**ABSTRACT**

Power quality is the combination of voltage quality and current quality. Power quality is the set of limits of electrical properties that allows electrical systems to function in their intended manner without significant loss of performance or life. Now a days the distributed generation systems are playing a vital role in power generation. The main problems in the power quality of a distributed generation system are stationery and transient distortions in the line voltage such as harmonics, flicker, swells, sags and voltage asymmetries. In order to improve the power quality of a distributed generation system a new approach is proposed. In this proposed method the DG system consists a wind turbine, fuel cells, an inverter, an induction generator and a storage battery. With this new approach a constant, harmonics free and un-interrupted power supply is possible. The performance of this new system is simulated in two cases viz without storage battery and with the storage battery. In later case it will be found that power quality will be improved. This model will be simulated by using MATLAB/SIMMULINK.