

## LOW VOLTAGE RIDE THROUGH OF A GRID CONNECTED DOUBLY FED INDUCTION GENERATOR WITH FIELD ORIENTED CONTROL

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### ABSTRACT

This paper deals with a new solution for Low voltage ride through of a grid connected DFIG with field-oriented control (vector control). Control itself acting a very vital part in drives and wind turbine technology. Control of the DFIG when generating energy in a wind turbine is essential and obvious. The control techniques used for DFIG are vector control (field-oriented control) and direct control technique. In vector control of a DFIG, the components of the d and the q axis components of the rotor currents and voltages are measured with PI controllers. If a reference frame oriented with the stator flux is used, the active and reactive power flows of the stator can be measured by independently by resources of quadrature and the direct current, respectively. By means of the direct current, we can control the active power whereas the reactive power can be measured via the quadrature current. A Dynamic modelling of DFIG is presented. In our power system, in way to keep constant power, voltage and frequency we use DFIG. In this a complete study is done to study the field-oriented control characteristics of DFIG by using rotor current control loops and grid voltage-oriented vector control. This system modelled in MATLAB/Simulink environment.

**KEYWORDS:** Low voltage ride through, Doubly-fed induction generator (DFIG), Field oriented control, Wind turbine power system.

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### Article History

Received: 17 Dec 2020 | Revised: 18 Dec 2020 | Accepted: 26 Dec 2020

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