

INFORMATION ON NEW CONCLUSIONS OF DOCTORAL DISSERTATION

(Information will be posted on the Website)

Name of dissertation: Intelligent frequency controller in the interconnected power system

Major: Control Engineering and Automation Code No: 9520216

Name of PhD. Student: Doan Diem Vuong

Advisors: **1. Dr: Nguyen Ngoc Khoat**

2. Assoc. Prof.Dr: Thai Quang Vinh

Training Institution: **Electric Power University**

Summary of new contributions of the Dissertation

1. 1st new contribution: Proposing an adaptive control solution according to Gauss function according to Lyapunov stability standard for interconnected power system with different load disturbances to stabilize the frequency of each region for fast response time.

2. 2nd new contribution: Proposing a Fuzzy - PID hybrid control solution for a two areas interconnected power system when the system considers the factors of uncertainty, nonlinearity and the participation of renewable energy sources. Analysis of frequency deviation response results of each area has small overshoot and faster response time when other control methods are applied.

3. 3rd new contribution: Proposing a Fuzzy - PID hybrid control solution to optimize the control parameters by PSO method a three areas interconnected power system when the system considers the factors of uncertainty, nonlinearity and the participation of of renewable energy sources. The results of frequency deviation response in each area have small overshoot and faster response time when other control methods are applied.

Advisors

Hanoi, 04/05/ 2023

PhD. Student

Dr. Nguyen Ngoc Khoat

Assoc.Prof.Dr. Thai Quang Vinh

Doan Diem Vuong

