electrical energy conversion system consists of a unidirectional boost converter and bidirectional converter operates four modes in boost operation and one mode in a buck operation. Simulink model of whole system including unidirectional DC-DC boost converter, bidirectional DC-DC converters were developed for wind energy electrical system and simulation results were obtained in MATLAB/SIMULINK. Real time implementation of whole system including speedgoat real time target machine, bidirectional DC-DC converters controlled by DSPIC30F4011 were developed for wind energy electrical system and real-time results were obtained. A variety of operating conditions from different inputs were analysed. The system has a robust performance under mode changing while input wind speed changes. The hardware results of the proposed model were verified with simulation results. The mode changing operation is effectively done in both simulation and real-time platforms.

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