

Addressing cross-coupling issues in magnetically integrated three-port DC-DC converters

Carvalho da Silva, Edivan Laercio; Blinov, Andrei; Sohail, Umer; Chub, Andrii 2024 IEEE 21st International Power Electronics and Motion Control Conference (PEMC) 2024 / 5 p <https://doi.org/10.1109/PEMC61721.2024.10726373>

Analysis of a reconfigurable non-isolated DC-DC converter for DC microgrid applications

Yadav, Vinod Kumar; Chub, Andrii 2025 IEEE Seventh International Conference on DC Microgrids (ICDCM) 2025 / 6 p <https://ieeexplore.ieee.org/document/11144731> <https://doi.org/10.1109/ICDCM63994.2025.11144731>

Analysis of design requirements and optimization possibilities of partial power converter for photovoltaic string applications in DC microgrids

Chub, Andrii; Hassanpour, Naser; Yadav, Neelesh; Jalakas, Tanel; Blinov, Andrei; Vinnikov, Dmitri IEEE Access 2024 / p. 14605-14619 <https://doi.org/10.1109/ACCESS.2024.3354375> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Application of cycle skipping modulation in buck-boost photovoltaic microconverters

Maheri, Hamed Mashinchi; Vinnikov, Dmitri; Chub, Andrii; Sidorov, Vadim; Galkin, Ilja IEEE transactions on industry applications 2022 / p. 4804-4815 <https://doi.org/10.1109/TIA.2022.3163083> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Bidirectional DC-DC converter for modular residential battery energy storage systems

Chub, Andrii; Vinnikov, Dmitri; Kosenko, Roman; Liivik, Liisa; Galkin, Ilja IEEE transactions on industrial electronics 2020 / p. 1944-1955 : ill <https://doi.org/10.1109/TIE.2019.2902828> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Comparative evaluation of a DAB converter and SRC for DC buildings application

Carvalho da Silva, Edivan Laercio; Chub, Andrii; Blinov, Andrei; Banavath, Satish Naik; Vinnikov, Dmitri 2024 IEEE 21st International Power Electronics and Motion Control Conference (PEMC) 2024 / 6 p <https://doi.org/10.1109/PEMC61721.2024.10726346>

Comparative study of possible implementations of the flexible power electronic interface for wide-range high step-up applications in DC microgrid

Khan, Salman; Chub, Andrii; Vinnikov, Dmitri; Kasper, Matthias; Deboy, Gerald 2024 IEEE 18th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2024 / 6 p <https://doi.org/10.1109/CPE-POWERENG60842.2024.10604370>

Comparison of full power and partial power buck-boost DC-DC converters for residential battery energy storage applications

Hassanpour, Naser; Chub, Andrii; Blinov, Andrei; Vinnikov, Dmitri 2022 IEEE 16th International Conference on Compatibility, Power Electronics, and Power Engineering (CPE-POWERENG) 2022 / 6 p <https://doi.org/10.1109/CPE-POWERENG54966.2022.9880862>

Comparison of three-phase three-level voltage source inverter with intermediate dc-dc boost converter and quasi-Z-source inverter

Panfilov, Dmitry; Husev, Oleksandr; Blaabjerg, Frede; Zakis, Janis; Khandakji, Kamal IET Power Electronics 2016 / p. 1238 - 1248 <https://doi.org/10.1049/iet-pel.2015.0539> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Comprehensive comparative analysis of impedance-source networks for DC and AC application

Husev, Oleksandr; Shults, Tatiana; Vinnikov, Dmitri; Chub, Andrii Electronics 2019 / 21 p. : ill <https://doi.org/10.3390/electronics8040405> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Control of a three-input DC-DC converter suitable for DC motors

Alizadeh Asl, Amin; Hosseini, Seyed Hossein; Vosoughi Kurdkandi, Naser; Alizadeh Asl, Ramin International transactions on electrical energy systems 2022 / art. 4264649, 20 p. : ill <https://doi.org/10.1155/2022/4264649> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Control of multiport partial power converters for PV-battery systems integration in DC microgrids

Yadav, Neelesh; Mitra, Tuhin; Makkieh, Ahmad; Chub, Andrii 2025 IEEE Seventh International Conference on DC Microgrids (ICDCM) 2025 / 6 p <https://doi.org/10.1109/ICDCM63994.2025.11144705>

Droop control implementation in bidirectional step-up/down Partial power converter for battery energy storage applications

Hassanpour, Naser; Chub, Andrii; Blinov, Andrei; Vinnikov, Dmitri 2023 IEEE 64th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), Riga, Latvia, October 9-10, 2023 : conference proceedings 2023 / 6 p <https://doi.org/10.1109/RTUCON60080.2023.10413064>

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

Evaluation of GaN HEMTs for high-voltage stage of isolated DC-DC converters

Chub, Andrii; Zdanowski, Mariusz; **Blinov, Andrei;** **Rabkowski, Jacek** 2016 10th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) : proceedings : Opera Nova's Congress Center, Bydgoszcz, Poland, 29. June - 01. July, 2016 2016 / p. 375-379 : ill <https://doi.org/10.1109/CPE.2016.7544217>

Feasibility study of three-phase modular converter for dual-purpose application in DC and AC microgrids

Roncero-Clemente, Carlos; **Husev, Oleksandr;** **Matiushkin, Oleksandr;** Gutierrez-Escalona, Javier; Barrero-Gonzalez, Fermin; **Vinnikov, Dmitri;** Strzelecki, Ryszard IEEE journal of emerging and selected topics in power electronics 2024 / p. 1348-1358 <https://doi.org/10.1109/JESTPE.2023.3247960> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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 partial power converter for integration of second-life battery energy storage systems in DC microgrids

Hassanpour, Naser; **Chub, Andrii;** **Yadav, Neelesh;** **Blinov, Andrei;** **Vinnikov, Dmitri** IEEE Open Journal of the Industrial Electronics Society 2024 / p. 87850-87863 <https://doi.org/10.1109/OJIES.2024.3389466> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Implementation of MPPT hill climbing technique for forward based DC-DC converter

Matiushkin, Oleksandr; **Husev, Oleksandr;** Romero-Cadaval, Enrique; Roncero-Clemente, Carlos 2024 IEEE 18th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2024 / 6 p <https://doi.org/10.1109/CPE-POWERENG60842.2024.10604422>

Improved maximum power point tracking algorithm for step-up/down partial power converters operating around zero partiality

Yadav, Neelesh; **Hassanpour, Naser;** **Chub, Andrii;** **Blinov, Andrei;** **Vinnikov, Dmitri** IEEE journal of emerging and selected topics in power electronics 2024 / p. 1984-1994 <https://doi.org/10.1109/JESTPE.2024.3354843> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Input voltage range extension methods in the series-resonant DC-DC converters

Chub, Andrii; **Vinnikov, Dmitri;** Lai, Jih-Sheng 2019 IEEE 15th Brazilian Power Electronics Conference and 5th IEEE Southern Power Electronics Conference (COBEP/SPEC 2019) Santos, Brazil, 1-4 December 2019 2019 / p. 1493-1499 <http://toc.proceedings.com/52923webtoc.pdf>

Investigation of radiated emissions of a galvanically isolated qZS DC-DC converter

Jalakas, Tanel; **Jarkovoi, Marek;** **Roasto, Indrek;** **Zakis, Janis;** Garganev, Alexander 2015 IEEE 5th International Conference on Power Engineering, Energy and Electrical Drives (POWERENG) : proceedings : May 11-13, 2015, Riga, Latvia 2015 / p. 176-181 : ill <http://dx.doi.org/10.1109/PowerEng.2015.7266314>

Maximum power point tracking algorithm for step-up/down partial power converters with improved performance around zero partiality

Yadav, Neelesh; **Chub, Andrii;** **Hassanpour, Naser;** **Blinov, Andrei;** **Vinnikov, Dmitri** 2023 IEEE 17th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2023 / 6 p <https://doi.org/10.1109/CPE-POWERENG58103.2023.10227506>

MPPT performance enhancement of low-cost PV microconverters

Vinnikov, Dmitri; **Chub, Andrii;** **Korkh, Oleksandr;** **Liivik, Elizaveta;** Blaabjerg, Frede; Kouro, Samir Solar energy 2019 / p. 156-166 : ill <https://doi.org/10.1016/j.solener.2019.05.024> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A new transformer-less single switch boost DC-DC converter with lower stress

Mashinchi Maheri, Hamed; Mohammadzadeh Shahir, Farzad; Babaei, Ebrahim 2020 IEEE 61st International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), November 5-7, 2020 2020 / 6 p http://www.conference.rtu.lv/qazcdeTGBmjURTUCON2020_paper_101Gq73sO95Kb30.pdf <https://doi.org/10.1109/RTUCON51174.2020.9316470>

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 analysis of partial power converter in DC microgrid with active front-end converter

Yadav, Neelesh; **Hasan, Sayeed;** Galkin, Ilya; **Chub, Andrii** 2025 IEEE Seventh International Conference on DC Microgrids (ICDCM) 2025 / 5 p <https://doi.org/10.1109/ICDCM63994.2025.11144718>

Performance benchmarking of Si and GaN MOSFETs in isolated buck-boost DC-DC converter

Mashinchi Maheri, Hamed; Vinnikov, Dmitri; Rahman, Showrov 2021 IEEE 62nd International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON), 15-17 Nov. 2021 : conference proceedings 2021 / p. 1-6 : ill <https://doi.org/10.1109/RTUCON53541.2021.9711696>

Performance evaluation of step-up /down partial power converters based on current-fed DC-DC topologies

Yadav, Neelesh; Hassanpour, Naser; Chub, Andrii; Blinov, Andrei; Vinnikov, Dmitri; Galkin, Ilya; Abdelrahim Abdelghafour, Omar Mohamed IEEE transactions on industry applications 2024 / p. 7111-7124 <https://doi.org/10.1109/TIA.2024.3413050>

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>

Protection and control implementation for bidirectional step-up/down partial power converter for droop-controlled DC microgrids

Yadav, Neelesh; Chub, Andrii; Hassanpour, Naser; Blinov, Andrei; Vinnikov, Dmitri IEEE transactions on industry applications 2025 / 11 p <https://doi.org/10.1109/TIA.2025.3561767>

Protection of bidirectional Step-Up/Down partial power converter against short circuit and open circuit faults and mode transition issues

Hassanpour, Naser; Chub, Andrii; Blinov, Andrei; Yadav, Neelesh; Hasan, Sayeed; Vinnikov, Dmitri 2024 IEEE 18th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2024 / 6 p <https://doi.org/10.1109/CPE-POWERENG60842.2024.10604315>

Self-healing photovoltaic microconverter with zero redundancy and accurate low-cost fault detection

Bakeer, Abualkasim Ahmed Ali; Chub, Andrii; Vinnikov, Dmitri IEEE transactions on industrial electronics 2024 / p. 646-656 <https://doi.org/10.1109/TIE.2023.3250836> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Series resonant DC-DC converter with an AC-switch-based full-bridge boost rectifier

Bakeer, Abualkasim Ahmed Ali; Chub, Andrii; Vinnikov, Dmitri Annual IEEE Conference on Applied Power Electronics Conference and Exposition (APEC) 2021 / p. 1985-1990 <https://doi.org/10.1109/APEC42165.2021.9487113> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Simulation study of the three-level boost DC-DC converter with full ZVS for PV application

Vorobei, Vasiliy; Zakis, Janis; Husev, Oleksandr; Veligorskyi, Oleksandr; Savenko, Oleksandr ICPE 2015 - ECCE Asia : 9th International Conference on Power Electronics - ECCE Asia : "Green World with Power Electronics" : June 1-5, 2015, 63 Convention Center, Seoul, Korea 2015 / p. 2038-2043 : ill <http://dx.doi.org/10.1109/ICPE.2015.7168058>

Single-switch impedance-source galvanically isolated DC-DC converter with combined energy transfer

Chub, Andrii; Vinnikov, Dmitri; Babaei, Ebrahim; Liivik, Elizaveta; Korkh, Oleksandr; Kouro, Samir 59th Annual International Scientific Conference on Power and Electrical Engineering : November 12, 13, 2018, Riga Technical University (RTUCON) : conference proceedings 2018 / 6 p. : ill <https://doi.org/10.1109/RTUCON.2018.8659851>

Soft switching bidirectional step-up/down partial power converter with reduced components stress

Hassanpour, Naser; Chub, Andrii; Blinov, Andrei; Vinnikov, Dmitri IEEE transactions on power electronics 2023 / p. 14166-14177 <https://doi.org/10.1109/TPEL.2023.3289061> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Startup implementation in universal power electronics interface with dual-standard output for DC microgrid applications

Chauhan, Sachin; Khan, Salman; Chub, Andrii; Vinnikov, Dmitri; Wunder, Bernd; Flores-Bahamonde, Freddy 2025 IEEE 19th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG) 2025 / 6 p <https://doi.org/10.1109/CPE-POWERENG63314.2025.11027310>

Step-Up series-resonant DC-DC converter with switched mode rectifier operating at fixed switching frequency

Chub, Andrii; Bakeer, Abualkasim Ahmed Ali; Vinnikov, Dmitri 2020 IEEE 11th International Symposium on Power Electronics for Distributed Generation Systems (PEDG), 28 Sept.-1 Oct. 2020, Dubrovnik, Croatia 2020 / p. 597-601 <https://doi.org/10.1109/PEDG48541.2020.9244312>

Synchronous rectification in quasi-Z-source converters : possibilities and challenges

Liivik, Liisa; Vinnikov, Dmitri; Jalakas, Tanel 2014 IEEE International Conference on Intelligent Energy and Power Systems (IEPS) : conference proceedings : June 2-6, 2014, Kyiv, Ukraine 2014 / p. 32-35 : ill

Zero-current switching impedance-source DC-DC converter

Korkh, Oleksandr; Blinov, Andrei; Chub, Andrii; Vinnikov, Dmitri IECON 2019 - 45th Annual Conference of the IEEE Industrial Electronics Society : proceedings 2019 / p. 5051-5056 <https://doi.org/10.1109/IECON.2019.8927614> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Three-mode reconfigurable rectifier for DC-DC converters with wide input voltage range

Chub, Andrii; Vinnikov, Dmitri; Kouro, Samir; Malinowski, Mariusz IECON 2019 - 45th Annual Conference of the IEEE Industrial Electronics Society : proceedings 2019 / p. 4429-4435 <https://doi.org/10.1109/IECON.2019.8926994> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Three-port current fed push/pull partial power converter for integration of PV/battery systems in DC microgrids

Yadav, Neelesh; Chub, Andrii; Kütt, Lauri 2024 19th Biennial Baltic Electronics Conference (BEC) 2024 / 6 p
<https://doi.org/10.1109/BEC61458.2024.10737934> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Three-port flyback converter for photovoltaic module integration in bipolar DC microgrids

Chub, Andrii; Zinchenko, Denys; Vinnikov, Dmitri; Blinov, Andrei 2020 IEEE International Conference on Industrial Technology, Buenos Aires Institute of Technology (ITBA) Buenos Aires, Argentina, 26-28 February, 2020 : proceedings 2020 / p. 909-914
<https://doi.org/10.1109/ICIT45562.2020.9067237> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Wide-range operation of high step-up DC-DC converters with multimode rectifiers

Chub, Andrii; Vinnikov, Dmitri; Korkh, Oleksandr; Jalakas, Tanel; Demidova, Galina Electronics 2021 / art. 914, 20 p. : ill
<https://doi.org/10.3390/electronics10080914> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Wide-range universal isolated DC-DC converter for EV charging applications

Blinov, Andrei; Chub, Andrii; Vinnikov, Dmitri IECON Proceedings (Industrial Electronics Conference) IECON 2024 - 50th Annual Conference of the IEEE Industrial Electronics Society 2024 / 5 p <https://doi.org/10.1109/IECON55916.2024.10905692> [Conference proceedings at Scopus](#) [Article at Scopus](#)