

RESEARCH PUBLICATIONS:

Dr. K. C. Jana, Associate Professor, EE Dept., IIT(ISM) Dhanbad

(a) International Journal Published (SCI/SCIE Indexed Journal)

2025

1. S. Tripathi, A. Shrivastava, & **K. C. Jana**, “EO based fuzzy optimal controller for solar MPPT and battery charging circuit for EV charging application”, *International Journal of Dynamics and Control (Springer)* 13 (2), 66, (**Q2 Journal, SCIE, IF: 2.2**) (2025), DOI: 10.1007/s40435-024-01582-6.
2. Ankit Kumar Soni, **Kartick Chandra Jana**, Deepak Kumar Gupta, Pradipta Kumar Pal, and Amit kumar V. Jha “Design and Analysis of an Adaptive Global Maximum Power Point Tracking Algorithm for Enhanced Partial Shading Detection and GMPP Tracking” accepted in *Arabian Journal for Science and Engineering*, 2025 (**Q2 Journal, SCIE, IF:2.6**).

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3. Khalid Raza Khan, Suryakant Kumar, Vedantham Lakshmi Srinivas, Ram Khelawan Saket, **Kartick Chandra Jana**, and Gauri Shankar, “Voltage Stabilization Control with Hybrid Renewable Power Sources in DC Microgrid” Accepted for publication to *IEEE Transactions on Industry Applications*, 2024 (**Q1 Journal, SCIE, IF: 4.2**).
4. Sandeep Tripathy, Ashish Shrivastava, and **Kartick C. Jana**, “An Efficient Energy Management System for a Microgrid System Considering the Volatility of Hybrid Renewable Energy” has been accepted for publication in the *International Journal of Hydrogen Energy* (**Q1 Journal, SCIE, IF: 8.1**), Dec 2024. DOI: 10.1109/TIA.2024.3520087.
5. Bikramaditya Chandan, Pradipta Kumar Pal, **Kartick Chandra Jana**, and Yam P. Siwakoti, “Performance Evaluation of a New Transformerless Grid-Connected Six-Level Inverter with Integrated Voltage Boosting”, *IEEE Journal of Emerging and Selected Topics in Power Electronics (JESTPE)*, Vol. 12(5), 4361-4376, 2024 (**Q1 Journal, SCIE, IF: 4.6**), 2024, DOI: 10.1109/JESTPE.2024.3427766.
6. Chandan, B., Pal, P. K., & **Jana, K. C.**, “Performance Evaluation of a 17-Level Octuple Boost Inverter for a Grid-connected PV System” *IEEE Access*, Vol. 12(), 87284-87298 (2024), (**Q1 Journal, SCIE, IF: 5.462**), DOI: 10.1109/ACCESS.2024.3409171.

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7. Pradipta Kumar Pal, **Kartick Chandra Jana**, Yam P. Siwakoti, Jagabar Sathik Mohamed Ali, and Frede Blaabjerg, “A Switched-Capacitor Multilevel Inverter with Modified Pulse-Width Modulation and Active DC-Link Capacitor Voltage Balancing” *IEEE Journal of Emerging and Selected Topics in Power Electronics (JESTPE)*, Vol. 12, No. 2, April 2024 (**Q1 Journal, SCIE, IF: 5.462**), DOI [10.1109/JESTPE.2023.3285690](https://doi.org/10.1109/JESTPE.2023.3285690).
8. Bidyut Mahato, Saikat Majumdar, **Kartick Chandra Jana**, Ebrahim Babaei, Dushmanta Kumar Mohanta, “A New Switch-Diode Cell-Based Single-Phase Cascaded Multilevel Inverter”, *Soft Computing*, 27 (19), 13719-13738 (Springer) (**Q2 Journal, SCIE, IF: 3.732**), [10.1007/s00500-023-09006-x](https://doi.org/10.1007/s00500-023-09006-x).
9. Amit Rai, Ashish Shrivastava, and **Kartick C. Jana**, “Differential Attention Net: Multi-Directed Differential Attention Based Hybrid Deep Learning Model for Solar Power Forecasting” *Energy*, 263(2023), Part C, 2023, 125746 (**Q1 Journal, SCI, IF:8.857**), [10.1016/j.energy.2022.125746](https://doi.org/10.1016/j.energy.2022.125746).
10. Sandeep Tripathy, Ashish Shrivastava, and **Kartick C. Jana**, “Chimp optimization-based fuzzy controller for Hybrid electric vehicle speed control using electronic throttle plate, *Optimal Control, Applications and Methods*, 45 (1), Jan/Feb 2024, p.p. 163-184 (**Q3 Journal, SCIE, IF: 1.95**), [10.1002/oca.3051](https://doi.org/10.1002/oca.3051).

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11. Saikat Majumdar, Pradipta Kumar Pal, Samrat Paul, Bidyut Mahato, **Kartick Chandra Jana** & Frede Blaabjerg, “Performance Evaluation of a 15-level Inverter using Two DC Sources with Lower Standing Voltage”, *International Journal of Electronics*, Vol. 111, Iss. 2, p.223-237 (2022), (**SCIE Q3, IF:1.336**), [10.1080/00207217.2022.2163300](https://doi.org/10.1080/00207217.2022.2163300).
12. Amit Rai, Ashish Shrivastava, and **Kartick C. Jana**, “An Empirical Analysis of Machine Learning Algorithms for Solar Power Forecasting in High Dimensional Uncertain Environment”, *IETE Technical Review*, Vol. 40, No. 4, 558–573 2022 (**SCIE Q3, IF:2.2**), [10.1080/02564602.2022.2136270](https://doi.org/10.1080/02564602.2022.2136270).
13. Bidyut Mahato, Saikat Majumdar, **Kartick Chandra Jana**, Amit Agrawal, Ashish Shrivastava, “A Generalized Series-Connected Multilevel Inverter (MLI) Based on Reduced Power Electronic Devices for Symmetrical/Asymmetrical Sources”, *Arabian Journal for Science and Engineering*, Vol. 48, p.p. 5907–5924 (2023) (**SCIE Q2, IF: 2.334**), [10.1007/s13369-022-07066-z](https://doi.org/10.1007/s13369-022-07066-z).
14. Pradipta Kumar Pal, **Kartick Chandra Jana**, Yam P. Siwakoti, Saikat Majumdar, and Frede Blaabjerg, "An Active-Neutral-Point-Clamped Switched-Capacitor Multilevel Inverter with Quasi-Resonant Capacitor Charging" *IEEE Transactions on Power Electronics*, 37(12), p.p-14888-15001, Dec 2022 (Q1 Journal, **SCI, IF: 6.153**),

15. Srihari Gude, **Kartick Chandra Jana**, Antonino Laudani, Sudhakar Babu Thanikanti, "Parameter extraction of photovoltaic cell based on a multi-objective approach using nondominated sorting cuckoo search optimization", **Journal of Solar Energy**, 239(2022), p.p.- 359-374, 2022 (Q2 Journal, SCIE, IF: 5.742), [10.1016/j.solener.2022.05.007](#).
16. Amit Rai, Ashish Shrivastava, and **Kartick C. Jana**. "A robust auto encoder-gated recurrent unit (AE-GRU) based deep learning approach for short term solar power forecasting." *Optik*, 252 (2022): 168515 (Q2 Journal, SCI, IF: 2.84), [10.1016/j.ijleo.2021.168515](#).
17. Srihari Gude, **Kartick Chandra Jana**, "A multiagent system based cuckoo search optimization for parameter identification of photovoltaic cell using Lambert W-function." **Applied Soft Computing**, vol. 120 (2022): 108678 (Q1 Journal, SCIE, IF: 6.725), [10.1016/j.asoc.2022.108678](#).
18. Saikat Majumdar, **Kartick Chandra Jana**, Pradipta Kumar Pal, Ariya Sangwongwanich, and Frede Blaabjerg, "Design and Implementation of a Single source 17-level Inverter for a Single-phase Transformer-less Grid-Connected Photovoltaic Systems", **IEEE Journal of Emerging and Selected Topics in Power Electronics**, 10(4), p.p-4469-4485, Aug 2022 (Q1 Journal, SCIE, IF:4.47), [10.1109/JESTPE.2021.3133369](#).
19. Samrat Paul, **Kartick Chandra Jana**, Saikat Majumdar, Pradipta Kumar Pal, and Bidyut Mahato, "Performance Analysis of a Multi-module Staircase (MM-STC) Type Multilevel Inverter with Reduced Component Count and Improved Efficiency", **IEEE Journal of Emerging and Selected Topics in Power Electronics**, 10(6), Dec 2022, p.p- 6619-6633 (Q1 Journal, SCIE, IF:4.47), [10.1109/JESTPE.2021.3133346](#).

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20. Amit Rai, Ashish Shrivastava, **Kartick C. Jana**, "A CNN-BiLSTM based deep learning model for mid-term solar radiation prediction", *International Transactions on Electrical Energy Systems*, 31(9), e12664 (DOI: 10.1002/2050-7038.12664) (Q2 Journal, SCIE, IF:2.86), 2021, [10.1002/2050-7038.12664](#).
21. Amit Rai, Ashish Shrivastava, **Kartick C. Jana** & N. S. Jayalakshmi, "Techno-economic-environmental and sociological study of a microgrid for the electrification of difficult un-electrified isolated villages", *Journal of Sustainable Energy, Grids and Networks (Elsevier)*, 28(2021), 100548 (Q1 Journal, SCIE, IF:3.899), [10.1016/j.segan.2021.100548](#).
22. Amit Rai, Ashish Shrivastava, and **Kartick C. Jana**, "A Cost-Emission Based Multi-Objective Dynamic Economic Dispatch Considering Solar-Wind Curtailment Cost", *IETE Journal of Research* (doi.org/10.1080/03772063.2021.1958071), (SCIE, IF:1.03), [10.1080/03772063.2021.1958071](#).
23. B Mahato, S Majumdar, **K C Jana**, P Thakura, D Kumar Mohanta, "Experimental Verification of a New Scheme of MLI Based on Modified T-Type Inverter and Switched-Diode Cell with Lower Number of Circuit Devices", *Electric Power Components and Systems*, 48(16-17), p.p-1814-1834, 2021 (SCIE, IF:1.071), [10.1080/15325008.2021.1906793](#).
24. Saikat Majumdar, Bidyut Mahato and **K. C. Jana**, "Analysis and implementation of a generalized switched-capacitor multi-level inverter having the lower total standing voltage", *IET Power Electronics*, 13(17), p.p. 4031-4042 (doi:10.1049/iet-pel.2020.0458), (Q2 Journal, SCIE, IF: 2.67), 2021, [10.1049/iet-pel.2020.0458](#).
25. B. Mahato, S. Majumdar, S. Paul, P K Pal, K. C. Jana, "A New and Modular Back-to-Back Connected T-Type Inverter for Minimum Number of Power Devices, TSV, and Cost Factor", *IETE Technical Review*, 39(2), p.p. 357-374 (2022), (SCIE, IF:1.618), [10.1080/02564602.2020.1860838](#).
26. Ankit Kumar Soni, **Kartick Chandra Jana**, and Deepak Kumar Gupta, "Variable Step-size Adaptive Maximum Power Point Tracking Algorithm for Solar Cell under Partial Shading Conditions", *IETE Journal of Research*, 69(3), p.p-1562-1577 (Q3 Journal, SCIE, IF:1.03), 2021, [10.1080/03772063.2020.1871425](#).
27. Saikat Majumdar, Bidyut Mahato, and **K. C. Jana**, "Analysis of most optimal Multi-unit Multi-level inverter having minimum components and lower standing voltage", *IETE Technical Review*, 38(5), 2021, p.p- 520-536 (Q3 Journal, SCIE, IF: 1.618), [10.1080/02564602.2020.1799874](#).
28. Bidyut Mahato, Saikat Majumdar, Sambit Vatsyayan and **Kartick Chandra Jana**, "A New and Generalized Structure of MLI Topology with Half-bridge Cell with Minimum Number of Power Electronic Devices" *Journal of IETE Technical Review*, 38(2), 267-278 (2021) (doi.org/10.1080/02564602.2020.1726215), (Q3 Journal SCIE, IF:1.618), [10.1080/02564602.2020.1726215](#).

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29. A. Sinha, **K. C. Jana**, "A Comprehensive Review on Control Strategies of Parallel-Interfaced Voltage Source Inverters for Distributed Power Generation System", *IET Renewable Power Generation*, 14(13), pp. 2297-2314, June 2020 (Q2 Journal, SCIE, IF:3.605), [10.1049/iet-rpg.2019.1067](#).
30. S. Gude, **K. C. Jana**, "Parameter extraction of photo voltaic cell using an improved cuckoo search optimization", *Solar Energy*, 204(2020), p.p.280-293 (Q2 Journal, SCI, IF: 4.674), [10.1016/j.solener.2020.04.036](#).
31. Sandeep Tripathy, Ashish Shrivastava, and **Kartick C. Jana**, "Self-Tuning fuzzy controller for sun-tracker system

- using Gray Wolf Optimization (GWO) technique" *ISA Transactions*, 101(2020), p.p. 50-59 (Q1 Journal, **SCI, IF:4.34**), [10.1016/j.isatra.2020.01.012](https://doi.org/10.1016/j.isatra.2020.01.012).
32. B Mahato, S Majumdar, **K. C. Jana**, "A new and generalized structure of single-phase and three-phase cascaded multilevel inverter with reduced power components", *International Transactions on Electrical Energy Systems*, 30(2) (Wiley), July 2020 (Q2 Journal, **SCIE, IF:1.619**), [10.1002/2050-7038.12187](https://doi.org/10.1002/2050-7038.12187).
 33. Saikat Majumder, Bidyut Mahato, **K. C. Jana**, "Implementation of an Optimum Reduced Components Multi-cell Multilevel (MC-MLI) Inverter for Lower Standing Voltage", *IEEE Transaction on Industrial Electronics*, 67(4), April 2020, p.p-2765-2775 (**Q1, Journal, SCI, IF: 7.503**), [10.1109/TIE.2019.2913812](https://doi.org/10.1109/TIE.2019.2913812).
 34. Bidyut Mahato, Saikat Majumdar and **Kartick Chandra Jana**, "A New and Generalized MLI with Overall Lesser Power Electronic Devices," *Journal of Circuits, Systems and Computers* (Taylor & Fransis), 29(4), 2020. (**Q4 Journal SCIE, IF: 0.939**), [10.1142/S0218126620500589](https://doi.org/10.1142/S0218126620500589).
 35. Bidyut Mahato, Saikat Majumdar and **Kartick Chandra Jana**, "Reduction of Power Electronic Devices in a Single-phase Generalized Multilevel Inverter," *Journal of Circuits, Systems and Computers* (Taylor & Fransis), 29(6), 2020 (**Q4 Journal, SCIE, IF: 0.939**), [10.1142/S0218126620500930](https://doi.org/10.1142/S0218126620500930).

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36. Akanksha Sinha, **Kartick Chandra Jana**, Madan Kumar Das, "Control of an Asymmetrical Cascaded Multi-level Inverter for a Grid-Connected Photovoltaic system", *IET Renewable Power Generation* 2019, 13(9), pp. 1456-1465, (**Q2 Journal, SCIE, IF:3.605**), [10.1049/iet-rpg.2018.5230](https://doi.org/10.1049/iet-rpg.2018.5230).
37. Akanksha Sinha, **Kartick Chandra Jana**, Madan Kumar Das, "Control Strategy of PV-Fed, Grid-Interfaced, Seven-level T-Type Multi level Inverter for Distributed Power Generation", *IET Power Electronics*, 12(12), p.p-3208-3219, Oct 2019, (**Q2 Journal, SCIE, IF:2.839**), [10.1049/iet-pel.2019.0379](https://doi.org/10.1049/iet-pel.2019.0379).
38. Madan Kr. Das, Akanksha Sinha, **Kartick Chandra Jana**, "A Novel Asymmetrical Reduced Switch Nine-Level Inverter" *Journal of Circuits, Systems and Computers*, 29(8), August, 2019 (DOI:10.1142/S0218126620501170), (**Q4 Journal, SCIE, IF:0.939**), [10.1142/S0218126620501170](https://doi.org/10.1142/S0218126620501170).
39. Bidyut Mahato, Saikat Majumdar and **Kartick Chandra Jana**, "Reduction in controlled power switches for a Single-phase Novel Multilevel Inverter" *International Journal of Electronics*, 106(8), p.p-1200-1215, Mar 2019 (**Q4 Journal, SCIE, IF:1.07**), [10.1080/00207217.2019.1582713](https://doi.org/10.1080/00207217.2019.1582713).
40. Saikat Majumder, Bidyut Mahato, **K.C.Jana**, "Optimum Structure-Based Multi-level Inverter with Doubling Circuit Configuration", *Journal of Circuits, Systems and Computers*, 28(11), 1950194 (2019), (DOI:10.1142/S0218126619501949), (**Q4 Journal, SCIE, IF: 0.939**), [10.1142/S0218126619501949](https://doi.org/10.1142/S0218126619501949).
41. Bidyut Mahato, Saikat Majumdar, and **Kartick Chandra Jana**, "Single-phase Modified T-type-based multilevel inverter with reduced number of power electronic devices" *International Transactions on Electrical Energy Systems* (Wiley), 29(11), 2019(**Q3 Journal, SCIE, IF: 1.619**), [10.1002/2050-7038.12097](https://doi.org/10.1002/2050-7038.12097).
42. Amit Kr. Agrawal, Ashish Shrivastava, **K. C. Jana**, "A Universal Input, Single Stage AC-DC LED Driver for an Auditorium Light," *Journal of Circuits, Systems, and Computers*, 28(2), Feb, 2019 (**Q4 Journal, SCIE, IF:0.939**), [10.1142/S0218126619500245](https://doi.org/10.1142/S0218126619500245).
43. Bidyut Mahato, Parasuram Thakura, **Kartick Chandra Jana**, "Constant V/f Control & Frequency Control of Isolated winding Induction Motor using 9-Level Three-phase Inverter," *Iranian Journal of Science and Technology, Transactions of Electrical Engineering* (Springer), 43(1), pp.123-135, 2019 (**Q4 Journal, SCIE, IF:0.6**), [10.1007/S40998-018-0064-6](https://doi.org/10.1007/S40998-018-0064-6).

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45. Akanksha Sinha, **Kartick Chandra Jana**, Madan Kumar Das, "An Inclusive Review on different Multi-Level Inverter topologies, their Modulation and Control Strategies for a Grid Connected Photo-voltaic System", *Journal of Solar Energy*, ISSN: 0038-092X, 170(2018), pp.633-657 (**Q2 Journal, SCIE, IF:4.674**), [10.1016/j.solener.2018.06.001](https://doi.org/10.1016/j.solener.2018.06.001).
46. Ravi Raushan, Bidyut Mahato, **Kartick Chandra Jana**, "Optimum Structure of a Generalized Three-phase Reduced Switch Multilevel Inverter," *Electric Power Systems Research*, 157(2018), p.p-10–19 (**Q2 Journal, SCIE, IF:3.022**), [10.1016/j.epsr.2017.11.017](https://doi.org/10.1016/j.epsr.2017.11.017).
47. Madan Kr. Das, **Kartick Chandra Jana**, Akanksha Sinha, "Performance Evaluation of an Asymmetrical Reduced Switched Multi-level Inverter for a Grid Connected P.V. System", *IET Renewable Power Generation*, 12(2), pp. 252-263, 2018 (**Q2 Journal, SCIE, IF: 3.605**), [10.1049/iet-rpg.2016.0895](https://doi.org/10.1049/iet-rpg.2016.0895).

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- Open-end Winding Induction Motor with Constant Voltage Levels and Harmonics" IET Power Electronics, 10(1), pp.71–79, 2017 (**Q2 Journal**, SCIE: 2.839), [10.1049/iet-pel.2016.0105](https://doi.org/10.1049/iet-pel.2016.0105).
49. Ravi Raushan, Bidyut Mahato, **Kartick Chandra Jana**, "Comprehensive Analysis of a Novel Three-Phase Multilevel Inverter with Minimum Number of Switches", IET Power Electronics, 9(8), pp.1600–1607, 2016 (**Q2 Journal**, SCIE: 2.839), [10.1049/iet-pel.2015.0682](https://doi.org/10.1049/iet-pel.2015.0682).
 50. **Kartick Chandra Jana**, Sujit Kumar Biswas, Suparna Kar Chowdhury, "Dual reference phase shifted PWM technique for a N-level inverter based grid connected solar photovoltaic system", IET Renewable Power Generation, 10(7), pp.928–935, 2016 (**Q2 Journal**, SCIE, IF:3.605), [10.1049/iet-rpg.2015.0393](https://doi.org/10.1049/iet-rpg.2015.0393).
 51. **Kartick Chandra Jana**, Sujit Kumar Biswas, "Generalised switching scheme for a space vector pulse-width modulation-based N-level inverter with reduced switching frequency and harmonics", IET Power Electronics 8(12), p.p.2377–2385, Dec 2015, (**Q2 Journal**, SCIE:2.839), [10.1049/iet-pel.2015.0101](https://doi.org/10.1049/iet-pel.2015.0101).
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(b) Other Journals (Scopus/ESCI)

1. Sandeep Tripathi, Ashish Shrivastava, and **KC Jana**, "PO based adaptive sliding mode control for PV system under varying load condition," accepted for publication in the journal Materials Today: Proceedings (Elsevier), 2023, [10.1016/j.matpr.2023.02.030](https://doi.org/10.1016/j.matpr.2023.02.030).
2. A Rai, A Shrivastava, **KC Jana**, "A Solution for Power Crisis and Environment Pollution from Electricity Generation-A Study of Sub-tropical Regions", Smart Science 9 (1), 40-50, 2021, [10.1080/23080477.2021.1879430](https://doi.org/10.1080/23080477.2021.1879430).
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6. K. K. Jha, Bidyut Mahato, Prem Prakash, **Kartick Chandra Jana** "Hardware Implementation of Single Phase Power Factor Correction System using Micro-Controller" International Journal of Power Electronics and Drive System (IJPEDS), Vol. 7, No. 3, September, 2016, pp. 787-795 (Scopus Indexed Journal), [10.11591/ijpeds.v7.i3.pp790-799](https://doi.org/10.11591/ijpeds.v7.i3.pp790-799).
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9. Akanksha Sinha, **K. C. Jana**, Ajit Kumar, "Implementation of Optical Fiber Technology in Power Transmission-A Step Above Wireless Technology", International Journal of Applied Engineering Research (IJAER) Vol 10, no-79, pp. 19-23, 2015 (Scopus Indexed Journal)
10. **Kartick Chandra Jana**, Sujit Kumar Biswas, "A Simple and Generalized SVPWM Control of Cascaded H-Bridge Multilevel Inverters", Journal of Electrical Engineering, Volume: 8, 2008, edition 02, pp-30-36.

(c) Book Chapter Published/Accepted: 08 Nos

1. Bidyut Mahato, Saikat Majumdar, Sambit Vatsyayan, KC Jana, "Implementation of a Multi-level Inverter (MLI) with a New Structure with Different Values of D.C. Sources", Nanoelectronics, Circuits and Communication Systems p.p-501-513, Springer, Singapore, 2021, ISBN: 978-981-15-7486-3, [10.1007/978-981-15-7486-3_45](https://doi.org/10.1007/978-981-15-7486-3_45).
2. Samrat Paul, Bidyut Mahato, Saikat Majumdar, KC Jana, "Diode Switch-Based 17-Level Inverter with Lesser Power Electronic Elements", Proceedings of the Fourth International Conference on Microelectronics, Computing and Communication Systems, p.p-1-12, Springer, Singapore, 2021, ISBN: 978-981-15-5546-6, [10.1007/978-981-15-5546-6_1](https://doi.org/10.1007/978-981-15-5546-6_1).
3. Tripathi, S., Shrivastava, A., & **Jana, K. C.** (2020), "GWO Based PID Controller Optimization for Robotic Manipulator", In Intelligent Computing Techniques for Smart Energy Systems (pp. 943-951), Springer, Singapore, 2020, ISBN: 978-981-15-0214-9, [10.1007/978-981-15-0214-9_100](https://doi.org/10.1007/978-981-15-0214-9_100).
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