A SURVEY OF SELF-EXCITED INDUCTION GENERATOR RESEARCH

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ABSTRACT

The increasing use of renewable energy sources such as wind energy, bio-gas energy, solar energy, and hydro potential have become essential to adopt a low cost generating system, which are capable of operating in the remote areas, and in conjuction with the variety of prime movers. With wind turbines and mini/micro hydro generators as an alternative energy source, the induction generators are being considered as an alternative choice to well developed sysnchronous generators because of their lower unit cost, inherent ruggedness, operational and maintenance simplicity, absence of separate DC source, self-protection against overloads and short circuits etc. The research is underway to investigate the various issues related to the use of induction generator as potential alternative to the synchronous generator to utilize the small hydro and wind energy to accomplish the future energy requirement, and feed the power to remote locations and far flung areas, where extension of grid is not economically feasible. This paper presents an exhaustive survey of literature of research on self-excited induction generator (SEIG) over the past 30 years so that further work can be carried out for better results.

KEYWORDS: Mini-Hydro, Parallel Operation of SEIG, Renewable Energy Sources, Self-Excited Induction Generator, Steady-State Analysis, Transient Analysis, Wind Energy