

**Tapas Roy, Assistant Professor**  
**Publications**

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- **Tapas Roy** and P. K. Sadhu, "A Step-Up Multilevel Inverter Topology Using Novel Switched Capacitor Converters With Reduced Components," in *IEEE Transactions on Industrial Electronics*, vol. 68, no. 1, pp. 236-247, Jan. 2021, doi: 10.1109/TIE.2020.2965458. (IF-7.7, SCI-E)
- **Tapas Roy**, M. W. Tesfay, B. Nayak and C. K. Panigrahi, "A 7-Level Switched Capacitor Multilevel Inverter With Reduced Switches and Voltage Stresses," in *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 68, no. 12, pp. 3587-3591, Dec. 2021, doi: 10.1109/TCSII.2021.3078903. (IF-4.4, SCI-E)
- **Tapas Roy**, P. K. Sadhu and A. Dasgupta, "Cross-Switched Multilevel Inverter Using Novel Switched Capacitor Converters," in *IEEE Transactions on Industrial Electronics*, vol. 66, no. 11, pp. 8521-8532, Nov. 2019, doi: 10.1109/TIE.2018.2889632. (IF-7.7, SCI-E)
- **Tapas Roy**, "A Step-Up Multilevel Inverter Based on Switched Capacitor Technique With Reduced Components," in CPSS Transactions on Power Electronics and Applications, vol. 9, no. 2, pp. 175-189, June 2024, doi: 10.24295/CPSSTPEA.2023.00053
- **Tapas Roy** and Pradip K Sadhu, "A step-up multilevel inverter with reduced devices and input current ripple" *International Journal of Electronics*, 2023 DOI: 10.1080/00207217.2022.2140837.(IF-1.3, SCI-E)
- **Tapas Roy**, Sitakant Debata and Pradip K Sadhu, "A high boost switched capacitor multilevel inverter with reduced components" *International Journal of Electronics*, 2023 DOI: 10.1080/00207217.2023.2248664.(IF-1.3, SCI-E)
- **Tapas Roy**, P. K. Sadhu and C. K. Panigrahi, "A switched-capacitor-based step-up multilevel inverter and its cascaded configuration using reduced number of components." *International Transactions on Electrical Energy Systems*, 31(2), 1-23, 2021 DOI: 10.1002/2050-7038.12721. (IF-2.3, SCI-E)
- **Tapas Roy** and P. K. Sadhu, "A novel symmetric switched capacitor multilevel inverter using non-isolated power supplies with reduced number of components". in *Sādhanā*, vol. 45, no. 1, pp 111-122, May 2020. <https://doi.org/10.1007/s12046-020-01357-7>.(IF-1.6, SCI-E)
- **Tapas Roy** et. al., "Step-up switched capacitor multilevel inverter with a cascaded structure in asymmetric dc source configuration." *Journal of power electronics*, 18(4), 2018, 1051-1066. DOI: [10.6113/JPE.2018.18.4.1051](https://doi.org/10.6113/JPE.2018.18.4.1051).(IF-1.4, SCI-E)
- **Tapas Roy**, P. K. Sadhu, and A. Dasgupta, "A new single phase multilevel inverter topology with two-step voltage boosting capability. *Journal of power electronics*, 17(5), 2017, 1173-1185. DOI: 10.6113/JPE.2017.17.5.1173.(IF-1.4, SCI-E)
- **Tapas Roy** et. al., "A Novel Three Phase Multilevel Inverter Structure using Switched Capacitor Basic Unit for Renewable Energy Conversion Systems" *International Journal of Power Electronics*, 10(1/2), 133 - 154, 2019. DOI:10.1504/IJPELEC.2019.096818. (Scopus)

- **Tapas Roy**, Neha Aarzoo, Abhijit Dasgupta, “Development of generalised and optimum structures of a multilevel inverter using switched capacitor technique for renewable energy conversion systems” *International Journal of Power Electronics*, 14(1), 169 - 197, 2021. DOI:10.1504/IJPELEC.2021.116649.(Scopus)
- D Roy, M Singh and **Tapas Roy**, “ A Novel Approach for Space Vector Based PWM Algorithm for Diode Clamped Three level VSI Fed Induction Motor Drive”, in **International Journal of Power Electronics and Drive System**, 8(4), 1534-1547, 2017. (Scopus)
- Gashaw Ango, **Tapas Roy**, and Pradip Kumar Sadhu, “ A Novel Switched Capacitor Based Multilevel Inverter Structure for Renewable Energy Conversion System, in **International Journal of Power Electronics**, 16(1), 1-33, 2022. (Scopus)

### Conference Publications:

- **Tapas Roy**, S K Swain, R Athapaththu, R Patel, S Das, and S K Patro, “ A Single-Source-Based 13-Level Switched Capacitor Multilevel Inverter with Reduced Components”, in 2023 IEEE 3rd International Conference on Smart Technologies for Power, Energy and Control (STPEC), Bhubaneswar, India, 2023, pp. 1-6.
- A. Abhishek, R. Patel, **Tapas Roy**, C. K. Panigrahi and V. Khadkikar, “A High Gain Modified Quadratic Boost Converter using Switched Capacitor and Inductor Network”, in 2023 IEEE 3rd International Conference on Smart Technologies for Power, Energy and Control (STPEC), Bhubaneswar, India, 2023, pp. 1-6.
- S. Behera, R. Patel, B. Nayak, **Tapas Roy**, J. M. Guerrero, “Improved Voltage Gain L- Impedance Hybrid Quadratic Boost Cuk DC-DC Converter(L-HQBC) for Fuel Cell Application”, in 2023 IEEE 3rd International Conference on Smart Technologies for Power, Energy and Control (STPEC), Bhubaneswar, India, 2023, pp. 1-6.
- A. K. Bharti, **Tapas Roy**, A. Choudhury, P. Samal and S. K. Barik, "A Single-Source 13-level Switched-Capacitor Multilevel Inverter with a Lower Switch Count," 2023 IEEE 2nd International Conference on Industrial Electronics: Developments & Applications (ICIDeA), Imphal, India, 2023, pp. 296-301, doi: 10.1109/ICIDeA59866.2023.10295202.
- A. Abhishek, R. Patel, **Tapas Roy**, C. K. Panigrahi and V. Khadkikar, "Improved High Gain Quadratic Boost Converter Using Voltage Lifting Technique and Reduced Voltage Stress," 2023 IEEE 3rd International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Bhubaneswar, India, 2023, pp. 1-6, doi: 10.1109/SeFeT57834.2023.10245660.
- S. Behera, R. Patel, B. Nayak and **Tapas Roy**, "High Gain Modified Quadratic Boost-Cuk Converter with L-Impedance Network for Fuel Cell Application," 2023 IEEE 3rd International Conference on Sustainable Energy and Future Electric Transportation (SEFET), Bhubaneswar, India, 2023, pp. 1-6, doi: 10.1109/SeFeT57834.2023.10244914.
- A. Abhishek, R. Patel, **Tapas Roy**, C. K. Panigrahi and V. Khadkikar, "Multi-device L-impedance CLD Cell DC-DC Boost Converter," 2023 International Conference on Power Electronics and Energy (ICPEE), Bhubaneswar, India, 2023, pp. 1-8, doi: 10.1109/ICPEE54198.2023.10059830.

- A. Abhishek, R. Patel, **Tapas Roy** and C. K. Panigrahi, "L-Impedance Multi-stage DC-DC Boost Converter with CLD cell for High Voltage Gain and Reduced Switch Voltage Stress," 2022 IEEE 19th India Council International Conference (INDICON), Kochi, India, 2022, pp. 1-6, doi: 10.1109/INDICON56171.2022.10039846.
- R. Mohanty, S. R. Sahoo and **Tapas Roy**, "A Novel Asymmetric Multilevel Inverter with Reduced Components and Lower Source Variety," 2022 IEEE India Council International Subsections Conference (INDISCON), Bhubaneswar, India, 2022, pp. 1-6, doi: 10.1109/INDISCON54605.2022.9862870.
- P. R. Mishra, S. Jha and **Tapas Roy**, "A Novel 15-Level Asymmetric Modified T-Type Inverter with Reduced Device count," 2021 IEEE 18th India Council International Conference (INDICON), 2021, pp. 1-6, doi: 10.1109/INDICON52576.2021.9691644.
- S. K. Swain, **Tapas Roy**, T. R. Choudhury and S. Mohapatra, "A Step-up Multilevel Inverter Structure using Switched Capacitor technique with Non-isolated Power Sources and Reduced Devices," 2021 1st International Conference on Power Electronics and Energy (ICPEE), 2021, pp. 1-6, doi: 10.1109/ICPEE50452.2021.9358617.
- M. W. Tesfay, **Tapas Roy**, S. K. Swain and L. Nanda, "A Novel Step-up 7L Switched-Capacitor Multilevel Inverter and Its Extended Structure," 2021 1st International Conference on Power Electronics and Energy (ICPEE), 2021, pp. 1-6, doi: 10.1109/ICPEE50452.2021.9358651.
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- **Tapas Roy**, S. Majhee, A. Dasgupta and A. Chakraborty, "A Novel Step-Up Multilevel Inverter Based On Switched-Capacitor Technique For Renewable Energy Conversion System," 2019 IEEE International Conference on Sustainable Energy Technologies and Systems (ICSETS), 2019, pp. 097-102, doi: 10.1109/ICSETS.2019.8745207.
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- Diptish Saha, and **Tapas Roy**, "A New Symmetrical Three Phase Multilevel Inverter using Switched Capacitor Basic Units for Renewable Energy Conversion Systems", International Conference on Control, Power Communication and Computing Technologies (ICCPCT-2018), March 22-23, 2018, Kannur, India.
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- **Tapas Roy**, and P. K. Sadhu, "A Novel 7-Level Switched-Capacitor Multilevel Inverter with Reduced Components for Renewable Energy Conversion Systems" in Innovation in Electrical Power Engineering, Communication, and Computing Technology. Lecture Notes in Electrical Engineering, vol 814 2022 Springer, Singapore. [https://doi.org/10.1007/978-981-16-7076-3\\_38](https://doi.org/10.1007/978-981-16-7076-3_38).
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- **Tapas Roy**, Pavan Kumar Hari, and G Narayanan, "Study on the Effect of Dead Time and Its Compensation for Bus-Clamping PWM Techniques, In National Power Electronics Conference (NPEC) 20-22 December, 2013, IIT Kanpur.