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Proceedings of the 2018 7th International Conference on Computer and Communication Engineering, ICCCE 2018
16 November 2018, Article number 8539330, Pages 56-61
7th International Conference on Computer and Communication Engineering, ICCCE 2018; Kuala Lumpur; Malaysia; 19 September 2018 through 20 September 2018; Category numberCFP1839D-USB; Code 142740

Effect of Duty Cycle on THD for Multilevel Inverter Based on Selective Harmonic Elimination Technique (Conference Paper)

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Abstract

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Multilevel inverters controlled suffers from the issue of harmonic distortion in the output voltage. Selective Harmonic Elimination (SHE) technique plays an effective role to eliminate these harmonics. The undesirable odd harmonics can be eliminated by having optimized the switching angles in SHE signal. To optimized and obtained these switching angles, a number of nonlinear equations should be solved using a numerical method. In addition to the modulation index, by changing the value of the duty cycle the Total Harmonics Distortion (THD) will also change. In this paper, a novel Optimization Harmonic Elimination Technique (OHET) based on SHE scheme is proposed in order to minimize Total Harmonic Distortion (THD). To evaluate and investigate the performance of the proposed scheme, a seven-level cascaded inverter is simulated by MATLAB and PSIM software. © 2018 IEEE.

SciVal Topic Prominence

Topic: Electric potential | Pulse width modulation | level inverter

Prominence percentile: 99.305

Author keywords

Duty cycle Multilevel Inverter Optimization technique Selective Harmonic Elimination . Switching angles

Indexed keywords

Engineering controlled terms: Electric inverters Harmonic distortion MATLAB Nonlinear equations Numerical methods

Engineering uncontrolled terms: Duty - cycle Multilevel inverter Optimization techniques Selective harmonic elimination Switching angles

Engineering main heading: Harmonic analysis

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Funding details

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	RIDS 15-147-0147	
	RMC RIGS 16-067-0231	

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Funding text

ACKNOWLEDGMENT Financial assistance for this research by the IIUM research Management Center (RMC) via RIGS Grant No. RIDS 15-147-0147 and RMC RIGS 16-067-0231 are highly acknowledged.

ISBN: 978-153866991-4

Source Type: Conference Proceeding

Original language: English

DOI: 10.1109/ICCCE.2018.8539330

Document Type: Conference Paper

Publisher: Institute of Electrical and Electronics Engineers Inc.

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