

History / Achievement

2010-2013

2013

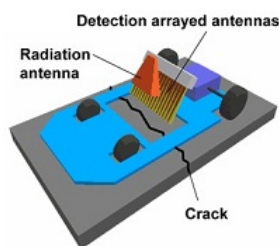
- Cooperative Wireless LAN System
- Space-division-multiplexing Technologies for 1Pbit/s Transmission
- World highest 102Tbps-240km transmission based on 400Gbps high speed channel transport technology
- Ultra-small, Ultra-low Power Wireless Sensor Nodes with Energy Harvester
- Wearable Electrodes for Detecting Biomedical Signals
- Millimeter-wave Passive Camera using MMIC
- Monolithically-integrated WDM Receiver Based on Silicon Photonics
- Phase Sensitive Optical Amplifier Using PPLN Waveguides
- Research on Child Vocabulary Development
- Silicon Single-electron Transfer and Detection Device

2012

- Statistical machine translation between English and Japanese with accurate word order
- Real-time robust media search technology on smartphones
- Millimeter-wave (60-GHz band) non-contact high-speed transmission systems
- Ultra-small, ultra-low power wireless sensor nodes with energy harvester
- Digital coherent optical transport network devices
- Phase sensitive amplifier using periodically poled LiNbO₃
- Programmable network virtualization technologies
- Conductive polymer combined with silk fibers for biomedical electrodes
- Advanced thin-film materials technology leading to innovative device designs
- Visual illusion reveals image-based neural representations of 3D objects in the human brain
- Integrated nanophotonics technologies (photonic crystals silicon photonics)
- 3D nanostructures and nanomachine technologies
- KTN swept light source for high-speed Optical Coherence Tomography (OCT)
- Laser gas sensing technology for analyzing isotope ratio

2011

- 100-Gbit/s Optical Transmission Field Trial Using Digital Signal Processor
- Programmable Network Virtualization Technologies for Future Networks
- Ubiquitous Terminals for Various Telemetry Applications
- Millimeter-Wave Scanner: Precise Imaging Technique for Nondestructive Inspection



- Monolithically Integrated Light Source for Future 100 GbE Transceiver
- Phase-Sensitive Amplifier Capable for Ultra-Low-Noise Amplification
- Optic Flow Facilitates Smooth Handwriting
- Formal Verification Method of Anonymity and Privacy
- Quantum Memory: Storing Superconducting Qubit Information
- Unraveling Exotic Electronic States for Error-Free Quantum Computing

2010

- World's First 1-Gbit/s Multi-user MIMO Transmission



- Spectrally Efficient Elastic Optical Path Network (SLICE)
- 10 G-EPON OLT and ONU LSIs



- Compact and Functional Photonic Device Integration based on Silicon Photonics
- Ultrahigh-speed DAC for Optical Communications Systems
- Photonic Crystal Laser with Ultra-low Power-energy Cost
- Fast, Compact Random Number Generator Using Semiconductor Lasers



- Human Activity Recognition with Wrist-worn Sensor Device
- Atto-joule All-optical Switch ~Putting a Photonic Network into a Chip
- New Digital Processing Scheme Using Micromachine Technology