

WINTERGREEN RESEARCH, INC.

**Medical Tunable Laser Market Opportunities, Strategies,  
and Forecasts, 2006 to 2012**

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**Medical Tunable Laser**

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*Picture by Susie Eustis*

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**WinterGreen Research, Inc.  
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**CHECK OUT THESE KEY TOPICS**

*MID IR MEDICAL TUNABLE LASER MARKET FORECASTS*  
*MEDICAL TUNABLE LASERS MARKET DRIVING FORCES*  
**Gold Nanoparticles And Lasers Cancer Surgery**

**Laser Diodes**

*Eye Surgery Wavelength Considerations*  
*Tunable Laser Spectroscopy*  
*TUNABLE LASER MARKET ANALYSIS*  
**TUNABLE LASER MARKET GROWTH FACTORS**  
**WAVELENGTH BANDS AS RELEVANT FOR PHOTOBIOLOGY**  
**TUNABLE LASER MEDICAL SYSTEMS**  
**RESPIRATORY DIAGNOSTIC & TREATMENT USE OF TUNABLE LASERS**  
**CONTINUOUS WAVE OPTICAL PARAMETRIC OSCILLATORS**  
**TUNABLE LASERS FOR CANCER DIAGNOSIS & TREATMENT**  
*MINIMALLY INVASIVE SURGERY TECHNIQUES*  
*TUNABLE LASERS FOR VASCULAR & HEART DIAGNOSIS*  
*(TDLAS) TOOL FOR EXHALED NITRIC OXIDE (ENO) MEASUREMENTS*

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## **Medical Tunable Laser Market Opportunities, Market Forecasts, and Market Strategies, 2006-2012**

Medical Tunable Lasers are available in 2006 for commercial deployment. Tunable laser medical systems are used for diagnostic and therapeutic purposes. Tunable laser medical systems are expected to find uses for the diagnosis and treatment of the heart. The Comprehensive Cancer Center, University of California at San Francisco, CA is doing research on gold nanoparticles and lasers in the otolaryngology-head and neck surgery.

Efficient conversion of strongly absorbed light by plasmonic gold nanoparticles to heat energy and their easy bioconjugation suggest their use as selective photothermal agents in molecular cancer cell targeting.

Absorption spectroscopy is emerging as a significant mechanism useful for diverse medical purpose. Inflammation is a significant aspect of respiratory and heart disease. Tunable laser medical systems are useful for assessing airway and vascular inflammation and providing monitoring therapy.

Tunable lasers are poised to be very useful in medical applications. Vendors have reliable tunable lasers that are priced reasonably. Volume is expected to push the prices of tunable lasers down.

Vendors have a range of devices that provide some tunability and are priced in a manner attractive to the market. Medical tunable lasers take full advantage of the dynamic aspects provided by variability of tunable lasers. Tunable lasers address multiple different medical applications. A tunable laser will stay at the same channel unless the software instructs it to change.

Companies are setting up controllers that build different lasers for different medical markets. Any laser is being designed to tune to any frequency within a particular application. Dynamically tuning lasers in response to patient condition means the capacity and flexibility of fiber optic networks for dramatically improve diagnostic and therapeutic capabilities while decreasing the cost of running the network.

Breath meters are used for asthma screening and asthma therapeutic monitoring. Ekips breath meter is reagent-free. The value of a reagent-free reagent-free instrument is that it can rapidly measure trace NO concentrations during an exhalation. The reagent-free feature of the breath meter is important since it allows easy implementation in clinical settings.

Highly accurate laser technology is poised to replace spirometry as a screening and monitoring tool for pulmonary, allergy and immunology lung testing. Clinical trials in collaboration physicians are underway to develop additional breath tests such as one for early detection of lung cancer and measurement of specific biomarkers associated with schizophrenia.

Markets at \$5.6 million in 2005 are anticipated to reach \$2.8 billion by 2012. Growth will be a result of advances in chemistry and nanotechnology that make optics more useful in medicine. Medical uses of tunable laser build on medical uses of lasers which are well established for eye surgery and facial surgery.

## Companies Profiled

### Market Participants

Aculight Corporation  
Continuum  
Given Diagnostic System  
Lumenis  
Mediscience Technology  
Photonics

Coherent  
Ekips Technologies  
Intel  
Medlite C Series Lasers  
Opotek  
SpectRx

# Medical Tunable Laser Strategies and Forecasts, 2006-2012

## REPORT METHODOLOGY

THIS IS THE 266TH REPORT IN A SERIES OF MARKET RESEARCH REPORTS THAT PROVIDE FORECASTS IN COMMUNICATIONS, TELECOMMUNICATIONS, THE INTERNET, COMPUTER, SOFTWARE, TELEPHONE EQUIPMENT, HEALTH EQUIPMENT, AND ENERGY. THE PROJECT LEADERS TAKE DIRECT RESPONSIBILITY FOR WRITING AND PREPARING EACH REPORT. THEY HAVE SIGNIFICANT EXPERIENCE PREPARING INDUSTRY STUDIES. FORECASTS ARE BASED ON PRIMARY RESEARCH AND PROPRIETARY DATA BASES. FORECASTS REFLECT ANALYSIS OF THE MARKET TRENDS IN THE SEGMENT AND RELATED SEGMENTS. UNIT AND DOLLAR SHIPMENTS ARE ANALYZED THROUGH CONSIDERATION OF DOLLAR VOLUME OF EACH MARKET PARTICIPATION IN THE SEGMENT. INSTALLED BASE ANALYSIS AND UNIT ANALYSIS IS BASED ON INTERVIEWS AND AN INFORMATION SEARCH. MARKET SHARE ANALYSIS INCLUDES CONVERSATIONS WITH KEY CUSTOMERS OF PRODUCTS, INDUSTRY SEGMENT LEADERS, MARKETING DIRECTORS, DISTRIBUTORS, LEADING MARKET PARTICIPANTS, OPINION LEADERS, AND COMPANIES SEEKING TO DEVELOP MEASURABLE MARKET SHARE. OVER 200 IN DEPTH INTERVIEWS ARE CONDUCTED FOR EACH REPORT WITH A BROAD RANGE OF KEY PARTICIPANTS AND INDUSTRY LEADERS IN THE MARKET SEGMENT. WE ESTABLISH ACCURATE MARKET FORECASTS BASED ON ECONOMIC AND MARKET CONDITIONS AS A BASE. USE INPUT/OUTPUT RATIOS, FLOW CHARTS, AND OTHER ECONOMIC METHODS TO QUANTIFY DATA. USE IN-HOUSE ANALYSTS WHO MEET STRINGENT QUALITY STANDARDS. INTERVIEWING KEY INDUSTRY PARTICIPANTS, EXPERTS AND END-USERS. OUR RESEARCH INCLUDES ACCESS TO LARGE PROPRIETARY DATABASES. LITERATURE SEARCH INCLUDES ANALYSIS OF TRADE PUBLICATIONS, GOVERNMENT REPORTS, AND CORPORATE LITERATURE.

**YOU MUST HAVE THIS STUDY**

# Medical Tunable Laser Market Opportunities, Strategies, and Forecasts, 2006 to 2012

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## ABOUT THE COMPANY

**WINTERGREEN RESEARCH**, HAS A UNIQUE RESEARCH STRATEGY THAT RELATES TO IDENTIFYING MARKET TRENDS THROUGH READING AND INTERVIEWING OPINION LEADERS. BY READING THE ELECTRONIC EQUIVALENT OF 40 FEET OF PAPER, WINTERGREEN RESEARCH SENIOR ANALYSTS CAN LEARN A LOT MORE ABOUT MARKETS, A LOT FASTER THAN CAN BE LEARNED THROUGH EXPENSIVE SURVEYS AND FOCUS GROUPS. THINKING ABOUT MARKET TRENDS IS A HIGH PRIORITY AT WINTERGREEN RESEARCH. AS WITH ALL RESEARCH, THE VALUE PROPOSITION FOR COMPETITIVE ANALYSIS COMES FROM INTELLECTUAL INPUT.

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**ABOUT THE PRINCIPAL AUTHORS**

**ELLEN T. CURTISS**, TECHNICAL DIRECTOR, CO-FOUNDER OF WINTERGREEN RESEARCH, CONDUCTS STRATEGIC AND MARKET ASSESSMENTS IN TECHNOLOGY-BASED INDUSTRIES. PREVIOUSLY SHE WAS A MEMBER OF THE STAFF OF ARTHUR D. LITTLE, INC., FOR 23 YEARS, MOST RECENTLY AS VICE PRESIDENT OF ARTHUR D. LITTLE DECISION RESOURCES, SPECIALIZING IN STRATEGIC PLANNING AND MARKET DEVELOPMENT SERVICES. SHE IS A GRADUATE OF BOSTON UNIVERSITY AND THE PROGRAM FOR MANAGEMENT DEVELOPMENT AT HARVARD GRADUATE SCHOOL OF BUSINESS ADMINISTRATION. SHE IS THE AUTHOR OF RECENT STUDIES ON WORLDWIDE TELECOMMUNICATIONS MARKETS, THE TOP TEN INTERNET EQUIPMENT COMPANIES, THE TOP TEN CONTRACT MANUFACTURING COMPANIES, AND THE TOP TEN TELECOMMUNICATIONS MARKET ANALYSIS AND FORECASTS.

**SUSAN EUSTIS**, PRESIDENT, CO-FOUNDER OF WINTERGREEN RESEARCH, HAS DONE RESEARCH IN COMMUNICATIONS AND COMPUTER MARKETS AND APPLICATIONS. SHE HOLDS SEVERAL PATENTS IN MICROCOMPUTING AND PARALLEL PROCESSING. SHE HAS THE ORIGINAL PATENTS IN ELECTRONIC VOTING MACHINES. SHE HAS NEW PATENT APPLICATIONS IN FORMAT VARYING, MULTIPROCESSING, AND ELECTRONIC VOTING. SHE IS THE AUTHOR OF RECENT STUDIES OF THE REGIONAL BELL OPERATING COMPANIES' MARKETING STRATEGIES, INTERNET EQUIPMENT, BIOMETRICS, A STUDY OF INTERNET EQUIPMENT, WORLDWIDE TELECOMMUNICATIONS EQUIPMENT, TOP TEN TELECOMMUNICATIONS, DIGITAL LOOP CARRIER, WEB HOSTING, WEB SERVICES, AND APPLICATION INTEGRATION MARKETS. MS. EUSTIS IS A GRADUATE OF BARNARD COLLEGE.

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