

Home (<http://ipindia.nic.in/index.htm>) About Us (<http://ipindia.nic.in/about-us.htm>) Who's Who (<http://ipindia.nic.in/whos-who-page.htm>)
 Policy & Programs (<http://ipindia.nic.in/policy-pages.htm>) Achievements (<http://ipindia.nic.in/achievements-page.htm>)
 RTI (<http://ipindia.nic.in/right-to-information.htm>) Feedback (<https://ipindiaonline.gov.in/feedback>) Sitemap (<http://ipindia.nic.in/itemap.htm>)
 Contact Us (<http://ipindia.nic.in/contact-us.htm>) Help Line (<http://ipindia.nic.in/helpline-page.htm>)

[Skip to Main Content](#)



(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in>)

Patent Search

Invention Title	A MULTIPOINT DUAL INPUT-DUAL OUTPUT CONVERTER FOR ELECTRIC VEHICLE APPLICATIONS
Publication Number	45/2024
Publication Date	08/11/2024
Publication Type	INA
Application Number	202441081834
Application Filing Date	26/10/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRICAL
Classification (IPC)	H02M3/00, H02M1/00

Inventor

Name	Address	Country	Nat
Dr. Reddi Khasim Shaik	Associate Professor, Dept. of EEE, Vishnu Institute of Technology, Bhimavaram	India	Ind
Dr. Idamakanti Kasireddy	Associate Professor, Dept. of EEE, Vishnu Institute of Technology, Bhimavaram	India	Ind
Mr. P. Naveen	Associate Professor, Dept. of EEE, Vishnu Institute of Technology, Bhimavaram	India	Ind
Dr. R.V.D Rama Rao	Associate Professor, Dept. of EEE, Vishnu Institute of Technology, Bhimavaram	India	Ind

Applicant

Name	Address	Country	Natio
VISHNU INSTITUTE OF TECHNOLOGY, BHIMAVARAM	VISHNUPUR, KOVADA, BHIMAVARAM	India	India

Abstract:

This work presents a non-isolated multi-port power converter feasible to hybridize energy alternatives in electric vehicles. Due to the hybridization of the various input there are several advantages in load power distribution in the system. Flexible control of discharging as well as the charging process concerning the energy sources can be achieved. The developed converter can be able to boost the voltage levels by with dual inputs such as a renewable solar PV and the other input as a battery and provide outputs with various voltage levels, which can be able to suit the converter fed for several loads like motor drive and the low rated loads like lighting and other auxiliary loads in electric vehicles. Also, as the various voltages appear at the output, this converter can be interfaced with multilevel inverters fed electric vehicle drivetrain. The utilization of multilevel inverters reduces the total harmonic distortion and torque ripples in the motor drives in electric vehicles. The proposed converter consists of less number of components making the circuit simple and cost-effective.

Complete Specification

Description:The multipoint dual-input dual-output (DIDO) converter introduced in this invention is designed to efficiently manage the flow of power between multiple energy sources and loads in electric vehicle (EV) applications. This configuration enables optimized energy sharing, ensuring the vehicle operates efficiently under various load and source conditions.

The DIDO converter features a high-frequency switching architecture to minimize energy losses and improve power conversion efficiency. It supports bidirectional power flow, allowing not only the delivery of energy to loads but also the recovery of energy through regenerative braking. This capability helps recharge batteries or capacitors during deceleration, enhancing vehicle range and energy utilization.

A key element of the system is its control strategy, which dynamically manages the power flow between inputs and outputs based on the vehicle's real-time energy requirements. The system's adaptability makes it suitable for hybrid energy configurations and supports scalability for different EV models, from passenger vehicles to commercial fleets. This invention significantly contributes to improving EV performance by providing a reliable, flexible, and efficient energy management solution. **Claims:**A multipoint dual-input dual-output (DIDO) converter for electric vehicle applications, configured to facilitate simultaneous power management from two independent energy sources to distinct output loads.

The DIDO converter as claimed in Claim 1, wherein the energy sources include batteries, ultracapacitors, fuel cells, solar panels, or other renewable energy sources. A modular and compact design of the DIDO converter, allowing it to be easily integrated into different electric vehicle architectures, reducing system size, weight, and complexity. Scalability of the converter architecture, enabling it to support various types of electric vehicles, including passenger cars, commercial fleets, and hybrid configurations. **The DIDO converter as claimed in any of the preceding claims, designed to improve energy efficiency, extend vehicle range, and enhance the overall performance of the electric vehicle.**

[View Application Status](#)



Terms & conditions (<http://ipindia.gov.in/terms-conditions.htm>) Privacy Policy (<http://ipindia.gov.in/privacy-policy.htm>)
Copyright (<http://ipindia.gov.in/copyright.htm>) Hyperlinking Policy (<http://ipindia.gov.in/hyperlinking-policy.htm>)
Accessibility (<http://ipindia.gov.in/accessibility.htm>) Archive (<http://ipindia.gov.in/archive.htm>) Contact Us (<http://ipindia.gov.in/contact-us.htm>)
Help (<http://ipindia.gov.in/help.htm>)

Content Owned, updated and maintained by Intellectual Property India, All Rights Reserved.

Page last updated on: 26/06/2019