Title:	Design, simulation and testing of a high quality converter for renewable energy system
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Abstract:

Considering the continuous development globally, the energy requirements is also increasing. Consequently, the renewable energy systems are becoming more and more essential. Nevertheless, renewable energy systems operate depending on weather factors such as sunlight, surface coverage, wind elements, etc., which leads to inevitable risks of interruptions in the supply of consumers. For example, the most unstable energy output occurs in solar system and also these systems produce DC output voltage. Therefore, power electronics converters play an indispensable part of renewable energy conversion systems in ensuring the conversion efficiency. A converter was designed with a variable DC voltage, combining DC / DC converter and DC/AC converter to keep the output voltage quality stable. The converter is modeled and calculated for spectral loads at 220V, 50Hz. The analysis shows an improved quality of the output voltage: a higher stability and standard sinusoidal waveform.