List of Keywords for OECC/PSC 2019

O1. Core/Access/Data Center Networks and Subsystems

- Core Network and Subsystem
- Design of node architectures including optical core/metro protection and restoration
- Optical cross-connects/add-drop multiplexers subsystems
- Energy-efficient optical networking technologies and subsystems
- Field trials, testbeds, and interoperability demonstrations of optical networks
- Disaggregation and NFV/SDN techniques in optical core/access networks
- Access Network and Subsystem
- Future high capacity and long-reach access networks including WDM-PON, OFDM-PON, TWDM-PON
- Survivability techniques and operational issues for resilient access networks
- Optical access network architecture, design, protection, and management
- Optical access networks for post 5G mobile service
- Hybrid wireless-optical access networks
- Radio-over-fiber access networks
- Data Center Network and Subsystem
- Data analytics for network control and management in optical core/data center networks
- Optical core/metro/data-center network architecture, design, virtualization, slice, control and management

O2. Transmission Systems and Subsystems

- Transmission and Propagation
- Transmission experiments for long haul, core and metro applications including data-center interconnect
- Transmission impairments and their mitigations
- Advanced Modulation, Coding and Multiplexing
- Advanced modulation and demodulation
- Coding and forward error correction for optical communications
- Multiplexing and demultiplexing techniques including OTDM, OFDM, OCDM and SDM
- Transmission Subsystems
- Digital signal processing techniques for optical communications
- Optical signal processing techniques for optical communications
- Optical transmitter and receiver subsystems

O3. Optical Fibers, Cables and Fiber Devices

- Fibers & Cables for Communication
- Fiber design and fabrication
- Fibers for space division multiplexing
- Fiber cabling, installation, and maintenance
- Fibers for optical interconnection
- Fiber Based Devices
- Fiber based devices for space division multiplexing

- Fiber based switching and nonlinear optical processing
- Fiber gratings
- Fiber/waveguide amplifiers and lasers
- Connectors, splicing and interconnection technologies
- Characterization & Advanced Fiber Applications
- Fiber characterization and measurement techniques
- Fibers for high power applications
- Fiber sensing
- Other novel fibers and fiber devices

O4. Optical Active Devices and Modules

- Photonic Integration
- Photonic integrated circuits
- Si photonic and heterogeneous platform
- Photonics-Electronics integration
- Packaging technology of photonic devices and circuits
- Advanced Active Devices
- Semiconductor lasers
- Semiconductor optical amplifiers
- Optical modulators
- Photodetectors
- New functional active devices
- Novel Materials and Structures
- Novel photonic materials for active devices
- Si/Ge, polymer   and novel III-V based active devices
- Quantum well, quantum dot and nano-structured photonic devices

O5. Optical Passive Devices and Modules

- Photonic Integration
- Photonic integrated circuits
- Si photonic and heterogeneous platform
- Photonics-Electronics integration
- Packaging technology of photonic devices and circuits
- Advanced Passive Devices
- Planar lightwave circuits (PLC)
- Optical filters, demultiplexers, demodulators, equalizers, dispersion compensators, and other signal conditioning devices
- Optical polarization control devices, polarizer, rotator, polarization beam splitter, wavelength plates
- Optical channel selecting/routing devices
- Optical isolator, circulator, variable attenuators
- Free-space optics or optical micro-electro-mechanical system (MEMS) for photonic networks
- Spatial division multiplexing (SDM) waveguide devices

- Liquid crystal devices for photonic networks
- Novel Materials and Platform for Passive Devices
- Micro- and nano-optics and related devices
- Emerging materials and fabrication method for passive photonic platforms
- Optical printed circuit board

P1. Photonics in Switching Technologies, Systems, and Architectures for Communications and Networking
- Switching Technologies, Subsystems and Advanced Functionality
- Optoelectronic and all-optical switches
- Photonic integrated technologies for compact and low power consumption switching subsystems and modules
- Wavelength switching and routing technologies
- Novel phenomena for switching and routing
- 2D and 3D MEMS/LCOS switches including wavelength selective switches
- SDM technologies for photonic switching and networking
- Optical signal processing, modulation, coding/decoding and compensation/error correction techniques for advanced photonic switching system
- RF over optical processing and transmission
- Microwave photonics
- Optical cross-connects and reconfigurable optical add-drop mux/demux
- Error correction techniques for advanced switching functionality
- Switching Digital Technology & Deployable Technology
- Modelling, design, implementation, Impairment mitigation, algorithms for advanced switching functionality
- Spectral efficiency exploitation for advanced switching functionality
- Digital technology for converged mobile and optical networks
- Design technologies for deployment
- Demonstrations and field trials
- Switching Systems, Architectures and Network Integrations
- Rapidly reconfigurable switching networks including Wavelength (spectrum) routing and assignment for wavelength-switched optical networks
- Next-generation GMPLS and OpenFlow
- Software defined networking for photonic switching systems
- Energy efficient switch and network architectures and algorithms
- Physical impairment aware switched-network architectures and algorithms
- Optical circuit-, burst-, slot-, packet switched systems and their networking
- Optical interconnects for high-density and large-scale switching technologies

P2. Photonics in Switching Technologies, Systems, and Architectures for Computing and Big Data
- Advancement and Evolution of Computing & Big Data Oriented Technologies Exploiting Photonics
- Advanced photonics technologies for computing & big data applications
- Hardware architectures for computing and big data
- Optical switching technologies for high-performance computing and data centers
- Massively parallel and high-performance super computing
- Warehouse scale computing
- Photonic ASIC/FPGA computing

- Quantum computing
- Neuromorphic computing
- Dependable computing
- Big data-oriented computing
- Big data storage, scheduling, and optimization
- Big data maintenance, management, and operations
- Big data distribution, migration and integration
- Applications, Prototyping, and Experimentation of Photonic Networking/Switching Systems for Computing and Big Data
- Latency/locality/mission-critical systems and applications
- Fog/edge computing infrastructure and applications
- Tactile Internet applications
- Grid computing applications
- Internet of Things aware systems and applications
- Prototyping and experimentation for computing and big data oriented systems
- Photonic Networking/Switching System Designs and Architectures for Computing and Big Data
- Availability/reliability/disaster recovery in big data-oriented computing systems
- Resource provisioning/ metering/ monitoring of computing and big data oriented systems
- Software defined networking (SDN) for computing and big data control
- Network function virtualization (NFV) at edges/datacenters
- Green systems for computing and big data environment
- Interactions and extensive communications between edge and central cloud