**ABSTRACT**

As a promising renewable alternative, the wind power is one of the significant sources of generation. Injection of the wind power into an electric grid affects the power quality**.** The influence of the wind turbine in the grid system concerning the power quality measurements are the active power, reactive power, variation of voltage, flicker, harmonics, and electrical behavior of switching operation and these are measured according to national/international guidelines.Reactive power compensation and harmonic reduction in a low voltage distribution networks for integration of wind power to the grid are the main issues addressed in this project.

This project proposes a control scheme based on instantaneous pq theory for compensating the reactive power requirement of a three phase grid connected wind driven induction generator as well as the harmonics produced by the non linear load connected to the PCC using STATCOM. The proposed control scheme is simulated using MATLAB/SIMULINK. The effectiveness of the proposed scheme relives the main supply source from the reactive power demand of the load and the induction generator.