



# **Soft Starting Wind Mill Poly Phase Induction Generator with Grid**

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*Abstract* – A small-scale wind turbine coupled three phase induction generator is an attractive choice for an isolated grid hybrid power system in remote areas because of its low cost, compactness, ruggedness, high reliability, low inertia and ease in control. In this work, a power resistor based soft starter for limiting the high inrush current during the connection of the small-scale wind turbine coupled three phase induction generator to an isolated weak grid has been proposed. The proposed SCR based soft starter using will be simulating in PSCAD on a three-phase induction generator. Expected results will show a significant reduction in high inrush current and smooth connection of the three phase induction generator to the grid with small impact on the power quality. This work presents a power resistors based soft starter strategy for a small induction-generator based wind turbine. Soft-starter is designed to reduce inrush current or surge in current while achieving a proper synchronism between the generator and the grid. The designed soft-starter successfully limits the high inrush current during the connection of the wind-turbine system to the grid.

*Keywords* — Control system, Grid, PSCAD, SCR, Soft stater, Wind Turbine.