

#### **Address from main organizers**

**Vinnikov, Dmitri; Liivik, Elizaveta** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. [3]  
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#### **Analysis and optimization of the provision of reactive power by nanogrids in a low voltage network**

**Helguero Cruz, Jorge Luis** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 155-156  
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#### **Applied machine learning methods in microgrid simulations**

**Häring, Tobias** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 151-152 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

#### **Comparison of isolated boost full-bridge converters for power factor correction application**

**Zinchenko, Denys** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 125-126 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

#### **Configurable PCB to teach DC-DC converters in power electronics**

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#### **Constructing aggregated time series data for energy system model analyses**

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#### **Development and validation of reactive power regulator for synchronous generator using industrial controller and real-time digital simulator**

**Trummal, Tarmo** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 165-166 : ill

#### **Development of TalTech flexible virtual power plant to aggregate demand-side flexibility**

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#### **Digital twin as human-robot interaction validation tool**

**Kuts, Vladimir** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 27-28 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

#### **Electrical machine research in TalTech**

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#### **Fault-tolerant high step-up DC-DC converters**

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#### **Field-oriented control of synchronous reluctance motors**

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#### **Flywheel model for microgrid simulation**

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#### **Future trends in design of electrical machines**

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#### **IoT based tools and methods for electrical machine diagnostics**

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#### **Iron losses evaluation of additively manufactured 6.5 % silicon steel**

**Tiismus, Hans** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of

energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 103-104 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Lighting the Baltuc [i.e. Baltic] Sea region - cities accelerate the deployment of sustainable and smart urban solutions**  
**Rosin, Argo** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 11-12 : map [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Machine learning and deep learning techniques for wind energy forecasting**  
**Shabbir, Noman** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 95-96 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Modified winding function-based model of squirrel cage induction motor for fault diagnostic**  
**Asad, Bilal** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 93-94 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Negative and positive lightning impulse flashover voltages of service-aged medium voltage porcelain support insulator**  
**Kiitam, Ivar** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 159-160 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Novel family of universal DC-DC/AC converters**  
**Husev, Oleksandr** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 31-32 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Optimised residential battery energy storage systems**  
**Blinov, Andrei** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 13-14 [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Overview of cyber-physical control systems for self-driving vehicles**  
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**Positioning accuracy of reconfigurable robot workcells in manufacturing**  
**Vaher, Kristo** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 79-80 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Research development of bidirectional DC-DC/AC converter**  
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**A review of optimization methods for electrical machines design**  
**Andriushchenko, Ekaterina** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 101-102 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Review on the control strategies of hybrid nanogrid**  
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**Safety verification and validation of self-driving cars**  
**Malayjerdi, Mohsen** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 81-82 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Self-driving car and pedestrian interaction for road safety**  
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**Soft-switching modulation method for full-bridge DC-AC HF-link inverter**  
**Korkh, Oleksandr** 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 133-134 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)

**Study of demand side management of variable air volume ventilation system**  
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**Suitability analysis of using industrial robots in manufacturing**

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#### **The main challenges and opportunities in mechatronics**

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#### **The main classification of light aerial vehicles**

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#### **Thermal stability of LED lamps**

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#### **Thoughts on impact of distributed generation on estimation of exponential load models**

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#### **3D visualization and simulation of intra-logistics for manufacturing**

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#### **Virtual learning factory toolkit development**

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#### **Voltage step-down methods for series resonant DC-DC converters**

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#### **Voltage step-up PWM methods for series resonant DC-DC converter**

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