عنوان مقاله:

Dynamic Analysis and Optimal Design of FLPSS for Power Network Connected Solid Oxide Fuel Cell Using of PSO

محل انتشار:

مجله بهره برداری و اتوماسیون در مهندسی برق, دوره 5, شماره 2 (سال: 1396)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

This paper studies the theory and modeling manner of solid oxide fuel cell (SOFC) into power network and its effect on small signal stability. The paper demonstrates the fundamental module, mathematical analysis and small signal modeling of the SOFC connected to single machine infinite bus (SMIB) system. The basic contribution of the study is to attenuate the low frequency oscillations by optimal stabilizers in the presence of SOFC. To optimize the performance of system, fuzzy logic-based power system stabilizer (FLPSS) is exploited and designed by particle swarm optimization (PSO) technique. To ensure the effectiveness of the proposed optimal stabilizers, the simulation process takes in three scenarios of operating conditions. The effectiveness of proposed PSO based FLPSS on the oscillations in the power system, including SOFC is extensively demonstrated through time-domain simulations and .by comparing FLPSS with the results of other stabilizers approaches

کلمات کلیدی:

پیل سوختی اکسید جامد, پایدار ساز مبتنی بر منطق فازی, مدل سیگنال کوچک, بهینه سازی ازدحام ذرات