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التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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HANAA ALY

ENHANCING STABILITY FOR POWER SYSTEMS USING FACTS CONTROLLERS AND FUZZY PI APPROACH

By

TAMER MOHAMED SHEHATA KOTB

A Thesis Submitted to the
Faculty of Engineering at Cairo University
In Partial Fulfillment of the
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2020

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

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List of Abbreviations

AC	Amplitude current.
AP(P)	Active power.
AVR	Automatic Voltage Regulators
B2B	Back To Back
DC	Direct current.
DFC	Dynamic Flow Controller
EPRI	Electric Power Research Institute.
FACT	Flexible AC transmission line.
FC-TCR	Fixed Capacitor Thyristor Controlled Reactor
FLC	Fuzzy logic controller
GA	Genetic algorithm.
GIPFC	Generalized Interlink Power Flow Controller
GUPFC	Generalized Unified Power Flow Controller
GTO	Gate turn-off.
HPFC	Hybrid Power Flow Controller
HVDC	High Voltage Direct Current
IGBT	Insulated Gate Bipolar Transistors.
IGCT	Insulated Gate Commutated Thyristors.
IPFC	Interline Power Flow Controller.
LP	Linear programming.
MOV	Metal-oxide varistor
OPF	Optimal power flow.
PAR	Phase Angle Regulator
PCS	Power conversion or conditioning system
PI	Proportional integer
PIC	Proportional integer control
PSs	Power systems.
PST	Phase Shifting Transformer
PWM	Pulse width modulation.
RP(Q)	Reactive power.
SMES	Superconducting Magnetic Energy Storage Systems

SSSC	Static Synchronous Series Compensator.
STATCOM	Static Synchronous Compensator.
SVC	Static Var Compensator.
TCPS	Thyristor-Controlled Phase Shifter.
TCPST	Thyristor Controlled Phase Shifting Transformer
TC-PAR	Thyristor Controlled Phase Angle Regulator
TCR	Thyristor Controlled Reactor
TCSC	Thyristor- Controlled Series Capacitor.
TSC	Thyristor switch control.
UPFC	Unified Power Flow Controller.
VSCs	Voltage source converters.
VSI	Voltage source inverter.