fields of Music and Sports Science and Physical Education

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**PhD supervisor,**

Prof.Dr.Fiz. URSUTIU Doru

Full Member AOSR

Signature

**Coordinator of the doctoral field,**

Prof. dr. Mihai IVANOVICI

Signature