



EPE'22 ECCE Europe: LIST OF KEYWORDS

12-Pulse rectifier	Battery impedance measurement
Aalborg inverter	Battery Management Systems (BMS)
AC machine	Bearing currents
AC-AC	Bi-directional
AC-AC converter	Bi-directional converters
AC-cable	Billing rules
Accelerators	Bipolar device
AC-DC	Bipolar Junction Transistor (BJT)
AC-DC converter	Block modulation
AC-DC microgrid	Boost
Acoustic noise	Boost inductor optimization
Active damping	Branch currents mismatch
Active filter	Breakdown
Active front-end	Brushless Doubly Fed Reluctance Machines
Active magnetic bearing	Brushless drive
Active power-decoupling circuit	Buck converter
Active Power-Line Conditioning	Buck-boost converter
Active protection	Bus bar
Actuator	Calculation method
Adaptive auto-reclosing	Capacitive coupling
Adaptive control	Capacitor coupled
Adjustable speed drive	Capacitor voltage balancing
Adjustable speed generation system	Capacitors
ADMM algorithm	Carbon neutrality
Aerospace	Cascaded H-Bridge
Aging	CC-CV charging
Air-friction loss	Chaotic suppression EMI
Airplane	Charge compensation device
All Electric Aircraft	Charge scheduling
Alternative energy	Charging
Amplifiers	Charging infrastructure for EV's
Analytical losses computation	Circuits
Ancillary services	Class-D amplifier
AQG-324 standard	Combination MMC-LLC
Artificial intelligence	Combined heat and power
Asynchronous motor	Common ground
Automotive application	Communication for Power Electronics
Automotive component	Commuting
Automotive electronics	Compensation
Autotuning	Component for measurements
Axial flux hybrid-excitation machine	Compressor
Axial machines	Computational cost
Batteries	Condition monitoring
Battery	Conduction losses
Battery charger	Consensus
Battery electrochemical model	Consensus-based cooperative control



Contact resistance
 Contactless energy transfer
 Contactless power supply
 Control interactions
 Control methods for electrical systems
 Control of drive
 Controller benchmark
 Controllers
 Converter circuit
 Converter control
 Converter machine interactions
 Cooling
 Core loss
 Core loss modelling
 Corrosion testing
 Cost analysis
 Cost function
 Coupled capacitor
 Coupled inductor
 Coupling characteristics
 Cryogenic
 CSI
 Current balancing
 Current derivative
 Current limiter
 Current loop
 Current observer
 Current sensor
 Current sharing
 Current source
 Current Source Converter (CSC)
 Current Source Inverter (CSI)
 Current-source DC-DC
 Cyber Physical System
 DAB-LLC converter
 Damping network
 Data analysis
 Data transmission
 DC circuit breaker
 DC collector network
 DC machine
 DC power supply
 DC railway power supply
 DC voltage control
 DC-AC
 DC-AC converter
 DC-cable
 DC-DC
 DC-DC converter
 DC-link
 Dead-time
 Decentralized control structure
 Deep learning
 Degradation
 Demand response
 Design
 Design optimization
 Design Space Optimization
 Device
 Device application
 Device characterisation
 Device integration
 Device modelling
 Device simulation
 Devices
 Diagnostics
 Diamond
 Dielectric losses
 Digital control
 Diode
 Direct matrix converter
 Direct power control
 Direct torque and flux control
 Direct Torque Control (DTC)
 Discrete power device
 Discrete-model
 Discrete-time
 Distributed generation
 Distributed power
 Distribution FACTS (DFACTS)
 Distribution of electrical energy
 Distribution STATCOM doubly fed induction motor
 Double pulse test
 Double-input converter
 Double-Star Chopper Cells (DSCC)
 Doubly-Fed Induction Generator (DFIG)
 Drilling
 Drive
 Driver concepts
 Droop control
 DSP
 Dual Active Bridge (DAB)
 Dual Active Bridge (DAB) DC-DC converter
 Dual Active Bridge Converter
 Dual-mode
 Dynamic power flow simulation



- Dynamic Ron
- Dynamic Voltage Restorer (DVR)
- Dynamic wireless charger
- Economic dispatch
- Eddy current loss
- Education methodology
- Education tool
- EESM
- Efficiency
- Elastic / Plastic deformation
- Electric bus fleet
- Electric Propulsion
- Electric Vehicle
- Electrical drive
- Electrical machine
- Electroactive materials
- Electromagnetic Energy Harvester
- Electromagnetic Interference (EMI)
- Electronic ballast
- Electrostatic machine
- Embarked networks
- EMC/EMI
- Emerging technology
- Emerging topology
- Energetic macroscopic representation
- Energy Control Unit (ECU)
- Energy converters for HEV
- Energy digitalization
- Energy Management System (EMS)
- Energy storage
- Energy system management
- Energy transformation
- Energy transition
- Environment
- Estimation technique
- Excitation system
- Experimental testing
- FACTS
- Failure modes
- Failure rate
- Fast fault detection
- Fast recovery diode
- Fault detection
- Fault handling strategy
- Fault ride-through
- Fault tolerance
- Faults
- Fault-tolerant control
- Ferrite
- Ferrite assisted Synchronous Reluctance Machine
- Field Oriented Control
- Field Programmable Gate Array (FPGA)
- Fieldbus
- Filter design automation
- Filter optimization
- Filtering
- Finite-element analysis
- Finite-element method
- Flatness control
- Flicker
- Flux model
- Flux separation
- Flux-concentrating
- Flyback converter
- Flying Capacitor Boost Converter
- Flying capacitor converter
- Flywheel
- Flywheel system
- Foil winding
- Force Control
- Four-Switch Buck-Boost Converter (FSBB)
- Free Wheel Diode (FWD)
- Frequency dynamics
- Frequency estimation
- Frequency-Domain Analysis
- Fuel Cell
- Fuel Cell Electric Vehicle (FCEV)
- Fuel Cell system
- Functional safety torque estimation
- Fuzzy control
- Gallium Nitride (GaN)
- Gate recess
- Generation of electrical energy
- Generator
- Generator excitation system
- Genetic algorithm
- Green aviation
- Grid forming
- Grid measurements
- Grid-connected converter
- Grid-connected inverter
- Grid-forming converter
- Half bridge
- Half-bridge-active-clamp converter
- Hard switching
- Hardware



Hardware design
 Hardware-In-the-Loop (HIL)
 Harmonic current model
 Harmonic injection
 Harmonic summation
 Harmonics
 Harmonics active filter
 Heat-pipe evaporator
 HEMT
 High frequency power converter
 High low-frequency ripple
 High power density systems
 High power discrete device
 High speed drive
 High temperature electronics
 High voltage IC's
 High voltage power converters
 Highly dynamic drive
 High-speed drive
 Honeycomb approach
 Humidity
 HVDC
 Hybrid
 Hybrid control strategy
 Hybrid DC breaker
 Hybrid Electric Vehicle (HEV)
 Hybrid power integration
 Hybrid simulation
 Hybrid transformer
 IED
 IGBT
 IGCT
 Imbalanced classification learning
 Impedance analysis
 Impedance measurement
 Impedance model
 Induction heating
 Induction motor
 Industrial application
 Industrial communications
 Industrial information systems
 Inertia support
 Input admittance
 Insertion loss
 Insulation
 Integrated Circuit (IC)
 Integrated Rogowski coils
 Intelligent drive
 Intelligent gate driver
 Intelligent Power Module (IPM)
 Intercell transformer
 Interconnected microgrids
 Interharmonics
 Interleaved converters
 Interleaved inverters
 Inverter design
 Inverter-output filter
 Iron losses
 Islanded operation
 Isolated converter
 I-V signature
 JFET
 Junction Temperature Control
 LCL
 LCL-type inverter
 Leakage current
 Levelized cost of energy
 Life Cycle Analysis (LCA)
 Lifetime
 Lifetime of DC-link capacitor
 Lighting
 Linear drive
 Linear time periodic systems
 Lithium-ion
 Lithium-ion battery
 Litz wire
 Load imbalance
 Load sharing control
 Load shedding
 Load torque
 Locomotive
 Low-Inertia Grid
 LVDC
 M2DC
 Machine emulation
 Machine learning
 Machine tool drive
 Magnet loss
 Magnetic bearings
 Magnetic coupling
 Magnetic device
 Maintenance
 Marine
 Matrix converter
 Maximum Power Point Tracking Quadratic Converters
 Measurements



- Mechatronics
- Medium voltage
- Medium voltage converter
- Medium-voltage grid
- Microcontrollers
- Microgrid
- Midpoint voltage balancer
- Miniaturization
- Mission profile
- Model predictive control
- Model-based Predictive Control
- Modelica
- Modelling
- Modified nodal analysis
- Modular converter
- Modular matrix converter
- Modular Multilevel Converters (MMC)
- Modulated Hysteresis Direct Torque Control
- Modulation scheme
- Modulation strategy
- Module temperature measurement
- Monolithic power integration
- More-Electric Aircraft
- MOS device
- MOSFET
- Motion control
- MPC (Model-based Predictive Control)
- MPC (Model-based Predictive Control) Modulation Strategy
- MPPT
- Multi-axle drives
- Multicopters and drones
- Multi-level converters
- Multi-level hysteresis control
- Multi-level inverters
- Multi-level system
- Multi-machine system
- Multi-objective optimization
- Multiphase converter
- Multiphase drive
- Multi-physics design
- Multiple secondary windings
- Multi-rotor wind turbine clustering
- Multi-terminal HVDC
- Mutual couplings
- Mutual inductance
- Nano-grid
- Nanotechnology
- Natural convection
- Nearest level modulation
- Nelder-Mead simplex algorithm
- Neural network
- Neuronal control
- Neutral current ripple
- Neutral Point Clamped Inverter
- New switching devices
- Night mode
- Nine-switch converter
- Noise
- Non-constant failure rates
- Non-identical devices
- Non-intrusive load monitoring
- Non-isolated EV Chargers
- Non-linear control
- Non-linear loads
- Non-standard electrical machine
- Normally-off
- Normally-on
- NTC sensor
- Nuclear fusion
- OCV fitting
- Ohmic losses
- ON/OFF control
- On-board auxiliary power supply system
- On-board charger
- On-board network
- On-chip fuse
- Open switch fault
- Open-end winding
- Open-ended winding PMSM
- Operating condition
- Optimal control
- Optimal efficiency drive
- Optimization
- Optimization algorithm
- Optimization method
- Over-current protection
- Overmodulation
- P&O MPPT
- Packaging
- Parallel Hybrid Converter
- Parallel operation
- Paralleling
- Parasitic elements
- Parasitic inductance
- Parasitics
- Partial discharge



Particle accelerators
 Passive component
 Passive component integration
 Passive filters
 Passivity
 PD-PWM
 Permanent magnet
 Permanent magnet motor
 Permanent Magnet Synchronous Generator
 Permeability
 P-GaN regrowth
 Phase-shedding
 Phase-Shift Mode
 Photovoltaic
 Physics research
 Piezo actuators
 Piezoelectric resonator
 Planar magnetics
 Planar transformer
 Plasma
 PLL
 Plug and play control
 PM assisted Synchronous Reluctance Machine
 PMSM
 Pole placement
 Pole shift
 Portable appliances
 Power balance control technique
 Power conditioning
 Power converters for EV
 Power converters for FCEV
 Power converters for HEV
 Power cycling
 Power density optimisation
 Power die
 Power factor
 Power factor correction
 Power flow
 Power flow control
 Power fluctuation compensation
 Power Hardware-in-the-Loop
 Power integrated circuit
 Power Line Communication
 Power losses
 Power management
 Power plant performance
 Power quality
 Power semiconductor device
 Power sharing
 Power supply
 Power system
 Power transmission
 Predictive control prognosis
 Pressing
 Programming
 Protection device
 Pulsating DC Link Converter (PDLC)
 Pulse current charge/discharge
 Pulse Width Modulation (PWM)
 Pulsed current
 Pulsed power
 Pulsed power converter
 PV active generator
 Quad-Active-Bridge Series-Resonant Converter
 Quasi-two-level
 Radio frequency (RF)
 Rail vehicle
 Railway power supply
 Railway traction system
 Reactive power
 Real-time processing
 Real-time simulation
 Regenerative power
 Regulation
 Regulators
 Relative Gain Array
 Reliability
 Reluctance drive
 Renewable energy systems
 Residual current device
 Resonant converter
 Resonant peak damping strategies
 Reverse recovery
 RIE
 Ripple minimization
 Ripple port
 Road vehicle
 Robotics
 Robust control
 Robustness
 Root trajectory
 Rotor eccentricity cogging
 Rotor temperature sensing
 Safety
 Saturation
 Scalable control



- Schottky diode
- Seamless transfer
- Self-sensing control
- Semiconductor device
- Sensitivity analysis
- Sensor
- Sensorless control
- Sensorless current sharing
- SEPIC converter
- Servo-drive
- Shedding and restoration algorithms
- Ship
- Shoot-through
- Shore-to-ship charging
- Short circuit
- Short circuit current data exchange
- Shunt current
- Signal processing
- Silicon Carbide (SiC)
- Silicone gel
- Simulation
- Sine filter
- Single phase system
- Single-event burnout
- Six-step
- Sliding mode control
- Small-signal
- Small-signal stability
- Smart Gate Drivers
- Smart grids
- Smart loads
- Smart meter
- Smart microgrids
- Smart power
- Snubber
- Soft switching
- Software
- Software-defined power domains
- Solar cell system
- Solar field
- Solenoid inductor
- Solid-State
- Solid-State Circuit Breaker (SSCB)
- Solid-State Transformer
- Space
- Space Vector PWM
- Speed control
- Spike detection
- Split-source inverter
- Square-wave operation
- Stability
- Stability analysis
- Stability assessment
- Stacked converter
- Standard
- Standardization
- State of charge
- State-space
- State-space model
- Static Synchronous Compensator (STATCOM)
- Static Var Compensator (SVC)
- Statistics
- Submodule capacitor parameter design
- Sub-Synchronous Resonance (SSR)
- Super junction devices
- Supercapacitor
- Superconducting Magnetic Energy Storage (SMES)
- Superconductors
- Supervisory system
- Supply quality
- Sustainable system
- Sustainable technology
- SVC
- Switched capacitor
- Switched reluctance drive
- Switched-mode power supply
- Switching and conduction losses
- Switching frequency control
- Switching losses
- Synchronization
- Synchronization stability
- Synchronous Buck Converter
- Synchronous motor
- Synchronous rectifier
- Synchronous Reluctance Machine (SynRM)
- Synthetic inertia
- Synthetic inertia control
- System identification
- System integration
- System modeling
- Systems engineering
- Teaching
- Technology-readiness level
- Test bench
- Thermal cycling
- Thermal design



Thermal model
 Thermal storage
 Thermal stress
 Thermo-electric energy
 Third harmonic injection
 Three-phase motor drive
 Three-phase system
 Threshold voltage instability
 Threshold voltage shift
 Thyristor
 Tight voltage regulation
 Time resolution
 Time-domain analysis
 Time-sharing
 Torque sharing function
 Total harmonic distortion
 Traction application
 Traction loss minimization
 Transducer
 Transformer
 Transformer arrangement
 Transformerless
 Transformerless PV inverter
 Transient analysis
 Transistor
 Transmission of electrical energy
 Transport
 Transversal flux motor
 Triangular Current Mode
 Tri-port isolated DC-DC converter
 TS/EMT co-simulation
 TSEP
 T-type inverter
 Two-phase cooling
 Ultra capacitors
 Unbalanced AC grid
 Unbalanced voltages
 Uninterruptible Power Supply (UPS)
 V2G
 Vacuum micro-electronic device
 Variable speed drive
 Variable Switching Point
 Vector control
 Vehicle-to-Grid
 Vibration
 Vibration suppression
 Vienna rectifier
 Virtual impedance
 Virtual instrument
 Virtual prototyping
 Virtual Synchronous Generator (VSG)
 Virtual Synchronous Machine
 Voltage control
 Voltage recovery
 Voltage regulation
 Voltage Regulator Modules (VRM)
 Voltage sag compensators
 Voltage sensor
 Voltage Source Converter (VSC)
 Voltage Source Inverter (VSI)
 Volume reduction
 VSP3CC
 V-type
 Water transport
 Wave energy
 Wear-out failure
 Wide Bandgap
 Wide Bandgap devices
 Wide input voltage range
 Wide range operation
 Wind energy
 Wind-generator systems
 Winding topology
 Wiper motor
 Wireless control
 Wireless power transmission
 Wireless sensors
 ZCS converters
 ZCZVS converters
 Zero frequency
 Zero sequence voltage
 Zero speed
 Zero speed estimation
 Zero-voltage overshoot
 Zero-voltage switching
 Z-source converter
 ZVS converters