عنوان مقاله:

Training of neural network with ICA method for prediction of wind speed for wind-hydrogen system modeling

محل انتشار:

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خلاصه مقاله:

Abstract: Wind power with respect to environmental and social issues is an excellent alternative for electricity generation. And investment in many countries and governments will be encouraged. In this paper, a hybrid wind-fuel cell energy system is simulated. This model is 6000 watts turbine and composed of a PEMFC. Simulation is such that the total Fuel cell and wind turbine hybrid system are formed a hybrid wind-hydrogen system .Note that in these systems is important for accurate prediction of wind power plants for production planning and supplying fuel of hydrogen for fuel cell. Therefore the wind speed by means of neural networks for a specific time is predicted. In this paper, we adopt ICA to optimize the weights of Multilayer Perceptron (MLP) Artificial Neural Network. On the other hand we know the power output of turbines will change with wind speed, This power output be compared with system load, If the wind turbine output power greater than the amount of load, Energy produced spent on water electrolysis to produce hydrogen for produced fuel of fuel cell And if the turbines produce less of the load, fuel cell compensating the shortage of load. For authenticating of this paper, information of Wind and fuel cell power plant this has been built on a model exactly. Wind speed is to a site of wind and credible. So the power output of solar cells, water electrolysis and hydrogen fuel, according to a variable time during the day is managed. Finally, a comparison is carried between .actual output and output the results of the two models predicted

کلمات کلیدی:

Fuel cell, Hybrid energy system, Imperialist Competitive Algorithm (ICA), Neural network, Wind Forecast, Wind power plant

لینک ثابت مقاله در پایگاه سیویلیکا: