Jie He

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EDUCATION

Guangdong Ocean University Sep. 2019-Jun. 2023

B.E. in Electrical Engineering and its Automation, GPA:85.1/100, IELTS 7 (6.0)

PUBLICATIONS

[J1] F. Li, **J. He**, et al.: Synchronous Dual-Switch Ultrahigh Step-Up DC-DC Converter Based on Coupled Inductor and Voltage Multiplier for Photovoltaic Systems. **IEEE Trans. Ind Electron**. 71(5), 4807-4817 (2024)

[J2] P. Luo, **J. He**, et al.: A high step-up DC-DC converter based on three-winding coupled inductor and voltage multiplier for renewable energy applications. **IET Power Electron**. 16(6), 961-974 (2023)

[J3] F. Li, **J. He**, et al.: Quadratic-type high step-up DC-DC converter with continuous input current integrating coupled inductor and voltage multiplier for renewable energy applications. **Journal of Power Electronics**. 23(4), 555–567 (2023)

[C1] **J. He**, F. Li, et al.: A Single Switch Quadratic Step-up DC-DC Converter Based on Three-winding Coupled Inductor and Switch-capacitor. IEEE 6th Information Technology and Mechatronics Engineering Conference (ITOEC). 6,1624-1628 (2022)

[P1] F. Li, **J. He**, et al.: A secondary boost DC-DC converter for fuel cell system. Chinese patent: CN217063567U[P]. 2022-07-26

RESEARCH EXPERIENCE

- **High step-up DC-DC converters for sustainable energy sources (SERs)** Sep. 2021-Jun. 2023

Description: Proposed 4 new topologies with quadratic technique and continuous input current, high transfer ratio can be achieved by moderate duty cycle, and the voltage stress across the switches is alleviated. Therefore, the low input voltage generated by the SERs can be boosted up to the DC bus for further utilization.

Contribution: Literature reviews (appreciated by reviewers), operating principles and loss analysis, prototype fabrication, experiment, and maximum power point tracking (MPPT) simulation.

- **BUCK-BOOST converter for energy storage device** Feb. 2022-Sep. 2022

Description: A proposed topology based on a Cuk converter featuring leakage inductance recovery with integrated PI control and voltage feedforward for offshore friction energy utilization, dynamic response performance is stable.

Contribution: Transfer functions calculation and small-signal modeling. Improve the transient response by applying the feedforward control, auxiliary power supply design, inductors design and fabrication, and test platform construction.

- **High step-down ZVS-ZCS converter** Apr. 2022-Jul. 2022

Description: Proposed a nonisolated buck converter applied to the battery charging input of distributed energy storage to adapt to the charging voltage of the battery pack.(好好斟酌下)

Contribution: Background investigation and paper search, more than 200 articles to find the most suitable topology, model simulation, theoretical calculation, parameter specification setting requirements analysis.

WORK EXPERIENCE

Hardware Engineer — *Shenzhen SHINEYOUNG New Energy Tech. Co., Ltd.* Jul. 2023-Mar. 2024

Project and main work: A 125 kW DC-AC Serial PV inverters(英文表达), in charge of designing and optimizing the main power board (including boost and three-level T-type NPC). Double pulse testing (DPT) to test under worst-case operating conditions (over 1000+ tests, 500+ test data), related loss analysis of semiconduction devices. SiC MOSFET driver power and signal circuit design.

Achievement: Implementation of 5-input boost circuit (英文表达), reduction of 30 % switching loss of the MOSFET, solving the fatal problem of inverter function cannot be achieved.

HONORS & AWARDS

2023 MOE of PRC, China National Outstanding Student Scholarship (granted to top 0.6 %)

2023 GDOU, Outstanding Graduates Awards (granted to top 2%)

2022 JNS, Jiangmen Nanyang Scholarship (granted to top 2%)（twice）

2023 GDOU, National First Prize, The 1st College E&EE Innovation Competition, Beijing, China

2020 third-class scholarships; 2021, second-class scholarship, junior, 2022 The First Prize Scholarship

EXTRACURRICULAR ACTIVITIES

2023 GDOU, The first team Leader of the Energy Conversion Innovation Lab (recruited 30+ members) (Interviewed 80+ people) Wrote 15 project books and competitions, organized 10+ team events.

2023 GDOU, Reviewer experience, 1 paper in IET, 1 paper in IEEE ACCESS.(chatgpt 优化)

2023 GDOU, The 40-hike journey of HuGuangYan in Crater Lake Park, total of 200km.（改）

SKILLS

Proficient in Mathcad, Origin, Altium Designer, Visio, Simplis, Matlab, CCS, Word, PPT; Excel; Photoshop

Proficiency in using oscilloscopes, signal generators, multimeters, DC sources, electronic loads, etc.

Language: Mandarin (native), Cantonese (native), English (IELTS: C1) （格式上的问题）

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71 是卷号 4 是期号 4807-4817 是页码 最后是年份
卷号：以创办年份未单位，创刊年为第一卷，比如 2024 年创刊，那 2024 发行的期刊都是第一卷，2025 年发行的都是第二卷
期号：以月为单位，是几月份出刊就是几
Volume，就是卷，No 是期 pp 是页码