



IEEE WIRELESS COMMUNICATION AND NETWORKING CONFERENCE

(Co-located with CTIA Wireless 2004)

Atlanta, Georgia, USA, March 21-25, 2004 / www.wcnc.org/2004

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TUTORIAL PROPOSAL FORM

Please complete and return, preferably by email, to: D. Kingston, WCNC Project Manager, IEEE Communications Society, 305 East 47 St., New York, New York 10017 USA / Email: d.kingston@comsoc.org / Fax: +1.212.705.8996.

This form is designed to assist the instructor of a proposed one-half or full-day tutorial to organize and define the audience for the tutorial, and to give the WCNC Program Committee something to which to respond. Instructors of accepted tutorials will receive financial compensation. Contact Debora Kingston for further information.

Your proposal will be reviewed for topical relevance, issue analysis, overall strategic importance/value and financial feasibility. The information you provide will also be used to develop an effective marketing/promotional campaign; membership development and/or patronage strategies; and possible inter-organizational partnership opportunities. The more descriptive information you share about the tutorial and its intended audience, the more likely it is to receive a favorable response.

Date of Submission:

Title of Proposed Tutorial:

Proposed by:

(It is expected that the proposed instructor is submitting this tutorial proposal. Please note if this is not the case.)

Job Title:

Organization:

Address:

Phone/Fax/Email:

Event Format: ½ Day Tutorial Full Day Tutorial
Is this a first time offering? Yes No [please describe where/when offered previously]

#1: Tutorial theme and topics:

List the main theme and topics to be addressed. Provide a brief list of key words/phrases.

#2: Descriptions of topics:

Briefly describe the topics, including the keywords/phrases when possible.

#3: Primary Audience:

Briefly describe the PRIMARY audience interested in this tutorial topic, including typical job titles or functions (such as "research engineer", "software systems development", "operating company management", etc.). Explain how this audience can benefit from the tutorial, and identify the single most compelling reason for someone to attend.

#4: Secondary Audience:

Describe one or more SECONDARY audiences in the same way.

#5: Novelty:

What technology innovation(s) described by this tutorial make it likely to attract a large, curious audience?

#6: Technical Interest Profiles (TIP):

Based on the primary & secondary audience descriptions referenced above, please refer to TIP listings following these questions and check all those TIP entries representing IEEE members who might be attracted to this tutorial.

#7: Marketing and Competition:

Please suggest mailing lists (inside or outside Comsoc), trade publications and other promotional channels that should be considered to promote your tutorial. Please suggest any visual logo or symbol that could be associated with your tutorial to aid recognition in the marketplace. Please describe competitive educational offerings, on the topics of your tutorial, available in the marketplace, and advantages that you believe your tutorial has.

#8: Product/Service Associations:

For the purpose of attracting companies as exhibitors or conference patrons, please suggest what products or services typical members of your expected audience might be interested in? [For example: "operating company managers attending this tutorial may be interested in optical switches of the type described in this tutorial".]

#9: Biography:

As the proposed tutorial instructor, please provide a brief current biography noting your industry, R&D, research, academic experience and/or accomplishments as it relates to the overall subject matter. Do you have any previous meeting/conference program development experience?

IEEE TECHNICAL INTEREST PROFILES (TIP): Technical Interest Profile (TIP) codes are a list or grouping of technical areas representing the breadth and scope encompassed by each of the entity's technical interest. IEEE members were asked to select up to 5 TIP categories (either main heading categories or any of their subcategories using the corresponding numerical assignment) that closely relate to the member's technical interest areas. The codes serve many purposes, including promoting conferences.

0100 SIGNAL PROCESSING

- 0105 Time-Varying Signal Processing
- 0106 Multimedia Signal Processing
- 0120 Digital Signal Processing
- 0125 Communications Signal Processing
- 0130 Audio and Electroacoustics
- 0140 Speech Processing
- 0155 Sensor Array & Multichannel Signal Processing
- 0160 Image and Multidimensional Signal Processing
- 0170 Neural Networks
- 0180 System Design and Implementation
- 0190 Statistical Signal Processing

0200 BROADCAST TECHNOLOGY

- 0220 Broadcasting
- 0221 Transmitters and Antennas
- 0223 Video Signal Transmission
- 0228 Video Signal Processing Theory/Technology
- 0243 Video Tape Recording
- 0250 A.V. & RF Measurements & Test Equipment
- 0251 Digital Video Gen./Storage/Display
- 0264 Data Transmissions & Terminals
- 0268 Security Systems

0300 ANTENNAS AND PROPAGATION

- 0310 Antennas
- 0311 Reflectors & Lens Antennas
- 0313 Arrays
- 0315 MM & Sub MM Techniques
- 0320 Propagation
- 0322 Earth, Sea & Space
- 0330 Electromagnetic Theory
- 0331 Scattering & Diffraction
- 0333 Numerical Methods
- 0340 Electromagnetic Interaction Effects
- 0350 Systems Applications
- 0351 Radio Astronomy
- 0352 Radar
- 0353 Communication

0400 CIRCUITS AND SYSTEMS

- 0410 Analog, Digital & Mixed Mode Signal Processing
- 0411 Image & Video Signal Processing
- 0412 Nonlinear Signal and Image Processing
- 0413 Power Electronic Circuits & Systems
- 0414 Medical Electronics
- 0420 Circuits & Systems Theory, Design and Implementation
- 0430 Solid State Circuits & Systems
- 0431 Integrated Circuits Design & Technology
- 0460 Networks Analysis & Synthesis and Graph Theory
- 0461 Nonlinear and Chaotic Circuits & Systems
- 0462 Neural Networks, Systems & Applications
- 0463 Fuzzy Logic Networks, Systems & Applications
- 0470 Computer Aided Networks & Systems Design
- 0471 Multimedia Systems, Technology & Applications
- 0472 Communication Circuits, Networks, Systems & Applications
- 0473 Wireless Communication Circuits and Systems
- 0474 Internet Networks and Systems
- 0475 Micromachining Technology
- 0476 Nanostructures Circuits and Systems
- 0477 Sensors
- 0495 VLSI Circuits, Systems and Applications
- 0496 Low Power Electronics, Circuits, Systems & Applications

0500 NUCLEAR AND PLASMA SCIENCES

- 0510 Nuclear Science
- 0511 Particle Accelerator Science & Technology
- 0512 Reactor Instrumentation & Controls
- 0513 Radiation Effects
- 0514 Nuclear Instruments & Detectors
- 0515 Environmental Measurements & Monitoring

- 0516 Nuclear Medical and Imaging Sciences
- 0520 Plasma Sciences
- 0521 Plasma Science & Applications
- 0522 Fusion Technology
- 0523 Magnetohydrodynamics
- 0524 Pulsed Power
- 0530 Computer Applications in NPS
- 0531 Computational Simulation and Modeling in NPS
- 0532 Real Time Data Acquisition in NPS
- 0533 Remote Real-Time Collaboration / Instrument Access & Control
- 0534 Data Analysis Software in NPS

0600 VEHICULAR TECHNOLOGY

- 0610 Vehicular Communications
- 0620 Portable Communications
- 0630 Land Transportation
- 0640 Marine Communications
- 0650 Automotive Electronics
- 0660 Electric Cars
- 0670 Highway Electronics
- 0680 Command & Control
- 0690 Automotive Electrical Technology

0700 RELIABILITY

- 0710 Maintainability
- 0720 Reliability Physics
- 0730 Human Effects
- 0740 Software
- 0750 Applications
- 0751 Manufacturing

0800 CONSUMER ELECTRONICS

- 0810 Home TV Receivers
- 0820 Home AM & FM Sound Receivers
- 0830 Home Recorder/Playback Media
- 0840 Games
- 0850 Micro Processor Application & Control
- 0860 Pay TV Technology
- 0870 Cable Systems
- 0875 Home Computers
- 0880 Consumer Internet Access
- 0890 Residential Telephony
- 0895 Home Automation

0900 INSTRUMENTATION AND MEASUREMENT

- 0905 Measurement Precision, Sensitivity and Noise
- 0911 DC-Low Frequency Measurement
- 0915 Frequency and Time Measurement
- 0921 High Frequency Measurement
- 0925 Connectors in Instrumentation and Measurement
- 0931 Emerging Technologies in Measurement
- 0935 Signals and Systems in Measurement
- 0941 ATE Test and Measurement Systems
- 0945 Measurement Sensor Technology
- 0951 Waveform Measurement and Analysis
- 0955 Wireless and Telecommunications Measurements
- 0961 Measurement Process Control
- 0965 Virtual Systems in Measurement
- 0970 Laser and Optical Measurement Systems
- 0975 Materials Measurements
- 0980 Environmental Measurements
- 0985 Imaging Measurements
- 0990 Transportation Systems Measurements
- 0995 Self-Test and Built-In Test
- 0996 Intelligent Measurement Systems
- 0997 Education in Instrumentation and Measurement
- 0998 Measurement Microsystems
- 0999 Medical Measurements

1000 AEROSPACE AND ELECTRONIC SYSTEMS

- 1010 System Engineering

- [] 1011 System Design
- [] 1012 Integrated Avionics
- [] 1013 Mobile Electric Power
- [] 1014 Control Systems
- [] 1015 Packaging
- [] 1016 Electronic Test Systems
- [] 1017 Ground Test Facilities
- [] 1018 Performance Analysis
- [] 1019 Software
- [] 1030 Sensors
- [] 1031 Radar
- [] 1032 Sonar
- [] 1033 Radio Navigation
- [] 1034 Inertial
- [] 1035 Electro-Optic
- [] 1036 Satellite Navigation
- [] 1037 Inertial Navigation
- [] 1038 Celestial Navigation
- [] 1039 Other Navigation Sensors
- [] 1050 Vehicle Systems
- [] 1051 Aircraft
- [] 1052 Space Systems
- [] 1053 Marine Systems
- [] 1054 Land Vehicles
- [] 1055 Rocket Boosters
- [] 1056 Guided Weapons
- [] 1057 Autonomous Vehicles
- [] 1058 Crew Station
- [] 1070 Command and Control
- [] 1071 Centers
- [] 1072 Communication Networks
- [] 1073 Architecture and Software

1100 NEURAL NETWORKS

- [] 1110 Fuzzy Systems
- [] 1120 NN Application & Implementation
- [] 1121 Artificial Neural Networks
- [] 1130 Virtual Environments
- [] 1131 Artificial Life
- [] 1140 Learning Theory
- [] 1141 Genetic Algorithms
- [] 1150 Evolutionary Programming
- [] 1151 Connectionist Systems
- [] 1160 Biological Neural Networks

1200 INFORMATION THEORY

- [] 1210 Error Control Coding
- [] 1220 Shannon Theory
- [] 1230 Communications and Signal Processing
- [] 1240 Detection, Estimation & Identification
- [] 1250 Source Coding, Data Compression and Quantization
- [] 1260 Pattern Recognition and Learning
- [] 1270 Cryptography
- [] 1280 Communication and Data Networks
- [] 1290 Data Storage

1300 INDUSTRIAL ELECTRONICS

- [] 1310 Sensor and Data Fusion & Industrial Vision
- [] 1320 Power Electronics Devices, Circuits & Systems
- [] 1330 Industrial Applications of Signal Processing & Control
- [] 1340 Embedded Controllers
- [] 1350 Computer Control Software, Hardware & Interfaces
- [] 1355 Intelligent Systems
- [] 1356 Technology Integration
- [] 1370 ASICs and Portable Electronics
- [] 1380 Transportation Technology
- [] 1381 Electric Vehicles and Vehicle Electronics
- [] 1390 Factory Automation
- [] 1395 Mechatronics
- [] 1397 Industrial Multimedia
- [] 1398 Industrial Internet Technology
- [] 1399 Programming Languages in Industry

1400 ENGINEERING MANAGEMENT

- [] 1410 Management Development & Training

- [] 1420 Management Policies, Methods, Procedures
- [] 1430 Systems Management
- [] 1440 Program, Project Management
- [] 1450 Technical Information
- [] 1451 Technology Transfer
- [] 1452 Technology Forecast
- [] 1460 Professional Develop. & Motivation
- [] 1470 Resource Management
- [] 1480 Organization

1500 ELECTRON DEVICES

- [] 1510 Electron Tubes & Electron Beam Devices
- [] 1520 Semiconductor Discrete Devices
- [] 1530 Integrated Electronics
- [] 1540 Optoelectronic Devices
- [] 1550 Energy Conversion Devices
- [] 1560 Quantum Electronics
- [] 1570 Superconductive Devices
- [] 1580 Power Electronics
- [] 1590 Display Devices

1600 COMPUTER

- [] 1601 Computational Science
 - [] 1602 Computer Architecture
 - [] 1603 Computer Communications
 - [] 1604 Computer Elements
 - [] 1605 Computer Graphics
 - [] 1606 Computer Languages
 - [] 1607 Computer Packaging
 - [] 1610 Data Engineering
 - [] 1611 Design Automation
 - [] 1612 Distributed Processing
 - [] 1613 Fault Tolerant Computing
 - [] 1614 Mass Storage Systems
 - [] 1615 Mathematical Foundations of Computing
 - [] 1616 Microprocessors & Microcomputers
 - [] 1617 Microprogramming
 - [] 1618 Multiple Valued Logic
 - [] 1621 Operating Systems
 - [] 1623 Pattern Analysis & Machine Intelligence
 - [] 1625 Real Time Systems
 - [] 1627 Security & Privacy
 - [] 1628 Simulation
 - [] 1629 Software Engineering
 - [] 1630 Test Technology
 - [] 1631 VLSI
 - [] 1632 Complexity in Computing
 - [] 1633 Computer Generated Music
 - [] 1634 Engineering of Computer Based Systems
 - [] 1635 Multimedia Computing
 - [] 1636 Parallel Processing
 - [] 1637 Supercomputing Applications
 - [] 1638 Computer Networks
 - [] 1639 History of Computing
 - [] 1640 Internet Computing
 - [] 1641 Intelligent Systems
 - [] 1642 Information Technology/Systems
 - [] 1643 Object-Oriented Computing
 - [] 1644 Visualization
 - [] 1645 Digital Libraries
- #### **1700 MICROWAVE THEORY AND TECHNIQUES**
- [] 1701 Computer-Aided Design
 - [] 1702 Microwave Acoustics
 - [] 1703 Lightwave Technology
 - [] 1704 Submillimeter-Wave Techniques
 - [] 1705 Microwave High-Power Techniques
 - [] 1706 Microwave and Millimeter Wave Integrated Circuits
 - [] 1707 Microwave and Millimeter Wave Solid State devices
 - [] 1708 Filters and Passive Components
 - [] 1709 Digital Signal Processing
 - [] 1710 Biological Effects and Medical Applications
 - [] 1711 Microwave Measurements
 - [] 1712 Microwave and Millimeter Wave Packaging
 - [] 1713 Microwave Ferrites
 - [] 1714 Microwave Low Noise Techniques

- [] 1715 Microwave Field Theory
- [] 1716 Microwave Systems
- [] 1717 HF-VHF-UHF Technology
- [] 1718 Microwave Superconductivity
- [] 1719 Microwave Technology Business Issues
- [] 1720 Wireless Communications
- [] 1730 RFIC's

1800 ENGINEERING IN MEDICINE AND BIOLOGY

- [] 1810 Biomedical Signal Processing
- [] 1815 Image Processing
- [] 1820 Computers in Medicine
- [] 1825 Data Acquisition
- [] 1830 Physiological Systems Modeling
- [] 1840 Prosthetic & Sensory Aids
- [] 1850 Biomedical Instrumentation
- [] 1855 Ultrasound in Medicine
- [] 1860 Bioelectric Phenomena
- [] 1870 Transducer Devices
- [] 1880 Biomedical Materials
- [] 1890 Clinical Engineering

1900 COMMUNICATIONS

- [] 1910 Communications Switching and Routing
- [] 1915 Network Operations, Management and Control
- [] 1920 Wireless Communications
- [] 1925 Communications Software Architecture and Implementation
- [] 1930 Satellite & Space Communications
- [] 1931 Radio Communications
- [] 1940 Transmission, Access and Optical Systems
- [] 1941 Gigabit Networking
- [] 1950 Internet Architecture, Technology, and Applications
- [] 1951 Enterprise Networking
- [] 1952 Defense and Military Communications
- [] 1953 Cable-Based Delivery and Access Systems
- [] 1955 Multimedia Communications and Digital Media
- [] 1965 Optical Communications and Networking
- [] 1966 Information Infrastructure
- [] 1970 Communication Systems Integration and Modeling
- [] 1975 Network Reliability and Quality Assurance
- [] 1980 Communications Theory, Modulations, and Coding
- [] 1985 Signal Processing, Storage and Communications Electronics
- [] 1990 Computer Communications, Systems and Protocols
- [] 1995 Interconnections in High-Speed Digital Systems
- [] 1997 Product Sales and Marketing
- [] 1999 Communications Standards

2000 ULTRASONICS, FERROELECTRICS & FREQUENCY CONTROL

- [] 2011 Physical Acoustics
- [] 2014 Nondestructive Testing & Evaluation
- [] 2016 Surface & Bulk Acoustic Wave Devices
- [] 2019 Biological & Medical
- [] 2023 Ferroelectrics
- [] 2031 Frequency Control

2100 COMPONENTS, PACKAGING & MFTG TECHNOLOGY

- [] 2110 Electrical Contacts & Connectors
- [] 2111 Printed Wiring
- [] 2130 Materials & Processes
- [] 2131 Semiconductor Process Technology
- [] 2140 Hybrid Microelectronics
- [] 2141 Photonics and Fiber Optics
- [] 2150 Manufacturing Technology
- [] 2151 Semiconductor Manufacturing
- [] 2152 Assembly Techniques
- [] 2153 Test Techniques
- [] 2154 Automation
- [] 2155 Quality Control Techniques
- [] 2156 Specifications and Standards
- [] 2159 Computer Applications
- [] 2160 Electronic Packaging
- [] 2161 Thermal Issues
- [] 2162 Power Circuit Technology
- [] 2170 Product Safety and Certification
- [] 2180 Discrete Component Parts & Subassemblies

2200 OCEANIC ENGINEERING

- [] 2215 Modeling, Simulation & Data Bases
- [] 2225 Marine Communications, Navigation & Positioning
- [] 2240 Sensors, Instrumentation & Data Acquisition
- [] 2255 Underwater Acoustics
- [] 2258 Vehicles & Systems
- [] 2264 Underwater EM & Optics
- [] 2275 Air/Space Remote Ocean Sensing
- [] 2280 Signal, Image & Information Processing
- [] 2285 Environmental Technology

2300 CONTROL SYSTEMS

- [] 2305 Control Theory
- [] 2310 Computer Aided Control System Design
- [] 2320 Manufacturing Automation and Robot Control
- [] 2330 Industrial Process Control
- [] 2340 Aerospace and Vehicular Controls
- [] 2350 Control of Power Systems
- [] 2360 Intelligent Control
- [] 2370 Control of Networks and Communication Systems
- [] 2380 Real Time Control Computing and Signal Processing
- [] 2390 Control Electronics
- [] 2395 Control Education

2400 ROBOTICS AND AUTOMATION

- [] 2410 Manufacturing Automation
- [] 2411 Mftg. System Architecture, Design and Performance Evaluation
- [] 2412 Computer Aided Production Planning, Scheduling, and Control
- [] 2413 Total Quality Management, Maintenance, and Diagnostics
- [] 2414 Intelligent Manufacturing Systems
- [] 2415 Enterprise-Level Modeling, Analysis & Supply Chain Coord.
- [] 2420 Robotics and Automation in Unstructured Environment
- [] 2421 Personal and Service Robotics
- [] 2422 Space and Underwater Robots and Systems
- [] 2423 Medical Robots and Systems
- [] 2424 Robotics and Automation in Agriculture and Construction
- [] 2425 Green and Sustainable Robotics and Automation
- [] 2430 Sensor Design, Integration, and Fusion
- [] 2431 Computer and Robot Vision
- [] 2432 Human-Robot Interfaces
- [] 2433 Teleoperation, Telerobotics, and Network Robotics
- [] 2434 Micro/Nano Electro-Mechanical Systems and Robots
- [] 2435 Distributed, Cellular and Biologically -Inspired Robots/Systems
- [] 2436 Intelligent Transportation Systems
- [] 2440 Robot Design, Modeling, Planning and Control
- [] 2441 Kinematics, Dynamics and Control
- [] 2442 Motion and Path Planning
- [] 2443 Manipulation and Grasping
- [] 2444 Legged and Wheeled Robots
- [] 2445 Control Architecture and Programming
- [] 2450 Methodologies for Robotics and Automation
- [] 2451 Discrete Event Dynamic Systems
- [] 2452 Petri Nets
- [] 2453 Mathematical Optimization
- 2454 Computational Intelligence

2500 EDUCATION

- [] 2510 Educational Methods
- [] 2520 Educational Technology
- [] 2530 Instructional Materials
- [] 2540 Educational & Professional Development
- [] 2550 History

2600 PROFESSIONAL COMMUNICATION

- [] 2610 General Writing & Editing Techniques
- [] 2620 Reproduction & Illustration Techniques
- [] 2630 Technical Publications
- [] 2639 Management
- [] 2640 Technical Presentations
- [] 2660 Information Processing
- [] 2680 Technical Journalism
- [] 2690 Technical Writing Education

2700 ELECTROMAGNETIC COMPATIBILITY

- [] 2710 Methods of Measurement

- [] 2711 Electromagnetic Interference Control
- [] 2712 High Power Electromagnetics
- [] 2713 Nonsinusoidal Fields
- [] 2714 Computational EMC
- [] 2715 Standards
- [] 2716 Laboratory Accreditation
- [] 2720 Electrostatic Discharge/Lightning
- [] 2721 Electromagnetic Environment
- [] 2730 Equip./Sys Analysis
- [] 2731 Electromagnetic Product Safety
- [] 2750 Spectrum Management
- [] 2770 EMC Management
- [] 2775 Education

2800 SYSTEMS, MAN, AND CYBERNETICS

- [] 2810 Systems Science
- [] 2811 Modeling & Simulation
- [] 2812 Systems Analysis & Decision Analysis
- [] 2815 Econ, Environ, Social, & Urban Systems
- [] 2820 Cybernetics
- [] 2821 Adaptive Systems
- [] 2822 Pattern Recognition
- [] 2823 Bio-cybernetics
- [] 2830 Man-machine Systems
- [] 2831 Human & Social Values

2900 GEOSCIENCE AND REMOTE SENSING

- [] 2910 Solid Earth
- [] 2920 Oceanic
- [] 2930 Atmospheric
- [] 2940 Space
- [] 2950 Pollution
- [] 2960 Earth Resources
- [] 2970 Exploration
- [] 2980 Interaction Effects-Air-Sea-Space-Earth
- [] 2990 Data Acquisition, Transmission & Process

3000 SOCIAL IMPLICATIONS OF TECHNOLOGY

- [] 3010 Engineering Ethics
- [] 3020 Technology Forecasting & Assessment
- [] 3030 Socioeconomics
- [] 3040 Government & Technology
- [] 3050 History of Electrotechnology

3100 POWER ENGINEERING

- [] 3110 Insulated Conductors
- [] 3113 Stationary Batteries
- [] 3115 Nuclear Power Engineering
- [] 3120 Energy Development and Power Generation
- [] 3127 Power System Analysis, Computing and Economics
- [] 3128 Power System Dynamic Performance
- [] 3129 Power System Operations
- [] 3131 Power System Planning and Implementation
- [] 3132 Power System Communications
- [] 3134 Power Systems Instrumentation & Meas.
- [] 3136 Power Systems Relaying
- [] 3140 Electric Machinery
- [] 3150 Substations
- [] 3160 Surge Protective Devices
- [] 3170 Switchgear
- [] 3180 Transformers
- [] 3190 Transmission & Distribution

3200 DIELECTRICS AND ELECTRICAL INSULATION

- [] 3210 Dielectric Phenomena
- [] 3211 Corona
- [] 3213 Charge Storage and Transport
- [] 3220 Dielectric Materials
- [] 3221 Encapsulants
- [] 3222 Liquid Dielectrics
- [] 3223 Magnet Wire
- [] 3224 Materials for Electronics
- [] 3230 Insulation Diagnostics

3300 MAGNETICS

- [] 3310 Control & Power Conversion

- [] 3315 Large Magnet Technology
- [] 3320 Electronic Transformers
- [] 3325 Magnetic Separation
- [] 3335 Memories and Magnetic Bubbles
- [] 3340 Magnetic Recording
- [] 3350 Measuring Technology
- [] 3355 Soft Magnetic Materials
- [] 3360 Microwave Magnetics
- [] 3380 Superconducting Magnets & Materials
- [] 3390 Permanent Magnets

3400 INDUSTRY APPLICATIONS

- [] 3410 Corrosion and Cathodic Protection
- [] 3411 Electrostatic Processes
- [] 3412 Power Electronic Devices and Components
- [] 3413 Industrial Power Converters
- [] 3414 Industrial Power Conversion Systems
- [] 3415 Electric Machines
- [] 3416 Industrial Drives
- [] 3417 Power Electronics Packaging
- [] 3420 Industrial and Commercial Power Systems
- [] 3421 Industrial Automation and Control
- [] 3422 Codes and Standards
- [] 3423 Energy Systems
- [] 3424 Power Systems Engineering
- [] 3425 Power Systems Protection
- [] 3426 Power Quality
- [] 3431 Railway Electrification
- [] 3432 Marine Transportation
- [] 3440 Application, Light Industries
- [] 3441 Domestic Appliance
- [] 3442 Elect. Space Heating & Air Conditioning
- [] 3443 Production & Application of Light
- [] 3444 Textile, Film and Fiber Industry
- [] 3445 Manufacturing Systems Development and Applications
- [] 3450 Process Industries
- [] 3451 Cement Industry
- [] 3453 Glass Industry
- [] 3454 Metal Industry
- [] 3455 Mining Industry
- [] 3456 Petroleum & Chemical Industry
- [] 3457 Pulp & Paper Industry
- [] 3460 Electric Process Heating
- [] 3470 Machine Tool Industry
- [] 3480 Rural Electric Power
- [] 3490 Electrical Safety, Industry & General

3500 POWER ELECTRONICS

- [] 3511 DC-to-DC Converters and DC Power Supply Systems
- [] 3515 Rectifiers and AC Power Supply Systems
- [] 3521 Motor Drives and Motion Control
- [] 3525 Analysis and Control of Power Electronics Systems
- [] 3531 Computer-Aided Design (CAD) of Power Electronics Systems
- [] 3535 Telecommunications Energy Systems
- [] 3540 Utility Power Electronics
- [] 3545 Automotive and Transportation Power Electronics
- [] 3550 Aerospace Power Electronics
- [] 3555 Electronic Ballasts
- [] 3560 Electromagnetic Compatibility and Electromagnetic Interference
- [] 3565 Power Quality
- [] 3570 Electronic Transformers and Magnetics
- [] 3575 Capacitors
- [] 3580 Discrete and Integrated Power Semiconductor Devices
- [] 3585 Packaging of Power Electronics Systems

3600 LASERS AND ELECTRO-OPTICS

- [] 3615 Electro-Optical Sensors & Systems
- [] 3625 Optical Fiber and Planar Waveguide Technology
- [] 3632 Short Wavelength & Gas Lasers
- [] 3634 Lasers in Medicine & Biology
- [] 3635 Nonlinear Optics
- [] 3636 Semiconductor Lasers
- [] 3638 Solid State Lasers
- [] 3645 Optical Communications
- [] 3647 Optical Networks & Systems
- [] 3649 Optoelectronic Packaging, Manufacturing & Reliability

- [] 3650 Optical Interconnects & Processing Systems
- [] 3660 Integrated Optics & Optoelectronics
- [] 3680 Ultrafast Optics & Electronics
- [] 3685 Displays
- [] 3690 Photodetectors & Imaging

3700 SOLID-STATE CIRCUITS

- [] 3710 Integrated Circuits - Digital
- [] 3711 Integrated Circuits - Analog and Mixed Signal
- [] 3712 Integrated Circuits - Communication and RF
- [] 3713 Semi-custom and ASIC Design
- [] 3714 VLSI Circuit, Chip and System Design
- [] 3720 Memories - Semiconductor, Magnetic, Optical
- [] 3730 Optoelectronics and Imaging
- [] 3740 Computer Aided Design - Analysis, Synthesis, Verification, Physical Design
- [] 3750 Solid-State Microwave Electronics
- [] 3760 New Solid-State Device and Circuit Applications
- [] 3770 Solid-State Circuit Design Techniques
- [] 3780 Medical Electronics
- [] 3781 MEMS/Sensor/Actuator/Transducer Electronics
- [] 3790 Circuit and System Test

3900 INTERDISCIPLINARY AND NEW ACTIVITIES

- [] 3910 History of Electrical Engineering
- [] 3912 Energy
- [] 3915 Data Banks & Electronic Surveillance
- [] 3918 Communications Policies
- [] 3920 Transportation
- [] 3930 Electrography
- [] 3940 Environmental Quality
- [] 3941 Nonionizing Radiation
- [] 3942 Ionizing Radiation
- [] 3950 Electro-rheology
- [] 3960 Electronic Materials
- [] 3970 Cryogenics & Superconductivity
- [] 3980 Technology Forecasting & Assessment

4000 ENVIRONMENT, HEALTH AND SAFETY

- [] 4010 Design for Environment
- [] 4011 Life-Cycle Analysis
- [] 4012 Added Recycling
- [] 4013 Environmental Manufacturing
- [] 4014 Product End of Life Management
- [] 4020 Industrial Ecology