

Abstract

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Voltage control of series connected synchronous generator

Series Connected Synchronous Generator (SCSG) is an induction machine (IM) with stator and rotor windings connected in series via excitation capacitors. This generator operates synchronously to produce sinusoidal output voltage with half rated frequency. This paper presents a method to control the voltage of the SCSG using series inductor. The analysis is based on a deduced phasor diagram. The effect of the series inductor on machine performance is analysed. An electronic system is proposed to achieve a closed loop voltage control system..