NOVEL ELECTRONIC VAR CONTROLLER FOR VOLTAGE REGULATION OF SINGLE PHASE SELF EXCITED INDUCTION GENERATORS

The present energy crisis and climate change problems have given impetus to renewable energy technology to produce electricity using such new energy sources as wind, bio, hydro and solar. Since such sources are available in remote locations, their use can be decentralized for remote consumers. Further in many commercial and domestic applications single-phase stand by generators are also in use, by applying suitable engines.

Single-phase self excited induction generators are found suitable for such applications especially with near constant speed prime movers. Such as engines energized by oil or biogas. The single phase two winding self excited induction generators invented by earlier researchers were concerned to be a major breakthrough.

However, it fails short of expectations. Since the voltage across the load could not be maintained perfectly constant as per standards. This thesis therefore bridges this technology gap by successfully developing a novel electronic VAR controller for voltage regulation of single phase self excited induction generators.

Photograph of the developed novel electronic VAR controller for voltage regulation of single phase self excited induction generators