Applied Power Electronics Conference
And Exposition

APEC Presentation Topic Areas

Authors And Reviewers!

This Document Is Very Important To You!

Please Read It Carefully

Why Is This Important To Me?

Authors	Reviewers
When submitting your digest, you will have to choose one of the Presentation Topic Categories below. If you choose a category that is not the one most closely related to the actual topic of your paper, it will cause a delay in the review process. Your digest may be assigned to a reviewer who is not able to review your digest. The reviewer will then have to notify the Program Chair that the digest must be re-assigned. In the worst case, this may even result in your paper not getting reviewed before the review completion deadline. **In the worst case, this could mean your paper cannot be accepted!** If you have any question about which Presentation Topic Category is most appropriate for your digest, please do not hesitate to contact the APEC offices for assistance.	When you sign up to review digests, you will be asked to choose up to four Presentation Topic Categories in which you are competent to and interested in reviewing digests submitted to APEC. If you choose areas that are not in your areas of technical specialty, you will be assigned papers that you will not be qualified to review. This will frustrate you and cause delays in the review process. APEC asks that you read each of the areas below and choose to review digests only in areas where you are experienced, skilled and knowledgeable.

APEC Presentation Topic Categories

As APEC and the numbers of digest submitted grows, the job of matching digests with the right reviewers is getting more and more difficult. To make this job easier, APEC has developed a new listing of topic categories. The previous the Areas Of Technical Interests was too narrowly focused on circuits. The new Presentation Topic Categories includes a much wider range of topics including more systems, applications and business topics.

The approach to developing the new Topic Categories was structured and hierarchical. There are six main, general topic areas. Under each of these areas are more specific categories, such as *Single Phase Power Factor Correction Circuits*. There are about 50 of the individual topics. We know this is a lot of topic to read through in order to choose the one for your digest or to choose the areas in which you want to review.

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Power Electronic Circuits	
Topic	**Topic Area Description**
AC-DC Power Supplies	Discussions related to off-line, ac-dc power supplies: design, simulation, test and application. Papers that focus on one element of an off-line ac-dc power supply such as power factor correction or the high voltage dc to low voltage dc step-down conversion stage should choose the more specific topic.
Multi-Phase AC-DC Conversion Circuits And Power Supplies	Discussions related to multi-phase ac to dc conversion circuits, systems and applications: new circuits, design improvements, simulation, modeling, control and test. Includes topics like rectifier and PWM techniques.
Single Phase Power Factor Correction Circuits	Any discussion related to the power factor correction circuits for single phase ac power: new circuits, design improvements, simulation, modeling, control and test.
Multi-Phase Power Factor And Harmonic Correction Circuits	Any discussion related to the power factor correction and harmonic reduction circuits for multi-phase ac power: new circuits, design improvements, simulation, modeling, control and test.
All Other AC-DC Converter Circuits	Any other topic related to the conversion of ac power to dc power not covered by one of the topics above.
DC-DC Converters: General Purpose Isolated ("Bricks")	This topic is intended for the discussion of dc-dc converters typically used to power electronic equipment. These converters typically: operate from a nominal input voltage of 48 V or less, have an output voltage of 28 V or less, are rated less than 300 W or 100 A, are electrically isolated from input to output, and are mounted on the same circuit board as the circuits being powered. Topics include new topologies, efficiency improvements, analysis, modeling, simulation, control and application.
DC-DC Converters: General Purpose Non-Isolated	This topic is intended for the discussion of dc-dc converters typically used to power electronic equipment at the point-of-load (POL). These converters typically: operate from an input voltage of 12 V or less, have an output voltage of 5 V or less, are rated less than 100 A, and are mounted on the same circuit board as the circuits being powered. Topics include new topologies, efficiency improvements, analysis, modeling, simulation, control and application.
DC-DC Converters: Microprocessor Power (VRMs) And High Performance	Any discussion of dc-dc converters intended primarily to power microprocessors (VRMS, VRDs, etc.) and similar applications (DSPs, high performance ASICs, high performance programmable logic devices).
DC-DC Converters: High Voltage Or High Power	Any discussion of dc-dc converters for high voltage inputs (>48 V nominal), high voltage outputs (>28 V) or high power (>300 W or >100 A). Topics include new topologies, efficiency improvements, analysis, modeling, simulation, control and application.
All Other DC-DC Conversion	Any other topic related to conversion of dc power to dc power not included in the topics above.
DC To Single Phase AC Inverters	This topic is for the discussion of circuits and systems used to convert dc power to single phase ac power of any amplitude, power, wave shape or frequency. Topics include new topologies, efficiency improvements, analysis, modeling, simulation, control and application.
DC To Multi-Phase AC Inverters	This topic is for the discussion of circuits and systems used to convert dc power to multi-phase ac power of any amplitude, power, wave shape or frequency. Topics include new topologies, efficiency improvements, analysis, modeling, simulation, control and application.
All Other DC-AC Inverters	Any other topic related to circuits for converting dc power to ac power.

AC-AC Converters	Any topic related to circuits used to convert ac power of one characteristic (amplitude, frequency, wave shape) to ac power with a different characteristic (amplitude, frequency, wave shape). Topics include new topologies, efficiency improvements, analysis, modeling, simulation, control and application. Excludes transformers and magnetic devices.
Drives For DC Machines	This topic is for the discussion of any circuit used to provide power to a dc powered machine. Topics include new topologies, efficiency improvements, analysis, modeling, simulation, control and application. Please note that APEC does not accept papers which are primarily about electrical machines.
Drives For AC Machines	This topic is for the discussion of any circuit used to provide power to an ac powered machine. Topics include new topologies, efficiency improvements, analysis, modeling, simulation, control and application. Please note that APEC does not accept papers which are primarily about electrical machines.
All Other Power Electronics Circuits	Any discussion of power electronic circuits that does not fit any of the other circuit categories.

Power Electronic Components	
Topic	**Topic Area Description**
Semiconductors, Discrete	Any discussion of discrete semiconductors for power electronics applications: new devices, simulation and modeling, characteristics, testing and application.
Semiconductors, Integrated	Any discussion of integrated circuits for power electronics applications: new devices, simulation and modeling, characteristics, testing and application.
Magnetics	Any discussion of any magnetics components: transformers, inductors, magnetic amplifiers, materials, etc. and the design, modeling and simulation or testing thereof.
Capacitors	Any discussion of capacitors and capacitor technology as used in power electronics systems and circuits.
Batteries And Chargers	Any discussion related to primary or secondary batteries including chemistry, characteristics, application, charging, testing and capacity estimation.
All Other Energy Storage Components	Any discussion of power electronics issues and topics related to other energy storage components such as flywheels and superconducting magnet energy storage (SMES).
Connectors, Bus bars And Substrates	Any discussion of connectors, bus bars, substrates and other current carrying components for power electronics applications.
Thermal Management Components	Any discussion of components used in thermal management of power electronics applications: heat sinks, insulated metal substrates, thermally conductive pads and adhesives, heat pipes, etc.
All Other Components	All other components used in power electronics such as resistors, fuses and circuit breakers, switches and contactors, PTCs, surge suppressors, temperature sensing, current sensing, air moving devices, etc.

Power Electronic Systems And Applications	
Topic	**Topic Area Description**
Power Systems For Electronic Equipment	Includes discussions of powering electronic equipment such as telecommunications, networking, computing and industrial systems. Includes discussions of power system architectures. Also includes issues and topics in power system: design, analysis, modeling, simulation and system stability. Papers addressing reliability and fault tolerance should submit under the Reliability And Fault Tolerance topic below.

Mobile And Autonomous Equipment	Includes any discussion of power electronics for powering mobile or autonomous equipment such as handheld devices (mobile phones, PDAs, test equipment, cameras, mobile radios), portable equipment (lap top computers, test equipment), medical instruments in or on the body, and mobile robots with self contained power sources.
Automotive And Transportation	Includes any discussion of power electronics used in automotive and traction applications.
Aerospace And Military	Includes any discussion of power electronics used for powering aircraft, spacecraft and military equipment.
Lighting Systems And Ballasts	Includes any discussion of power electronics systems, circuits and applications specific to lighting systems and ballasts.
Alternative Energy, Distributed And Co-Generation	Includes any discussion of power electronics used in alternative energy, distributed generation and co-generation applications including solar power, fuel cells, wind power and micro-turbines. This topic is for equipment intended to supply power into or to replace the utility grid on a long term basis. See the topic for Uninterruptible Power Supplies below for contrast.
Uninterruptible Power Supplies	Includes any discussion of power electronics systems, circuits and applications specific to uninterruptible power supplies. This area is for UPSes intended for local replacement of utility power for limited amounts of time. See the topic Alternative Energy, Distributed And Co-Generation above for contrast.
Electrical Power Generation, Transmission And Distribution	Any discussion of power electronics systems and circuits for use in the traditional generation, transmission and distribution of electrical power through the utility grid.
All Other Applications Of Power Electronics	Any other application of power electronics systems or circuits.

General Electrical Design Issues And Topics	
Topic	**Topic Area Description**
Analysis, Modeling, Simulation and Synthesis	Any discussion in general on the analysis, modeling, simulation and synthesis of power electronics circuits. Papers addressing any of these for a specific circuit should submit in the topic for that circuit or application. For example, a paper with a new modeling technique for dc-dc converters should submit the paper under the dc-dc converter topic most closely matching the converters described in the paper.
Control Of Power Electronics	Any discussion in general on the control of power electronics circuits and systems. Includes digital control. Papers addressing the control of a specific circuit or system should submit in the topic for that circuit or application. For example, a paper with a new control scheme for dc-dc converters should submit the paper under the dc-dc converter topic most closely matching the converters described in the paper.
EMI/EMC	Any discussion related to EMI and EMC: filter circuits, shielding, causes of EMI, controlling EMI, simulations and predictions of EMI generation and control. For topics related to EMI and EMC regulatory issues, see the topic Standards And Regulations below.
Reliability And Fault Tolerance	Any discussion of the reliability, availability and fault tolerance of power electronics systems, circuits and components including calculation and estimation, physics of failure, reliability demonstration testing and reliability improvement processes.
All Other Electrical Design Topics	Any other topic related to the electrical design of power electronics systems or circuits.
Physical Design And Packaging	Any topic on the packaging and physical design of power electronics systems, circuits and components. Excludes thermal management which has its own topic.

Physical Design Issues And Topics	
Topic	**Topic Area Description**
Thermal Management	Any topic on the cooling and thermal management of power electronic equipment, systems, circuits and components. Includes new methods, analytical techniques, simulation techniques and experimental methods.
Integration Of Electrical, Physical And Thermal Tools	Any topic relating to the integration of any combination of electrical, thermal and physical design tools.
All Other Physical Design Topics	Any other topic related to the physical design and packaging of power electronic systems, circuits and components.
The Business Of Power Electronics	Any topic related to the business of power electronics: business models, sales, marketing, market forecasts, business forecasts, economics of the power electronics business.

Business, Manufacturing, Quality And Standards	
Topic	**Topic Area Description**
Manufacturing, Quality And Test	Any topic related to the manufacturing, test or quality processes of power electronics equipment or components.
DFx	Design For "X", Design For Manufacturability, Design For Quality, Design For Test, Design For Reliability, Design For Low Cost
Standards And Regulations	Any topic related to standards and regulations applicable to power electronics equipment such as product safety, EMI/EMC and environmental ("green"). Topics can be tutorials and discussions of existing standards and regulations or a preview of planned or expected changes.
All Other Topics	Any topic not described above.

Any Other Power Electronics Related Topic	
Topic	**Topic Area Description**