

(54) Title of the invention : INNOVATIVE POWER ELECTRONICS SOLUTIONS FOR EFFICIENT ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

<p>(51) International classification :G06Q0050060000, G06Q0010060000, H02J0003380000, B60L0053510000, B60L0053660000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Mr. Talari Manohar Address of Applicant :Assistant Professor, Bharatiya Engineering Science and Technology Innovation University, Mandrol Lakeside Campus, Gownivarpalli, Anantapur, Pin:515231, Andhra Pradesh, India. ----- 2)Dr. M.R. Sreelakshmi 3)Mrs. Bathala Neeraja 4)Prof. Rajender Boini 5)Dr. J.S.V. Siva Kumar 6)Mrs. Sucharita Pal 7)Mr. Kedam. Ramesh 8)Dr. Belsam Jeba Ananth. M 9)Dr. Vijayalakshmi K 10)Dr. Sarat Kumar Swain 11)Dr. Harikumar Pallathadka Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)Mr. Talari Manohar Address of Applicant :Assistant Professor, Bharatiya Engineering Science and Technology Innovation University, Mandrol Lakeside Campus, Gownivarpalli, Anantapur, Pin:515231, Andhra Pradesh, India. ----- 2)Dr. M.R. Sreelakshmi Address of Applicant :Associate Professor, CMREC, Medchal, Malkajgiri, Pin: 501401, Telangana, India. ----- 3)Mrs. Bathala Neeraja Address of Applicant :Lecturer, Government Polytechnic, Hyderabad, Masabtank, Pin:500027, Telangana, India. ----- 4)Prof. Rajender Boini Address of Applicant :Professor, Chaitanya (Deemed to be University), Hanamkonda, Pin:506001, Telangana, India. ----- 5)Dr. J.S.V. Siva Kumar Address of Applicant :Associate Professor, Department of EEE, GMRICT, Rajam, Vizianagram, Pin: 532127, Andhra Pradesh, India. ----- 6)Mrs. Sucharita Pal Address of Applicant :Assistant Professor, Department of Electrical Engineering, Asansol Engineering College, Asansol, Pin: 713305, West Bengal, India. ----- 7)Mr. Kedam. Ramesh Address of Applicant :Assistant Professor, Vaageswari College of Engineering, Ramakrishna Colony, Himmapur, Karimnagar, Pin: 505527, Telangana, India. ----- 8)Dr. Belsam Jeba Ananth. M Address of Applicant :Associate Professor, Department of Mechatronics Engineering, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Pin: 603203, Tamil Nadu, India. ----- 9)Dr. Vijayalakshmi K Address of Applicant :Assistant Professor, SRMIST Ramapuram Campus, Kancheepuram, Pin:600089, Tamilnadu, India. ----- 10)Dr. Sarat Kumar Swain Address of Applicant :Professor, GITA Autonomous College, Bhubaneswar, AT/PO- Madanpur, Khordha, Pin:752054, Odisha, India. ----- 11)Dr. Harikumar Pallathadka Address of Applicant :Director and Professor, Manipur International University, Ghari, Imphal, Imphal West, Pin: 795140, Manipur, India. -----</p>
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(57) Abstract :

The presented invention introduces a revolutionary approach to electric vehicle (EV) charging infrastructure, incorporating advanced power electronics solutions to optimize efficiency, reliability, and sustainability. Through dynamic power conversion algorithms, smart grid integration, and energy storage capabilities, the system significantly reduces charging times, minimizes energy losses, and enhances overall grid stability. Furthermore, embodiments featuring integrated renewable energy sources and a distributed charging network with edge computing showcase the invention's commitment to eco-friendly practices and adaptability in response to the evolving demands of the electric vehicle industry. This comprehensive solution aims to redefine the standards for EV charging, fostering a more efficient, user-friendly, and environmentally conscious charging ecosystem.

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