

عنوان مقاله:

'Forecasting control of current of fuel cell- based Distributed Generation Systems in AC power feeding

محل انتشار:

دومین کنفرانس مکانیک، مهندسی برق و کامپیوتر (سال: 1399)

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خلاصه مقاله:

Today, modern development of power generation technologies and new environmental rules have encouraged for extensive increase in Distributed Generation (DG) supplies throughout the world. The distributed generation (DG) systems are basically presented as alternative or substitute generation supplies for decisive applications. Diesel generators are used as one type of emergency supplies, but unfortunately diesel generators inherently lack economic benefit and produce noise and cause energy loss. Recently, due to technological advancements in micro generators, power electronics and energy saving equipment, utilization from DG systems is going to increase quickly at higher level. Fuel cells are one type of Renewable Energies that are growingly utilized in DG system by reducing production of greenhouse gases as environmental protector. A method was analyzed in this paper based on controlling DC voltage conversion produced by fuel cell the same as regulated DC voltage by cell charging and discharging. The given algorithm computes the needed current to load and capacitor for regulation and DC output control based on designated system at favorable voltage rate (fuel cell is placed in parallel with backup cell and includes intermediary converters). With respect to simulation results, output parameters have favorable value and the least transient mode with each other. At the end, the method based control of forecasting current may achieve the aforesaid goals by suitable performance for the mounted converters on the system. The simulation findings have shown capability of this controller for performance of fuel cell based DG system using MATLAB software.

کلمات کلیدی:

Distributed Generation Systems, Renewable, Fuel cells

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