



ADMISSION TO DOCTORAL STUDIES
September 2022

Session

Field of doctoral studies:
Doctoral supervisor:

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

<p>TOPIC 1: <i>Hybrid Residential Micro-Grids energized by RES</i></p>
<p>Content / Main aspects to be considered - Renewable Energy Sources, RES, usable in Residential applications</p> <ul style="list-style-type: none">-Inteligent Microgrids;-Residential loads and their energy requirements;- Electric energy storage;-Charging performant batteries- Communication and Control requirements in Smart Microgrids-Tehnici de comunicatie si control a Microretelelor casnice
<p>Recommended bibliography:</p> <ol style="list-style-type: none">1. Marinescu C., et a. <i>Rețele Hibrade cu Surse Regenerabile de Energie. Evolutii moderne,(Hibrid Networks with Renewable Energy Sources)</i> 2011, Ed Univ Transilvania, ISBN 978 973 -598-049-12. <i>Hatzigryriou, Nikos (2014). Microgrids Architectures and Control. John Wiley and Sons Ltd. p. 4. ISBN 978-1-118-72068-4.</i>3. Eric Tervoa et al.,An economic analysis of residential photovoltaic systems with lithium ion battery storage in the United States, <i>Renewable and Sustainable Energy Reviews</i>,94,20184. David Bakken editor, <i>SMARTGRIDS Clouds, Communications, Open Source, and Automation</i>, CRC Press, 2014.5. I Serban, Sandra Cespedes, C.Marinescu, et al., <i>Communication requirements in Microgrids: a practical survey</i>, IEEE Access, DOI 10.1109/ACCESS, 2020, FI 4,08,6. C. Marinescu, <i>Design Consideration regarding a Residential Renewable based Microgrid with EV Charging Station capabilities</i>. <i>Energies</i> 2021, Volume 14, Issue 16, 5085
<p>Prerequisites / Remarks:</p> <ul style="list-style-type: none">- degree in electrical engineering or compatible;- Knowledge on power electronics (hardware and control);

<p>TOPIC 2: <i>RES based Residential Charging stations for EV</i></p>
<p>Content / Main aspects to be considered</p> <ul style="list-style-type: none">- Renewable Energy Sources, RES, usable in Residential applications- EV Charging stations- Urban EVs- Electric energy storage;- Charging performant batteries- Charging Control in Microgrids

Recommended bibliography:

1. Marinescu C., et a. *Rețele Hibride cu Surse Regenerabile de Energie. Evolutii moderne,(Hibrid Networks with Renewable Energy Sources)* 2011, Ed Univ Transilvania, ISBN 978 973 -598-049-1
2. Hatziaargyriou, Nikos (2014). *Microgrids Architectures and Control. John Wiley and Sons Ltd. p. 4. ISBN 978-1-118-72068-4.*
3. Eric Tervoa et al., An economic analysis of residential photovoltaic systems with lithium ion battery storage in the United States, *Renewable and Sustainable Energy Reviews*, 94, 2018
4. H.S. Das et al. Electric vehicles standards, charging infrastructure, and impact on grid integration: A technological review, 2020, 120, *Renewable and Sustainable Energy Reviews*
5. C. Marinescu, *Design Consideration regarding a Residential Renewable based Microgrid with EV Charging Station capabilities. Energies* 2021, Volume 14, Issue 16, 5085

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Doctoral supervisor,

Coordinator of
the field of doctoral studies,

Prof. Dr ing Corneliu Marinescu

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