

Electro-Optical advances

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Lasers and Electro-Optics Society (LEOS) interests cover lasers, optical devices, optical fibers, and associated lightwave technology and their applications in systems and subsystems in which quantum electronic devices are key elements.

Optical Communications

The Optical Communications market reached \$19B in 2006 and is expected to grow to nearly \$40B by 2017. This is lead by growth in optical networking equipment which is expected to be strongly influenced by the emerging use of dynamic optoelectronic components being developed at universities and industrial labs around the world.

Highlights of Optical Communications work currently being reported include:

- Advances in Amplification Technology for the Agile Optical Network,
- Hybrid Integration Technology for High Functional Devices for Future Optical Communication,
- Electrooptic Polymer Waveguide Devices for Telecommunication,
- Electronic Dispersion Compensation Techniques, and
- Optical Optical Frequency Division Multiplexing: A Candidate for Future Lightwave Systems.

Lasers and their Applications

The laser market is forecast to grow steadily from slightly over \$6B in 2006 to double that figure by the end of the next decade. Growth areas include materials processing as well as industrial and medical applications. Specific growth areas include:

- Subcellular Surgery and Nanosurgery,
- Synthesis and Performance of Advanced Ceramic Lasers,
- Terahertz Quantum Cascade Lasers: High-Power and High-Temperature Operation,
- Two-Photon Absorption Imaging of Hemoglobin, and Dynamic Surface Emitting Fiber Laser.

Other growth areas

LEOS is also interested in important applications of optoelectronic devices including high brightness LEDs for displays and illumination which is forecast to grow to over \$60B over the next decade.