

TERRAGREEN12 Submission 382



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Paper 382

Title:	Three Level Single Phase Photovoltaic and Wind Power Hybrid Inverter
Submission:	
Attachment:	
Author keywords:	Hybrid system Inverter Solar irradiance Temperature wind speed
EasyChair keyphrases:	power hybrid inverter (443), wind power (330), wind power generation (301), power generation voltage (174), level single phase pv (160), solar irradiance (140), wind speed (140), level waveform (140), ac square wave (126), level single phase (110), ac water pump (95), load rms voltage (95), square wave (90), power generation (83), current harmonic spectrum (63), hybrid controller circuit (63), hybrid system controller (63), weather station pro2 (63), vantage weather station (63), full bridge inverter circuit (60), charger circuit (60), total harmonic distortion (47), pulse driver circuit (47), full bridge circuit (47), array output voltage (47), pv array output (47), full bridge (45), output voltage (45), pulse wave (40), level single phase inverter (40)

Topics:	Renewable Energy: Solar, Wind, Hybrid Systems, Geothermal, Biomass & Waste, Hydropower, Tidal Wave, Hydrogen.
Abstract:	This paper presents a new topology of three-level single phase photovoltaic (PV) and wind power hybrid inverter. It consists of three main circuits; they are a hybrid controller circuit, a charger circuit, a pulse driver and full bridge circuit. The inverter is installed in front of Electrical Energy and Industrial Electronic Systems (EEIES) Cluster, Universiti Malaysia Perlis, Northern Malaysia. Its main energy source is a PV array and wind power generation. In this research, AC three-level waveform and square wave single phase PV and wind power hybrid inverter are developed and created by a microcontroller PIC16F627A-I/P and analyzed their performance comparisons. The result shows that the AC waveform which is formed by the PV and wind power hybrid inverter will effect on AC load rms voltage, AC current and current total harmonic distortion (CTHD), for a load of 20 W 220 V 50 Hz AC water pump, its AC load rms voltage and current are higher when the single phase PV and wind power hybrid inverter is formed as AC square wave than as AC three-level waveform, but the CTHD is lower when the single phase PV and wind power hybrid inverter is formed as AC three-level waveform than as AC square wave.
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Category	Oral Presentation

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Paper 382

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Paper 382

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