

1. Record Nr.	UNINA9910743337503321
Titolo	Sustainable energy and technological advancements : proceedings of ISSETA 2021 // edited by Gayadhar Panda, R. T. Naayagi, Sukumar Mishra
Pubbl/distr/stampa	Singapore : , : Springer, , [2022] ©2022
ISBN	981-16-9033-2 981-16-9032-4
Descrizione fisica	1 online resource (853 pages)
Collana	Advances in Sustainability Science and Technology
Disciplina	617.51
Soggetti	Renewable energy sources
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	<p>Intro -- Committee Members -- Preface -- List of Reviewers --</p> <p>Contents -- About the Editors -- 1 Impact of Reverse Power Flow Due to High Solar PV Penetration on Distribution Protection System -- 1</p> <p>Introduction -- 2 Impact of High RE Penetration on the Protection System -- 2.1 Optimal Placement of PV Considering Voltage Stability -- 2.2 Reverse Power Flow Effects in Protection Coordination -- 2.3</p> <p>Impact of Change in Fault Current Level on Protection Coordination -- 3 Case Study and Test Scenarios -- 4 Results and Discussion -- 4.1</p> <p>Power Flow in 33 Bus System -- 4.2 Short-Circuit Current on the 33 Bus System -- 5 Conclusion -- References -- 2 Modeling and Performance Evaluation of MPPT-Based PMSG Wind Energy Conversion System with Boost Converter in MATLAB/Simulink</p> <p>Environment -- 1 Introduction -- 2 Wind Energy Conversion System -- 2.1 Wind Turbine -- 2.2 Permanent Magnet Synchronous Generator -- 3 DC-DC Converter -- 4 Maximum Power Point Tracking -- 4.1 Hill Climbing Method of MPPT -- 5 Results and Discussion -- References -- 3 Optimal Scheduling of Grid Connected PV System with Battery Energy Storage -- 1 Introduction -- 2 Methodology -- 2.1 Modified Algorithm for Optimal Scheduling of Grid Connected PV System with BES -- 2.2 Determination of UI Cost -- 2.3 Optimal Power Flow Using MATPOWER -- 3 System Description -- 3.1 PV System with Battery Energy Storage</p>

-- 3.2 Power Generated by PV Panel -- 3.3 Frequency Calculation -- 4  
Results and Discussion -- 5 Conclusions -- References -- 4 Seven-  
Level Switched-Capacitor-Based Inverter Topology with Reduced  
Components for Renewable Energy System -- 1 Introduction -- 2  
Working Pattern of Proposed System -- 2.1 Circuit Operation Analysis  
-- 3 Comparative Analysis of Presented Design and Other Recent  
Design -- 4 Simulation Results -- 5 Conclusion -- References.  
5 Reference Tracking by Designing State Estimation Observer for  
Generalized Predictive Control of a Single Inductor Dual Output Buck  
Converter -- 1 Introduction -- 2 Generalized Predictive Control -- 3  
Convergence of Control Law -- 4 Observer Design for State Estimation  
-- 5 Numerical Simulation Results -- 6 Conclusion -- References -- 6  
Different Oscillator-Controlled Parallel Three-Phase Inverters in Stand-  
Alone Microgrid -- 1 Introduction -- 2 System Description -- 3 Control  
strategies -- 3.1 Nonlinear Deadzone VOC (NDZVOC) -- 3.2 Nonlinear  
Vanderpol VOC (NVPVOC) -- 4 Results and Discussion -- 5 Conclusion  
-- References -- 7 Generalized Hybrid Symmetrical and Asymmetrical  
Multilevel Inverter Topology with Reduced Number of Switches -- 1  
Introduction -- 2 Proposed Hybrid Multilevel Inverter Topologies -- 2.1  
For Asymmetrical Nine-Level Inverter Configuration -- 2.2  
For Symmetrical Seven-Level Inverter Topology -- 3 Control PWM  
Strategies of the Proposed MLI -- 4 Comparison Between Proposed  
MLIs and Traditional MLIs Topologies -- 5 Results -- 5.1 For Simulation  
and Experimental Results -- 6 Conclusion -- References -- 8 A New  
Reduced Device Count of Three-Phase Three-Level Switched Capacitor-  
Based Grid-Connected Inverter with LCL Filter -- 1 Introduction -- 2  
Operation and Control Strategy of Proposed GCI Topology -- 2.1  
Operation -- 2.2 Control Strategy -- 3 Comparative Study -- 4  
Simulation Results -- 5 Conclusion -- References -- 9 Reduction  
in Harmonics for PV-Based Reduced Device Count Multilevel Inverter  
Wth Genetic Algorithm -- 1 Introduction -- 2 Modeling of PV Cell -- 3  
Modeling of Boost Convertors -- 4 Incremental Conductance Method --  
5 PV 7L-CHB MLI Topology -- 6 PV 7L-RDC MLI Topology -- 7  
Calculation of THD Using Optimization Algorithm -- 8 Genetic  
Algorithm (GA) -- 9 Results and Analysis -- 10 Conclusion --  
References.  
10 Design and Implementation of 165 W Current-Fed Push-Pull  
Converter for Military and Space Applications -- 1 Introduction -- 2  
Specifications of the Converter -- 3 Circuit Design and Function -- 3.1  
Pulse Generation Circuits -- 3.2 MOSFET Selection and Design for Buck  
Stage -- 3.3 Inductor Design -- 3.4 MOSFET Selection and Design  
for Push-Pull Stage -- 3.5 Push-Pull Stage Transformer -- 3.6 MOSFET  
Selection for Synchronous Rectification Stage -- 3.7 Overlap Time -- 4  
Experimental Results and Discussions -- 4.1 Efficiency -- 4.2 Ripple  
Voltage -- 4.3 Line and Load Regulations -- 4.4 Experimental  
Waveforms -- 5 Conclusion -- References -- 11 A New Single-Phase  
Five-Level Self-balanced and Boosting Grid-Connected Switched  
Capacitor Inverter with LCL Filter -- 1 Introduction -- 2 Operation  
of Proposed GCI Topology and Control Schemes -- 3 Comparative  
Study -- 4 Simulation Results -- 5 Conclusion -- References -- 12  
Comparative Analysis of Different Control Techniques Implementation  
in UPQC for Power Quality Improvement -- 1 Introduction -- 2 Design  
of the Proposed System -- 3 Different Control Approach -- 3.1 Control  
Algorithms of Series Part of the UPQC -- 3.2 Control Algorithms  
of Shunt Part of the UPQC -- 4 Simulation Results and Comparative  
Analysis -- 4.1 Series Part of UPQC Using UVTG Method -- 4.2 Shunt  
Part of UPQC with Different Control Approach -- 5 Conclusions --  
References -- 13 Design and Implementation of a Control for Solar PV

Fed Unified Power Quality Conditioner -- 1 Introduction -- 2  
Configuration of Grid Connected PV-UPQC System -- 3 Design of Grid-Connected PV-UPQC System -- 3.1 PV Array Parameters -- 3.2 DC Link Voltage -- 3.3 DC Link Capacitor -- 3.4 Interfacing Inductor for Shunt VSC -- 3.5 Series Transformer -- 4 Control Scheme of Grid-Connected PV-UPQC System -- 4.1 Control of Series VSC -- 4.2 Control of Shunt VSC.

5 Simulation Results -- 5.1 System Performance During Grid Voltage Sag and Swell -- 5.2 System Performance During Irradiation Change -- 5.3 Comparative Performance of MSOGI and SOGI -- 6 Conclusions -- References -- 14 Power Quality Improvement in Distribution Network Using PV Integrated DSTATCOM -- 1 Introduction -- 2 DSTATCOM Principle -- 2.1 Power Quality Issues -- 2.2 PV Energy Storage System -- 2.3 PV Integration with Distributed Generation -- 2.4 Detailed System Description -- 2.5 Control Scheme -- 3 Results and Simulation -- 4 Conclusion -- References -- 15 Instantaneous Reactive Combined Loss Componenet Power Theory-Based Hybrid Filter for Power Quality Improvement in Distribution System -- 1 Introduction -- 2 Description of the Proposed System with Controller -- 3 Improved Instantanou Reactive Power Theory -- 4 Simulation Results and Comparative Analysis -- 4.1 Case 1-Diode Bridge Rectifier and R-L Load -- 4.2 Case 2-Diode Bridge Rectifier and R-L and R Load -- 4.3 Case 3-Diode Bridge Rectifier and R and C Load -- 5 Experimental Validation -- 6 Conclusions -- 7 Appendix -- References -- 16 Space Vector Pulse Width Modulation-Based DSTATCOM for Harmonic Compensation -- 1 Introduction -- 2 Model Configurations -- 3 Controller Design -- 3.1 Mathematical Modeling of Modified Instantaneous Reactive Power Theory (M-IRPT) -- 4 Controller Design for DSTATCOM Using SV-PWM Technology -- 5 Simulation Results -- 6 Experimental Results -- 7 Conclusion -- References -- 17 PV-Fed DC Link Voltage Control Techniques Implementation in Shunt Active Filter -- 1 Introduction -- 2 Proposed System -- 3 Control Techniques in the Proposed System -- 3.1 MPPT Algorithm Implementation in PV Source -- 3.2 PQ Theory Implementation in the Proposed Filter -- 4 Results and Analysis -- 5 Conclusions -- References.

18 Detection and Classification of Transmission Line Faults Using ANN -- 1 Introduction -- 2 Proposed System -- 3 Methodology -- 4 Artificial Neural Network -- 4.1 Characteristics -- 4.2 Backpropagation Algorithm (BPNN) -- 5 Fault Detection Using ANN -- 6 Fault Classification Using ANN -- 7 Result and Implementation -- 8 Conclusion -- References -- 19 A DWT-RNN-Assisted Intelligent Differential Protection Scheme for Grid-Tied and Islanded DC Microgrid -- 1 Introduction -- 2 Fault Detection Method for DC Microgrid -- 2.1 Model Description -- 3 Proposed Fault Detection Method -- 3.1 Fault Analysis -- 3.2 Current-Differential Protection Scheme -- 4 Results and Discussions -- 4.1 Case 1: Validation of System Performance Under Pole-to-Ground Fault Scenarios During Grid-Tied DC Microgrid -- 4.2 Case 2: Validation of System Performance Under Pole-to-Ground Fault Scenarios During Islanded DC Microgrid -- 5 Conclusion -- References -- 20 Application of Differential Evolution to Determine Single-Stage Impulse Circuit Parameters -- 1 Introduction -- 2 Application of DEOA to Evaluate SSIGC Parameters -- 3 Results from Proposed Methodology -- 4 Results Analysis and Validation -- 5 Conclusion -- References -- 21 Frequency Control of GWO-Optimized Two-Area Microgrid with TIDF-II, I-PD and I-TD -- 1 Introduction -- 2 Two-Area Configuration -- 2.1 Biogas Turbine Generator -- 2.2 Tidal Power Generator -- 2.3 Archimedes Wave Energy Conversion Generator -- 3 Controller Design Methodology -- 4 GWO Algorithm -- 5 Result

and Discussions -- 6 Conclusions -- References -- 22 A Review  
on Control Methods Used in Renewable Energy Source-Fed Induction  
Motors -- 1 Introduction -- 2 Conventional Control Techniques Used  
in RES-Fed IM -- 3 Sensorless Control Techniques Used in RES-Fed IM  
-- 3.1 Frequency Signal Injection Method -- 3.2 Model Reference  
Adaptive System (MRAS).  
3.3 Sliding Mode Observer (SMO).

---