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3	PhD Thesis Title	“Power Quality Improvement of Grid Integrated Hybrid Wind-Solar Distributed Generation Using Facts Controllers”
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5	Date of Registration for PhD	Sept 2009
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6	Date of Award of PhD degree	14 th Jan 2014
7	<p><u>Brief synopsis</u></p> <p>Present energy scenario is not only to satisfy demand but also maintaining higher power quality along with the rising concern - global warming. The drawbacks of centralized generation such as, long gestation period, high transmission and distribution losses, poor efficiency, high carbon footprint and peak demand management through load shedding caused the rapid development of DG technology.</p> <p>Integrating renewable technologies especially wind energy system, with the traditional power grid may face many challenges such as voltage quality problems, grid connection codes, reactive power compensation, stability of the system and overall power quality issues.</p> <p>There are several ways offered to fulfil the requirements of reactive power compensation and to overcome the drawbacks. Traditionally tap changers and mechanical switched capacitor are used to serve the purpose but the frequent switching causes resonance and transient overvoltage. The present research work concentrates on the study of the grid integrated wind energy system and the capabilities of FACTS controllers to improve power qualities. The effect of STATCOM on wind DG and at the point of common coupling is studied on IEEE test system and real system to resolve the problems associated using simulation tool MATLAB/SIMULINK. An attempt is also made to suggest PV plant installation along with the existing wind farm.</p>	