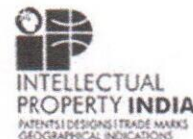




Office of the Controller General of Patents, Designs & Trade Marks
Department of Industrial Policy & Promotion,
Ministry of Commerce & Industry,
Government of India



(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application : 11/03/2023

(21) Application No. 202331016266 A

(43) Publication Date : 24/03/2023

(54) Title of the invention : Analysis of a 15-level minimum component Inverter

(51) International classification	: G06F 151600, G06F 151730, G09G 033400, H02M 074800, H04L 450000	(71) Name of Applicant : 1) SWAMI VIVEKANANDA UNIVERSITY Address of Applicant : Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal - 700121 Bara Kanthalia -----
(86) International Application No	: PCT//	Name of Applicant : NA Address of Applicant : NA
Filing Date	: 01/01/1900	(72) Name of Inventor : 1) MR. ABHISHEK DHAR Address of Applicant : SWAMI VIVEKANANDA UNIVERSITY Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal - 700121 Bara Kanthalia -----
(87) International Publication No	: NA	2) DR. SAIKAT MAJUMDAR Address of Applicant : SWAMI VIVEKANANDA UNIVERSITY Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal - 700121 Bara Kanthalia -----
(61) Patent of Addition to Application Number	: NA	3) MR. SAURABH ADHIKARI Address of Applicant : SWAMI VIVEKANANDA UNIVERSITY Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal - 700121 Bara Kanthalia -----
Filing Date	: NA	4) MR. AVIK DATTA Address of Applicant : SWAMI VIVEKANANDA UNIVERSITY Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal - 700121 Bara Kanthalia -----
(62) Divisional to Application Number	: NA	5) MR. PROMIT KUMAR SAHA Address of Applicant : SWAMI VIVEKANANDA UNIVERSITY Telinipara, Barasat - Barrackpore Rd, Bara Kanthalia, West Bengal - 700121 Bara Kanthalia -----
Filing Date	: NA	

(57) Abstract :

This article introduces a novel single-phase integrated-module MLI topology that uses fewer parts than previous topologies. Another benefit of this inverter is that the TSV has been decreased to a tolerable level, which has led to a lower cost factor. The inverter's per level equipment ratios are also determined to be low, which suggests a small size, light weight, and minimal loss. The inverter uses fewer switches to generate each level in each working mode. As a result, the inverter's conduction loss is quite low, leading to increased efficiency. Also, a new level-shifted switching algorithm is chosen to control the inverter in order to supply ac power of higher quality. The creation of several asymmetrical, isolated, and balanced dc sources utilizing high frequency magnetic links—which are crucial for the inverter—is also covered in this article. This inverter provides an extra layer of dependability and longevity.

No. of Pages : 8 No. of Claims : 6