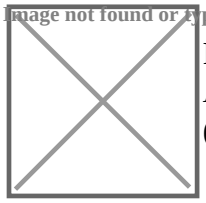
Mahmood Jafari



Phd. Student
Amirkabir University of Technology(AUT)
(Tehran Polytechnic)

Biography: Mahmood Jafari is currently a Ph.D. student in power systems, Amirkabir university of technology (Tehran Polytechnic). He received his B.Sc. and M.Sc. degree from Shahid Beheshti university in 2013 and 2016, respectively. Besides, Mahmood has worked in Sababattery manufactor for 9 years as supervisor of laboratory. His main ?elds of research are Smart Girds, Renewable Energy Resources, Control of Microgrids, Virtual Inertia and Optimization.

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Educational Records

Ph.D

Amirkabir University of Technology (AUT), Tehran Polytechnic

Thesis Title: Coordinated Control of Virtual Inertia Units to Improve Frequency Stability of Islanded Microgrids

Jafari, Mahmood (PI), B. Gharehpetian, Gevork (Supervisor), Anvari-Moghaddam, Amjad (Supervisor)

Description

The rapid development of the use renewable energy sources (RESs) in power grids has led to the creation of small?scale and local grids with the ability to operate in islanded mode called microgrids. Despite their numerous advantages, microgrids have high uncertainties in the production, consumption and structure of the network, which make it difficult to predict their dynamic behaviors. In addition, RES-based power plants, such as solar power plants and modern wind farms, are connected to the grid via electronic power inverters, and therefore do not have inertia due to the lack of rotating components in these structures. This will cause significant effects on microgrids, such as the reduction of frequency stability, significant frequency fluctuations, high rate of change of frequency, and disconnection commands for some equipment, etc. It can be concluded that the lack of inertia in the structure of these resources along with their different transient behavior in microgrids increases the negative effects on their performance and limit their applications. This Thesis aimed to present a novel control structure that guarantees the stable dynamic performance of islanded microgrids in the presence of distributed power generation resources based on power electronic inverters. Accordingly, an effort was made to propose a structure that includes distributed virtual inertia units interacting with a hierarchical control structure, while retaining the benefits of previous control methods. In addition, in order to enhance frequency stability in islanded microgrids, the virtual inertia parameters were optimally adjusted while taking into account the limitations imposed by the distributed units.

Active

01/09/2019 ? 29/02/2024

M.Sc

Shahid Beheshti University (SBU)

Thesis Title: Fault Location in Microgrids Using a Central Processing Method Based on Impedance Measurement

Jafari, Mahmood (PI), Mohammadi, Reza (Supervisor)

Finished

23/08/2013 ? 20/01/2016

B.Sc

Shahid Beheshti University (SBU)

Thesis Title: Design and Construction of a Router Robot Using ARM Microcontroller

Jafari, Mahmood (PI), Rezazadeh, Alireza (Supervisor)

Finished

23/09/2009 ? 03/07/2013

Teaching

Publication

Journal Papers

NO	TITLE	YEAR

Conference Papers

NO	TITLE	YEAR

Books

NO	TITLE	YEAR

Patents

NO	TITLE	YEAR

Industrial Projects

NO	TITLE	YEAR

Management/Administration Jobs

Scientific Societies

Awards