

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202441016152 A

(19) INDIA

(22) Date of filing of Application :07/03/2024

(43) Publication Date : 22/03/2024

(54) Title of the invention : A NOVEL DESIGN CONTROL OF A THREE-PHASE HYBRID CONVERTER FOR PV ELECTRIC VEHICLE CHARGING STATION

<p>(51) International classification :B60L53/51, G05F1/67, H02J3/38, H02J7/00</p> <p>(86) International Application No :NA</p> <p>Filing Date :NA</p> <p>(87) International Publication No :NA</p> <p>(61) Patent of Addition to Application Number :NA</p> <p>Filing Date :NA</p> <p>(62) Divisional to Application Number :NA</p> <p>Filing Date :NA</p>	<p>(71)Name of Applicant :</p> <p>1)Mrs. Chandra Rakhee B, St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. Address of Applicant :St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. -----</p> <p>2)Mr. Kaveripakam V Thulasi Ram , Nbkr Institute of Science And Technology,21/135,Karkana Street ,Venkatagiri,Tirupati Dst A.P 524132</p> <p>3)Ms. Vallamkonda Usha Rani, St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India.</p> <p>4)Ms.Rekha S, Amruta College of Engineering And Management Science, AIEMS, Bidadi, Bangalore-562109</p> <p>5)Ms.Manjupriya R, Dhirajlal Gandhi College of Technology, Salem Tn, India. Pin Code: 636 309</p> <p>6)Mr. Mungara Sudheer Babu, Mallareddy Engineering College and Management Sciences, Kistapur Village, Medchal, Mandal, Telangana 501401</p> <p>7)Mr. Ramiseti Thanuja, Guru Nanak Institute of Technology, Ibrahimpatnam, R. R. Dist, Hyderabad - 501506, Telangana, India.</p> <p>8)Mr. Shaik Mohammed Uzair, St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India.</p> <p>9)Ms. Parankusham Priyanka, St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India.</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor :</p> <p>1)Mrs. Chandra Rakhee B, St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. Address of Applicant :St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. -----</p> <p>2)Mr. Kaveripakam V Thulasi Ram , Nbkr Institute of Science And Technology,21/135,Karkana Street ,Venkatagiri,Tirupati Dst A.P 524132 Address of Applicant :Nbkr Institute of Science And Technology,21/135,Karkana Street ,Venkatagiri,Tirupati Dst A.P 524132 -----</p> <p>3)Ms. Vallamkonda Usha Rani, St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. Address of Applicant :St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. -----</p> <p>4)Ms.Rekha S, Amruta College of Engineering And Management Science, AIEMS, Bidadi, Bangalore-562109 Address of Applicant :Amruta College of Engineering And Management Science, AIEMS, Bidadi, Bangalore-562109 -----</p> <p>5)Ms.Manjupriya R, Dhirajlal Gandhi College of Technology, Salem Tn, India. Pin Code: 636 309 Address of Applicant :Dhirajlal Gandhi College of Technology, Salem Tn, India. Pin Code: 636 309 -----</p> <p>6)Mr. Mungara Sudheer Babu, Mallareddy Engineering College and Management Sciences, Kistapur Village, Medchal, Mandal, Telangana 501401 Address of Applicant :Mallareddy Engineering College and Management Sciences, Kistapur Village, Medchal, Mandal, Telangana 501401 -----</p> <p>7)Mr. Ramiseti Thanuja, Guru Nanak Institute of Technology, Ibrahimpatnam, R. R. Dist, Hyderabad - 501506, Telangana, India. Address of Applicant :Guru Nanak Institute of Technology, Ibrahimpatnam, R. R. Dist, Hyderabad - 501506, Telangana, India. -----</p> <p>8)Mr. Shaik Mohammed Uzair, St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. Address of Applicant :St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. -----</p> <p>9)Ms. Parankusham Priyanka, St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. Address of Applicant :St. Martin's Engineering College,Dhulapally, Kompally, Secunderabad,Telangana, 500100,India. -----</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

(57) Abstract :

The transition towards sustainable transportation infrastructure has spurred the development of innovative solutions to integrate renewable energy sources with electric vehicle (EV) charging operations. In this idea, we propose a novel three-phase hybrid converter system designed specifically for PV electric vehicle charging stations. This system aims to optimize the utilization of solar energy for EV charging while ensuring grid stability, reliability, and cost-effectiveness. Key features of the proposed system include advanced power electronics, sophisticated control algorithms, and intelligent energy management strategies. The system enables bidirectional power flow between the PV array, the electric grid, and the EV battery, allowing for efficient energy conversion and grid interaction. Through dynamic load balancing, maximum power point tracking (MPPT), and grid interaction control, the system optimizes energy utilization, minimizes environmental impact, and reduces overall operational costs. Furthermore, the system offers scalability, adaptability, and interoperability, facilitating easy integration into existing charging infrastructure and future expansion to meet growing demand. The proposed three-phase hybrid converter system represents a significant advancement in sustainable transportation infrastructure, paving the way for a cleaner, greener, and more resilient future of electric transportation.

No. of Pages : 12 No. of Claims : 5