Abstract

Microgrid has comes out one of the key spot in research on distributed energy system. Since the definition of Microgrid is paradigm by the first time, investigation in this area is growing continuously and there are numerous research projects in this moment over the world. This paper mainly focused on Power quality improvement in autonomous microgrid. Herein an optimal power control strategy for an autonomous microgrid is carried out in a real time self tuning method. Voltage frequency (Vf) regulation and Harmonic analysis are the main performance parameter which is consider in this work, particularly from grid connected to islanding operation mode. Especial design of controller scheme is composed of an inner current control loop and an outer power control loop in synchronous reference frame. Ant colony optimization (ACO) is an intelligent searching algorithm, which is applied for real time
self tuning of control parameter. The simulation result shows that the proposed controller offers an excellent response to satisfy the Power quality improvement.

References

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Index Terms

Computer Science
Power Electronics

Keywords

Microgrid  Autonomous mode  Power Quality  Power controller  Current controller

ACO