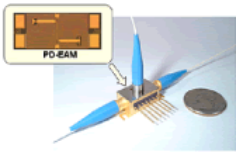
# History / Achievement

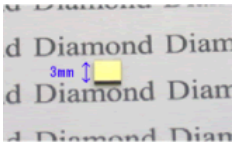
## 2002-2005

### 2002

· Announcement of the "Vision for New 'Optical' Generation" Initiative
· The Lifestyle and Environmental Technology Laboratories and Telecommunications Energy Laboratories were dissolved. The Microsystem Integration Laboratories were established.
· NTT streams Super High Definition movies in the global-scale high-speed networks
· Over 300 channel WDM transmission system using single light source
· Development of portable sensor for monitoring environmental benzene gases
· Ring-type ubiquitous audio receiver
· A high-speed optical signal demultiplexing device is developed

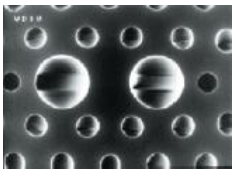


· The integrated circuit for optical communications of world maximum high speed is developed
· A new Illusion of Jittery Motion Seen in a Static Picture
· Blind Source Separation of Audio Signals
· Observation of qubit operations in an artificial molecure
· Fabrication of Semiconductor Diamond thin films




### 2003

· Development of Photonic Crystal Fiber

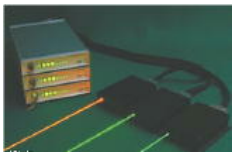


· Extended IP Multicast Protocol (IGAP) for Content Delivery Systems
· 120-GHz Gigabit Wireless Link

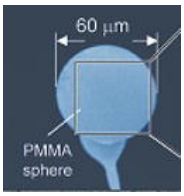
· Portable Fingerprint Identification Device (FingerToken)
· Development of Large-Scale Integrated Optical Switches Based on Silica Waveguide
· Photonic RAM: The Key for Facilitating an Optical Router Development
· Very Quick Search of Audio and Video Signals --Global Pruning Method Enables Searching through Two Weeks' Worth of Audio/Video Data in One Second
· Parametric Mixture Model for Detecting Multiple Topics of Text
· Observation of the Spin Selection Rule in Semiconductor Artificial Atoms --Toward Quantum Computing
· Development of a Diamond Microwave Power Device
· Development of Supercritical Dryer for Ultra-Fine Patterning

## 2004

· Experimental Success of Wide-Area HD Streams by Flexcast toward the Broadband and Ubiquitous Era
· Internet Video Studio System for HDTV Production (i-Visto)
· Two Fundamental Technologies (GMPLS and GSMP) for Controlling a Photonic Network
· Cellular Phone Application Merging Virtual Objects into the Real World (PopRi)
· Portable BTX Gas Sensor
· Ultrasmall Audio Receiving Unit (VoiceUbique)
· Compact Lasers Generating Arbitrary Wavelength Light

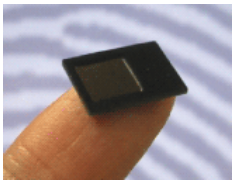


· KTN Crystals with the Highest Reported Electro-Optic Effect
· Ultrahigh-Speed 100-Gbit/s IC for Optical Communication Systems
· Clarifying the Computing Power of Quantum Computers -Differences Between Quantum and Classical Circuits in Performing Basic Arithmetic Operations
· Find that Background Music! -Quick Retrieval Method for Background Music Signals (DAL)
· Investigation of HDAG Kernels -New Text Similarity with Consideration to Grammar and Meaning Structure
· Millimeter-Wave Amplification of Diamond Field-Effect Transistor
· Three-Dimensional Nanofabrication Using Electron-Beam Lithography -The World's Smallest Globe

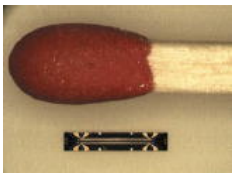



## 2005

· 1,000 Channel WDM Transmission
· Container Administrative Experiment by Using Active RFID Tags
· Human Area Networking Technology (RedTacton)
· Single-Chip Fingerprint Identification LSI



· Compact and Low-Driving-Voltage Semiconductor Mach-Zehnder Modulator



· 10-Gbit/s Directly Modulated Distributed-Feedback Laser
· Extremely Large Vocabulary Speech Recognition Technology
· Recalibration of Audio-Visual Simultaneity
· Demonstration of Multi-Photon Rabi Oscillation of Josephson Quantum Bits
· Quantum Key Distribution Experiment over an Optical Fiber