

# FUTURE-PROOF POWER ELECTRONIC SYSTEMS FOR RESIDENTIAL MICROGRIDS

12-14.11.2025, TERVISE PARADIIS HOTEL, SIDE 14, PÄRNU

## AGENDA

### WEDNESDAY, 12.11.2025

15:00-17:00 FUTURE EU PROJECT PROPOSALS DISCUSSION WITH PARTNERS FROM LATVIA AND POLAND

17:00-19:00 COORDINATION MEETING OF IEEE IES CHAPTERS FROM ESTONIA, LATVIA, AND POLAND

### THURSDAY, 13.11.2025

10:00-10:30 MEET-UP AND WELCOME COFFEE

#### 10:30-11:00 OPENING SESSION

**PRG1086: From Idea to Implementation.** Dmitri VINNIKOV (*TalTech, EE*)

#### 11:00-12:30 MAIN FINDINGS AND EMERGING TECHNOLOGIES (6x15 min)

- Zero-Emission Buildings and Challenges of All-Electric Lifestyle. Andrei BLINOV (*TalTech, EE*)
- FlexiVerter: LEGO Brick for Residential DC Microgrids – Modular, Scalable, Smart. Andrii CHUB (*TalTech, EE*)
- FORCE: Ultra-Efficient DC Microgrid Interface for Residential Battery Storages. Neelesh YADAV (*TalTech, EE*)
- MERGE: Smart Energy Gateway for Prosumer DC Buildings. Edivan CARVALHO (*TalTech, EE*)
- SafeBreak – Multifunctional SSCB for Prosumer DC Buildings. Tanel JALAKAS (*TalTech, EE*)
- TalTech Residential DC Innovation Hub - The First DC Living Lab in Northern Europe. Dmitri VINNIKOV (*TalTech, EE*)

#### 12:30-13:30 LUNCH

#### 13:30-15:00 SPIN-OFF ACTIVITIES (9x10 min)

- UbiCharge: Addressing Urban Infrastructure Challenges via Opportunity V2G Charging. Hans ANNISTE (*TalTech, EE*)
- Streetlighting at the Forefront of the Widescale DC Rollout. Andrei BLINOV (*TalTech, EE*)
- Shift2DC as a Critical Step Towards Energy Transition. Sachin CHAUHAN (*TalTech, EE*)
- SmartGYsum: Energy Management in Droop-Controlled Residential DC Microgrids. Sayeed HASAN (*TalTech, EE*)
- Autonomous Mobile Water Pumping & Purification Systems. Tofopefun NIFISE OLAYIWOLA (*TalTech, EE*)
- IMPRESS-U: Resilient Last-Mile DC Electrification for Repetitive Shock Scenarios. Andrii CHUB (*TalTech, EE*)
- SecondSpark: Giving Second Life to EV Batteries. Alexander RINK (*TalTech, EE*)
- i<sup>3</sup>DC Initiative and Estonian DC Innovation Workshop Series. Dmitri VINNIKOV (*TalTech, EE*)
- TalTech Student DC Club. Dmitri VINNIKOV (*TalTech, EE*)

#### 15:00-16:00 FUTURE OUTLOOK AND NEW RESEARCH INITIATIVES (5x10 min)

- DC Prosumer Buildings: From Concept to Implementation. Dmitri VINNIKOV (*TalTech, EE*)
- ENER CER: Energy Efficiency Through Fusion of Power Electronics, Data Science and AI. Juri BELIKOV (*TalTech, EE*)
- DC Technologies for CERN FCC. Andrii CHUB (*TalTech, EE*)
- Research on Battery Energy Storage Systems at Warsaw University of Technology. Adam MILCZAREK (*WUT, PL*)
- Renewable Energy Research at Riga Technical University. Janis ZAKIS (*RTU, LV*)

#### 16:00-17:00 NETWORKING

#### 17:00-18:00 DINNER AND FREE TIME

#### 18:00-21:00 SOCIAL EVENT

### FRIDAY, 14.11.2025

#### 8:00-9:00 BREAKFAST

#### 9:00-10:30 CLOSING REMARKS AND FAREWELL

#### 10:30-11:30 CHECK-OUT

Chair: Dmitri Vinnikov  
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