

### **Accelerated global MPPT for multimode series resonant DC-DC converter**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** 2021 IEEE 15th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) : Florence, Italy, 14-16 July 2021 2021 <https://doi.org/10.1109/CPE-POWERENG50821.2021.9501077>

### **Bidirectional isolated hexamode DC-DC converter**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** IEEE transactions on power electronics 2022 / p. 12264-12278  
<https://doi.org/10.1109/TPEL.2022.3170229> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **Comparison of voltage buck control methods for series resonant converter**

**Sidorov, Vadim** 20th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tallinn, Estonia, September 8-10, 2021 2021 / p. 55-56 : ill [https://www.ester.ee/record=b5457278\\*est](https://www.ester.ee/record=b5457278*est)

### **Cycle-skipping technique based on sigma-delta modulation in series resonant DC transformer**

Pittala, Lohith Kumar; **Chub, Andrii**; Sidorov, Vadim; **Khan, Salman**; Ricco, Mattia; Mandrioli, Riccardo 2025 IEEE Seventh International Conference on DC Microgrids (ICDCM) 2025 / 5 p <http://ieeexplore.ieee.org/document/11144699>  
<https://doi.org/10.1109/ICDCM63994.2025.11144699>

### **Efficiency improvement of step-up series resonant DC-DC converter in buck operating mode**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** 2020 IEEE 61st International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), Riga, Latvia, Nov. 5-7, 2020 : conference proceedings 2020 / 6 p. : ill <https://doi.org/10.1109/RTUCON51174.2020.9316574>

### **Feasibility study of universal power electronics interface operation in 350 V and 700 V residential DC microgrids**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** 2023 IEEE 17th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2023 / 7 p <https://doi.org/10.1109/CPE-POWERENG58103.2023.10227441>

### **High-efficiency quad-mode parallel PV power optimizer for DC microgrids**

**Sidorov, Vadim** 21st International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Pärnu, Estonia, June 15-18, 2022 2022 / p. 59-60 : ill [https://www.ester.ee/record=b5504019\\*est](https://www.ester.ee/record=b5504019*est)

### **High-efficiency quad-mode parallel PV power optimizer for DC microgrids**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** IEEE transactions on industry applications 2023 / p. 1002-1012  
<https://doi.org/10.1109/TIA.2022.3208879> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **High-frequency split-bobbin transformer design with adjustable leakage inductance**

**Rahman, Showrov; Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** 2021 IEEE 62nd International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), 15-17 Nov. 2021 : conference proceedings 2021 / p. 1-5 : ill <https://doi.org/10.1109/RTUCON53541.2021.9711708>

### **Impact of transformer turns ratio on the power losses and efficiency of the wide range isolated buck-boost converter for photovoltaic applications**

**Mashinchi Maheri, Hamed; Vinnikov, Dmitri; Chub, Andrii; Sidorov, Vadim; Liivik, Elizaveta** Energies 2020 / art. 5645, 21 p  
<https://doi.org/10.3390/en13215645> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **Implementation of burst control based on sigma-delta modulation in low-cost microcontroller**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** IEEE Workshop on Computers in Power Electronics 2022 / 6 l  
<https://doi.org/10.1109/COMPEL53829.2022.9830023>

### **Implementation of global maximum power point tracking in photovoltaic microconverters: A survey of challenges and opportunities**

**Vinnikov, Dmitri; Chub, Andrii; Kosenko, Roman; Sidorov, Vadim; Lindvest, Andre** IEEE journal of emerging and selected topics in power electronics 2023 / p. 2259-2280: ill <https://doi.org/10.1109/JESTPE.2021.3137521> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **Input source identification algorithm For isolated buck-boost DC-DC converter**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** IEEE Workshop on Computers in Power Electronics 2022 / 6 p  
<https://doi.org/10.1109/COMPEL53829.2022.9829973>

### **Novel universal power electronic interface for integration of pv modules and battery energy storages in residential DC microgrids**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri; Lindvest, Andre** IEEE Access 2023 / p. 30845-30858  
<https://doi.org/10.1109/ACCESS.2023.3260640> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **An overview and comprehensive comparative evaluation of constant-frequency voltage buck control methods for series resonant DC-DC converters**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri; Bakeer, Abualkasim Ahmed Ali** IEEE Open Journal of the Industrial Electronics Society 2021 / p. 65 - 79 <https://doi.org/10.1109/OJIES.2020.3048003> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Performance improvement of PWM control methods for voltage step-down in series resonant DC–DC converters**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** Energies 2020 / art. en13174569 ; 18 p <https://doi.org/10.3390/en13174569> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Power loss model and efficiency analysis of the quasi-Z-Source isolated buck-boost converter with wide input voltage and load range**

**Mashinchi Maheri, Hamed; Vinnikov, Dmitri; Chub, Andrii; Sidorov, Vadim** 2020 IEEE 61st International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), Riga, Latvia, Nov. 5-7, 2020 : conference proceedings 2021 / 8 p. : ill <https://doi.org/10.1109/RTUCON51174.2020.9316587>

**Series-resonant DC-DC interface converter for battery integration into DC microgrids**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** 2022 IEEE 20th International Power Electronics and Motion Control Conference (PEMC) : Brasov, Romania, 25-28 Sept. 2022 : proceedings 2022 / p. 307-310 <https://doi.org/10.1109/PEMC51159.2022.9962929>

**Shade-tolerant PV microconverters**

**Sidorov, Vadim; Bakeer, Abualkasim Ahmed Ali; Maheri, Hamed Mashinchi; Hassanpour, Naser; Rahman, Showrov; Chub, Andrii** Distributed Energy Systems 2023 / p. 1-22 <https://doi.org/10.1201/9781003229124-17>

**Survey of topology morphing control techniques for performance enhancement of galvanically isolated DC-DC converters**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri; Peng, Fang Zheng** IEEE Open Journal of the Industrial Electronics Society 2022 / p. 751-777 : ill <https://doi.org/10.1109/OJIES.2022.3225265> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Zero-redundancy fault-tolerant resonant dual active bridge converter for more electric aircrafts**

**Chub, Andrii; Buticchi, Giampaolo; Sidorov, Vadim; Vinnikov, Dmitri** 2022 IEEE 13th International Symposium on Power Electronics for Distributed Generation Systems (PEDG) 2022 / 6 l. <https://doi.org/10.1109/PEDG54999.2022.9923154>

**Topology morphing control of low-cost PV microconverters**

**Mashinchi Maheri, Hamed; Vinnikov, Dmitri; Chub, Andrii; Sidorov, Vadim** 2021 IEEE 19th International Power Electronics and Motion Control Conference (PEMC), 25-29 April 2021, Gliwice, Poland : proceedings 2021 <https://doi.org/10.1109/PEMC48073.2021.9432496>

**Topology morphing control with soft transients for multimode series resonant DC-DC converter**

**Sidorov, Vadim; Chub, Andrii; Vinnikov, Dmitri** 2021 IEEE 22nd International Conference of Young Professionals in Electron Devices and Materials (EDM) 2021 / p. 331–336 <https://doi.org/10.1109/EDM52169.2021.9507621>

**Topology-morphing photovoltaic microconverter with wide MPPT voltage window and post-fault operation capability**

**Vinnikov, Dmitri; Chub, Andrii; Zinchenko, Denys; Sidorov, Vadim** IEEE Access 2020 / art. 9171332, p. 153941-153955 : ill <https://doi.org/10.1109/ACCESS.2020.3017805> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Universal galvanically isolated DC-DC converters with topology morphing control = Universaalsed topoloogiat muutva juhtimisega galvaaniliselt isoleeritud alalispingemuundurid**

**Sidorov, Vadim** 2023 <https://doi.org/10.23658/taltech.17/2023> <https://digikogu.taltech.ee/et/Item/96dbe736-5976-431c-ae55-7fc2d4ead55e> [https://www.ester.ee/record=b5558654\\*est](https://www.ester.ee/record=b5558654*est)

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

**Sidorov, Vadim** 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. 141-142 : ill [https://www.ester.ee/record=b5291755\\*est](https://www.ester.ee/record=b5291755*est)