1. Record Nr. UNINA9910574063103321

Titolo	Control applications in modern power systems : select proceedings of EPREC 2021 / / edited by Jitendra Kumar, Manoj Tripathy, and Premalata Jena
Pubbl/distr/stampa	Gateway East, Singapore : , : Springer, , [2022] ©2022
ISBN	981-19-0193-7
Descrizione fisica	1 online resource (644 pages)
Collana	Lecture Notes in Electrical Engineering ; ; v.870
Disciplina	621.31
Soggetti	Electric power systems - Control
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Contents -- About the Editors -- Importance of Secondary Controller and Its Parameters Optimization Using Particle Swarm Optimization Technique for AGC -- 1 Introduction -- 2 System Investigated -- 3 Particle Swarm Optimization (PSO) -- 4 Results and Discussion -- 4.1 Single Area System -- 4.2 Two Area System -- 5 Conclusion -- References -- Section of Suitable GRC Structure for Dual Area Thermal System Under 2DOF-PID Controller -- 1 Introduction -- 2 Investigative Model -- 3 Controller and Optimization -- 3.1 2DOF-PID Controller -- 3.2 HAEFA Optimization -- 4 Simulation Results -- 4.1 Scenario I: System Responses with GRC Models of Open Loop and Closed Loop -- 4.2 Scenario II: Sensitivity Analysis with Uncertainties in System Loading and Parameters -- 5 Conclusion -- References -- Application Hybrid Chaotic Maps and Adaptive Acceleration Coefficients PSO Algorithm for Optimal Integration Photovoltaic Distributed Generation Problem in Distribution Energy Network -- 1 Introduction -- 2 Proposed Hybrid PSO Algorithms -- 2.1 Basic PSO -- 2.2 Chaotic Maps -- 2.3 Modified PSO Algorithms-Based Acceleration Coefficients -- 3 Problem Formulation and Constraints -- 3.1 Multi-Objective Functions -- 3.2 Equality Constraints -- 3.3 Distribution Line Constraints -- 3.4 PV-DG Units Constraints -- 4 Test System, Optimal Results, and Comparison -- 5 Conclusions -- References -- A Novel Order Simplification Technique for Large-Scale

Linear Dynamic Systems -- 1 Introduction -- 2 Proposed Model Order Reduction Method -- 2.1 Calculation of Denominator Coefficients of Approximated Reduced Model by Mihailov Stabilization Method -- 2.2 Simplified MCCF Method -- 3 Simulation and Result -- 4 Conclusion -- References -- Comparative Analysis of Controller Tuning for Multi-area Power System Using Swarm Optimization Techniques -- 1 Introduction.
2 Dynamics of Two-Area AGC -- 3 Controller Design for Multi-area Power System -- 3.1 Flower Pollination Algorithm -- 3.2 Ant Colony Optimization -- 4 Simulation Results -- 5 Conclusion -- References -- State Estimation of Power Network Using Phasor Measurement -- 1 Introduction -- 2 Conventional State Estimator -- 3 Conventional State Estimator with Phasor Measurement Technology -- 4 Addition of Phasor Technology Using Post-Processing Method -- 5 Similarity of 2 Methods for a Linear Estimator -- 6 Simulation Results -- 7 Conclusion -- References -- Optimal Siting of FACTS Controller Using Moth Flame Optimization Technique -- 1 Introduction -- 2 Background -- 3 Modeling of FACTS Controller -- 3.1 TCSC -- 3.2 SVC -- 4 Proposed Techniques -- 5 Results and Discussion -- 6 Conclusion -- References -- KNN Based Approach for Transmission Line Outage Detection Using Synchrophasor Data -- 1 Introduction -- 2 Methodology -- 2.1 TLOD Model -- 3 Simulation Studies -- 3.1 IEEE 5 Bus Case Study -- 3.2 IEEE 14, 57 Bus Case Study -- 4 Discussion -- 5 Conclusion -- References -- Study the Effect of Right-Half Plane Zero on Voltage-Mode Controller Design for Boost Converter -- 1 Introduction -- 2 Circuit Analysis of Boost Converter -- 2.1 Component Selection -- 2.2 Losses in Boost Converter -- 3 Effects of RHP Zero and Methods of Elimination -- 4 Voltage-Mode Controller Design -- 5 Simulation Results -- 6 Conclusion -- References -- Grid-Connected PV System Power Forecasting Using Nonlinear Autoregressive Exogenous Model -- 1 Introduction -- 2 Configuration of Proposed System -- 3 Forecasting Model -- 4 Results and Discussion -- 4.1 Case-1 Forecasting for the First Quarter of the Year -- 4.2 Case-2 Forecasting for the Second Quarter of the Year -- 4.3 Case-3 Forecasting for the Third Quarter of the Year -- 4.4 Case-4 Forecasting for the Complete year -- 5 Conclusion.
References -- Frequency Regulation of Multi-microgrid Incorporating Hybrid Energy Storage Units -- 1 Introduction -- 2 Modelling of the Multi-microgrid -- 2.1 Diesel Generation Unit -- 2.2 Wind Turbine Generator: -- 2.3 Solar Photovoltaic System -- 2.4 Energy Storage Unit -- 3 Mathematical Problem Formulation -- 3.1 Objective Function -- 3.2 Optimization Algorithm-SSA -- 4 Results and Discussion -- 4.1 Scenario 1: Performance Analysis of PSO-PID and Proposed SSA-PID Controller -- 4.2 Scenario 2: Performance Analysis of Hybrid BESU-UC and Proposed Hybrid BESU-SMES Models -- 5 Conclusion -- Appendix -- References -- Voltage Regulator Using Sliding Mode Controller for Inverter Based Islanded Microgrid -- 1 Introduction -- 2 System Structure and Dynamic Modeling -- 3 Control Methodology -- 4 Responses and Discussions -- 5 Conclusion -- References -- Design of PID Controller Using Strawberry Algorithm for Load Frequency Control of Multi-area Interconnected Power System with and Without Non-linearity -- 1 Introduction -- 2 System Under Study -- 3 Strawberry Algorithms -- 3.1 Initialization -- 3.2 Duplication -- 3.3 Elimination -- 4 Result -- 4.1 Case-A -- 4.2 Case-B -- 5 Conclusion -- Appendix -- References -- Dynamic Performance Analysis of Neural Network Based MPPT Under Varying Climatic Condition -- 1 Introduction -- 1.1 Paper Organization -- 2 PV System Modelling -- 2.1 Modelling of PV System and Its Characteristics -- 2.2

System Description -- 3 MPPT Techniques -- 3.1 Artificial Neural Network -- 3.2 Duty Ratio Generation -- 4 Result and Discussions -- 4.1 Training of Neural Network -- 4.2 Performance of NN based MPPT -- 4.3 Comparison Table -- 5 Conclusion -- References -- Optimum Location of Isolator in Radial Distribution System Using Genetic Algorithm to Improve the System Reliability -- 1 Introduction -- 2 Reliability Assessment.
2.1 Definitions -- 2.2 Reliability Indices -- 3 Problem Formulation -- 4 Results and Discussion -- 5 Conclusion -- References -- A Predictive Maintenance Scheme for Solar PV System -- 1 Introduction -- 1.1 Problem Identification -- 1.2 Options to Mitigate Problem -- 2 Materials and Method -- 2.1 Need for PV Predictive Maintenance -- 2.2 Current Approaches and Opportunities for PV Predictive Maintenance -- 3 Conclusion -- References -- Unscented Transform-Based Efficient Energy Management System of a Microgrid for Optimal Heat Power Dispatch -- 1 Introduction -- 2 Problem Formulation -- 2.1 System Constraints -- 3 EMS Model: Unscented Transform-Based Modified PSO -- 4 Simulation Results and Analysis -- 4.1 Statistical Analysis -- 5 Conclusion -- References -- A Planning Framework for Reactive Power in Power Transmission System Using Compensation Devices -- 1 Introduction -- 2 Problem Formulation -- 3 Proposed Methodology -- 3.1 Weak Bus and Line Detection -- 3.2 Application of Evolutionary Algorithms -- 4 Results and Discussions -- 5 Conclusion -- References -- Fuzzy Controlled D-STATCOM to Improve the PCC Voltage Profile of a Multi-Microgrid Interconnection Scheme -- 1 Introduction -- 2 Multi-Microgrid Interconnection Scheme-The System Under Study -- 3 PI Controlled D-STATCOM -- 3.1 Simulation Results and Observations -- 4 Fuzzy Controlled D-STATCOM -- 4.1 Simulation Results and Observations -- 5 Comparative Analysis -- 6 Conclusion -- References -- Execution Analysis of Particle Swarm Optimization Technique by Using Different Inertia Weight Factors to Resolve Combined Economic and Emission Dispatch Problems -- 1 Introduction -- 2 Problem Formulation -- 2.1 Objective Function -- 2.2 Different Inertia Weight Factors -- 2.3 Constraints -- 3 Implementation Methodology -- 3.1 Optimization Algorithm -- 4 Result Analysis -- 5 Conclusions and Future Scopes.
References -- An Intelligent Control Strategy for Power Quality Improvement of DFIG-Based Wind Energy Conversion System -- 1 Introduction -- 2 DFIG-Based Wind Turbines -- 3 DFIG Modelling and Control -- 4 Control Strategy -- 4.1 Pitch Angle Control -- 4.2 ANFIS Controller -- 5 Simulation Model -- 6 Result and Discussion -- 6.1 Response of Wind Generation System Under Varying Wind Speeds -- 7 Conclusion -- References -- Study on Classifications and Modeling of Loads in Low Voltage Distribution System -- 1 Introduction -- 2 Loads Classification -- 2.1 Capacity -- 2.2 Nature -- 2.3 Pattern -- 2.4 Requirement -- 2.5 Type -- 2.6 Technology Based -- 2.7 Load as Source -- 2.8 Identification Based -- 2.9 Load Current Based -- 2.10 Load Parameters -- 3 Load Modeling -- 3.1 Linear load -- 3.2 Non Linear Load -- 4 Load Analysis in Frequency Domain -- 4.1 Linear Load -- 4.2 Nonlinear Load -- 5 Simulation Results -- 5.1 Load Model -- 6 Experimental Results -- 6.1 Classifications of Loads -- 7 Conclusion -- References -- Application of FEM in Single-Phase 500 kV EPR-Based Cable for Parametric Analysis -- 1 Introduction -- 2 Specifications Used for Analysis -- 3 Finite Element Method (FEM) -- 4 Result and Discussion -- 4.1 Energy Density -- 4.2 Partial Discharge Inception -- 4.3 Contour Plots of Measured Parameters -- 4.4 Parametric Analysis -- 5 Conclusion -- References -- Blockchain Technology: A Smart Technology for Demand Response in Smart Grids

-- 1 Introduction -- 2 Blockchain Technology -- 3 Blockchain-Based Demand Response in Smart Grids -- 4 Conclusion -- References -- Output Power Enhancement of VSWT Using Fuzzy Logic-Based MPPT Algorithm -- 1 Introduction -- 2 Wind Energy Conversion System -- 2.1 DFIG Modelling and Control -- 2.2 Wind Turbine Model -- 2.3 Fuzzy Logic-Based MPPT Control -- 3 Outcomes and Simulation -- 3.1 For Step Change Wind Profile.
3.2 For Sinusoidal Wind Profile.