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Notice for the PhD Viva Voce Examination

Ms Radhika S, Registration Number: 1982601, PhD Scholar at the Department of Electrical and Electronics Engineering, School of Engineering and Technology, CHRIST (Deemed to be University) will defend her PhD thesis at the public viva-voce examination on Monday, 11 May 2026 at 10.30 am in CDI Conference Room, III Floor, Block V, Bangalore Kengeri Campus, Bengaluru - 560074, Karnataka, India

Title of the Thesis	:	**Cascaded DC/DC Converter with Photovoltaic for Voltage Regulation and Maximum Power Point Tracking in Battery Charging**
Discipline	:	**Electrical and Electronics Engineering**
External Examiner - I	:	**Dr K Balaraman** Former Director General (Scientist G Grade) Technical Advisor, Indosol National Institute of Wind Energy Ministry of New and Renewable Energy Government of India, Chennai - 600100 Tamil Nadu
External Examiner - II	:	**Dr Y V Pavan Kumar** Professor School of Electronics Engineering VIT-AP University Inavolu, Amaravati - 522241 Andhra Pradesh
Supervisor	:	**Dr Vijaya Margaret** Associate Professor Department of Electrical and Electronics Engineering School of Engineering and Technology CHRIST (Deemed to be University) Bangalore Kengeri Campus Bengaluru - 560074, Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva–voce examination.

Registrar

Place: Bengaluru
Date: 30 April 2026

ABSTRACT

This research presents a Source Load Variable (SLV) voltage-regulated cascaded DC/DC converter that integrates a voltage-lift and boost circuit with a gate-control mechanism to achieve a high, stable output voltage at a lower duty ratio and with minimal voltage fluctuations. The converter is simulated in MATLAB/Simulink to extract the maximum power from the photovoltaic module under varying irradiation and temperature conditions. To enhance power extraction, a soft-computing technique, the artificial bee colony algorithm with constraints, is employed. The converter is evaluated with various battery load types to validate its effectiveness. Results demonstrate that the proposed SLV voltage-regulated cascaded DC/DC converter can deliver maximum power and maintain a regulated voltage, making it suitable for efficient battery charging in electric vehicle applications powered by photovoltaic systems.

Keywords: *Artificial Bee Colony, Cascaded DC/DC Converter, Regulated Voltage, Photovoltaic System, Maximum Power Point Tracking, Voltage Lift Technique.*

Publications:

1. **Radhika Salyam** & Margaret, V. (2023). Source-load-variable voltage regulated cascaded DC/DC converter for a DC microgrid system. International Journal of Electrical and Computer Engineering (IJECE), 13(1), 107–115.
2. **Radhika Salyam** & Margaret, V. (2023). Soft computing approaches for maximum power point tracking of solar PV system. International Review of Electrical Engineering, 18(6).
3. **Radhika Salyam** & Margaret, V. (2022). A Review of Comprehension and Operation of DC/DC Converters Precisely Voltage Multiplier and Voltage Lift Converters. SSRG International Journal of Electrical and Electronics Engineering, 9(11), 25–35.
4. **Radhika Salyam** & Margaret, V. (2020). A comparative assessment of cascaded double voltage lift boost converter. 2020 Fifth IEEE International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN), 177–180. IEEE.
5. **Radhika Salyam** & Margaret, V. (2021). A review on DC-DC converters with photovoltaic system in DC microgrid. Journal of Physics: Conference Series, 1804, 012155.
6. **Radhika Salyam** & Margaret, V. (2021). SLV voltage regulated cascaded DC/DC converter (Indian Patent Application No. 202141046671). Office of Controller General of Patents, Designs & trade Marks, Government of India. Published November 26, 2021.