

**BIO SUMMARY:**

**Stewart W. Wilson – Is currently the Director of Laser Technology for Palomar Medical Technologies and is responsible for all semiconductor based light emitting device development for both the professional systems as well as for the consumer products. Has expertise in semiconductor light emitting device product design and development suitable low cost manufacturing methodologies. Has over 19 years experience in semiconductor and optoelectronic devices and over 14 industrial years experience in high optical power semiconductor lasers, LED, SLED, SOA and other related optoelectronic components. Has successfully introduced over 10 products to the market, Was a key team member that successfully obtained OTC FDA clearance for a home use light based device for two consumer products, Has successfully setup and implemented optoelectronic component manufacturing for more than five companies, Has co-founded one company that manufactures high power laser diodes, Has authored or coauthored over 19 technical publications, has obtained 6 patents and several in consumer products pending, has been a co-recipient of the prestigious R&D100 award in 1999 for a semiconductor optical modulator switch (OMS). Received both BSEE and MSEE from the University of Maryland, College Park.**

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**WORK EXPERIENCE:**

**Nov 2003 – Present**

***Director of Laser Technology – Palomar Medical Technology***

Currently Responsible for semiconductor light based technologies for all programs and products.

Major Accomplishments:

Successfully designed and setup low to mid volume manufacturing capability to support the manufacture of semiconductor light based products for both the consumer and professional markets.

Successfully developed low cost diode laser design for consumer based products. Successfully developed low cost LED design for consumer product. Demonstrated state of the art novel designs for consumer products. Successfully led the development of new non-standard lasing wavelengths for high power diode applications. Key team member for successfully obtaining FDA OTC approval on (2) photocosmetic home use products.

**Sept 2001 – Nov 2003**

***Director of Optoelectronic Manufacturing & Test – Covega Corp (Formerly Quantum Photonics)***

Jan 2003 – Nov 2003 {Company recently purchased by THORLABS in 2009}

Major Accomplishments:

Merger team member tasked to merge two companies (Quantum Photonics Corp and Codeon Corp). Specifically tasked to convert prototype jumble flow layout into lean manufacturing with set space constraints. Successfully designed new layout and implemented into production. Continued responsibility for InP component manufacturing as well as new product development of low cost solutions for optoelectronic manufacturing.

***Manager of Optoelectronics Manufacturing and Test, - Quantum Photonics Inc, Jessup, MD***

Sept 2001 – Jan 2003

Major Accomplishments:

Successfully designed and set up optoelectronic manufacturing facility capable of producing SOA and FPL based products. Managed both manufacturing and engineering organizations as well as controlling \$10M budget, Reliability & Qualification test plan. Directly involved in selecting appropriate equipment suitable for OEP manufacturing and process development at each step in the process. Accomplishments and milestones thus far include setting up lean-manufacturing production lines capable of CoS, OSA, Package Assembly, laser welding of optical components and on time delivery of first production prototypes of SOA and FPL packaged devices. Successful in meeting Telcordia GR468 qualification of SOA product. Filed for two patents and coauthored four technical publications.

**May 2000 – Sept 2001**

***Manager of Optoelectronics Manufacturing, Company Co-Founder – Lasertel Inc, Tucson, AZ***

Major Accomplishments:

Designed and developed photonic module for laser printing application. Successfully setup and implemented design into mid-volume manufacturing. Managed \$5M budget operating budget for optoelectronic design and manufacturing organization. Lean-manufacturing production lines and delivering first productions part within six months from start of company with the 2<sup>nd</sup> line turned on 6 months later, staffing company to more than 50 people in this time period as well.

Technical achievements include the development of highly manufacturable individually addressable and fiber coupled array package and process capable of delivering over 1.6W CW optical power per each

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emitter at over 55% wallplug efficiency and 1.3 W/A slope from 55um emitters. Standardized Optoelectronic packaging using a building-block approach leading to cross-product integration capability.

**1/99 – May 2000**

**Manager of Optoelectronics Packaging** - Opto Power Corporation, Tucson, AZ

Major Accomplishments:

Designed, Developed and production process and layout for 915nm & 975nm High Power Multimode Pumps for next generation amplifiers suitable for telecom market, including equipment procurement and setup for optoelectronics packaging manufacturing pilot line. Investigation and development of New and innovative materials for reliable high power laser diode packaging. Responsible for Bellcore/Telecordia qualification, staffing and controlling of \$3M budget.

**6/96 – 1/99**

**Member of Technical Staff** - Opto Power Corporation, Tucson, AZ

Major Accomplishments:

Design, Development and product release of OptoPower's/Spectra Physics high heatload multibar CW packaging technology "Monsoon Product Line" into manufacturing capable of achieving over 140W CW power per bar in 0.4mm pitch sizes and NxN stack configurable. Design, Development and Product release of OptoPower's/Spectra Physics mid to low heatload multibar QCW packaging technology "Typhoon Product Line" into manufacturing, capable of achieving over 1500W peak power at 30% DC and 250usec pulse widths. Development of flux-free direct bond solder attachment process suitable for manufacturing.

**9/96 - 6/97**

**Senior Lasers and Electro-Optics Engineer**- Allied Signal, Kansas City, MO

Major Accomplishments:

Design and development of optical hydrogen sensor, including the manufacturing and packaging layout. Design and development of a high power Optical Modulator Switch (OMS) and a co-collaboration for the manufacturing between Allied Signal and University of Maryland for a project funded by Lawrence Livermore national lab which led to an R&D 100 award in 1999.

**5/95 - 8/96**

**Optical Systems Design Engineer**-Naval Undersea Warfare Center, Newport, RI

Major Accomplishments:

Design and development of Bi-directional underwater fiber-optic data telemetry SONET/SDH based systems having both electronic and fiber optic backbones capable of X&Y Cardiod Circuit for Multimode hydrophone Arrays

**1/92 - 5/95**

**Research Graduate Assistant**-Photonics Switching Laboratory, Dept. of EE UMCP

Major Accomplishments:

Development of Alternative cost effective and efficient methods/techniques for opto-electronic packaging and fiber-optic coupling. Achieved 20% laser to fiber coupling efficiency using a monolithic passive alignment chip structure and butt-coupling of the fiber to the laser.

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**1/90 - 1/92**

**Undergraduate Lab Assistant** - High Energy Laser Laboratory, Dept. of EE UMCP

Major Accomplishments:

Development of optical amplifiers used for excimer dye high-energy laser systems capable of delivering short-wavelength(193nm), femtosecond pulse widths. Development of fluid control system for replenishing the dye of several optical amplifiers. Development of Thyatron reconditioning system for grounded-grid thyatrons used in the laser system.

**AWARDS & ACHEIVEMENTS:**

**2009/June : FDA OTC Clearance of a light based device for Periorbital Wrinkles**  
**2006/Dec : FDA OTC Clearane of a light based consumer device for Hair Removal**  
**1999/Sep : R&D 100 Award, "OPTICAL MODULATOR SWITCH (OMS)"**

**PUBLICATIONS& PRESENTAIONS:**

Co/author of over 19 reviewed optoelectronic-related articles.

**PATENT(S):**

Over 6 patent applications/awards and several pending

**EDUCATION:**

**UNIVERSITY OF MARYLAND**  
COLLEGE OF ENGINEERING  
College Park, MD  
**1/92-5/95**

MS Electrical Engineering, Received May 1995  
Major: Electro-Physics / Minor: Microelectronics  
THESIS TOPIC: Passive Alignment of a Semiconductor Laser to an Optical Fiber  
R.A. Advisor : Dr. Mario Dagenais

**9/86 - 12/91**

BS Degree in Electrical Engineering, Received December 1991  
Major: Electrical Engineering / Minor: Mathematics / Emphasis: Economics  
Paid for 80% of school expenses working greater than 30 hours per week

**RELATED COMPUTER SKILLS:**

C, C++, FORTRAN, UNIX, BASIC, SPICE, MATLAB, MATHCAD, MAPLE, ICED , PCB LAYOUT, PC PHOTOLITHOGRAPHIC MASK LAYOUT, MAC, SUN SYSTEM, DEC ALPHA, COSMOS, SOLID WORKS

**Activities:**

IEEE, LEOS and SPIE membership