



## Kamran Mobarhan, Ph.D.

Technical Specialist

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Kamran Mobarhan, Ph.D. assists in preparing and prosecuting patents for clients in the areas of electrical engineering and computer technologies. He has many years of experience working at both academic universities and at high-tech industrial corporations. His experience and technical knowledge includes semiconductor device technologies, nanotechnology, quantum devices, electronics, optoelectronics, telecommunications engineering, industrial manufacturing, test and measurement instrumentations, semiconductor lasers, fiber lasers, and high power industrial laser machining products that are used in industrial cutting and welding of metals.

### Practices

- Patent Prosecution

### Industries

- Electrical & Computer Technologies

### Background and Credentials

Dr. Mobarhan has BS, MS, and Ph.D. degrees in the field of electrical engineering from Northwestern University. His MS specialty is in the area of electronics and optoelectronics. His Ph.D. specialty is in the area of semiconductor device technologies, quantum mechanics, nanotechnology, and telecommunications engineering. While pursuing his graduate studies he was a member of the Center for Quantum Devices (CQD) and he helped set up the scientific laboratories at that center of research and technology excellence. At CQD he established a laboratory for complete manufacturing and characterization of high power laser diodes and telecommunication semiconductor lasers. He developed and perfected a novel technique for packaging of high power aluminum-free laser diodes that made the extended life operation of these lasers possible. After receiving his Ph.D. he worked for two years as a member of the research faculty at the electrical engineering department of the University of Maryland in College Park where he did scientific research in the field of semiconductor and telecommunications engineering.

Prior to joining Marshall, Gerstein & Borun, Dr. Mobarhan worked as a business and technical consultant in Silicon Valley, California. The focus of his consulting business was on facilitating the success of high-tech companies in growing their business by helping them bring to market exciting new commercial products. He helped companies take their technological innovations from scientific concept and research phase all the way to commercial products that gave rise to revenue growth, profit increase, and overall financial success.

Dr. Mobarhan helped start-up technology companies build new industrial manufacturing factories for high-yield and low-cost volume production of their products in such industries as semiconductor manufacturing, fiber optic telecommunications, and electronic instrumentations. He helped these companies with process management and with establishing efficient manufacturing and operational procedures for their factories in order to make volume production of products possible. He analyzed the business operations, process management, and new product introduction practices of these groups and made recommendations for improvements that enhanced customer satisfaction.

Dr. Mobarhan has extensive industrial experience working in the areas of marketing, business development, product line management, new product introduction, technology development, and engineering program management. He has held various technical and business management positions at such companies as Newport, Semiconductor Laser International, New Focus - Bookham, and Quantel where he worked as the Vice President of Marketing and Product Management for the Industrial and Scientific Laser Division.

He is the author of numerous papers, articles, application notes, and conference presentations. He has given many seminars and lectures at various conferences around the world as well as during numerous meetings held at both academic institutions and industrial corporations.

## Education

- Northwestern University (Ph.D.)
  - Electrical Engineering
- Northwestern University (M.S.)
  - Electrical Engineering
- Northwestern University (B.S.)
  - Electrical Engineering

## Publications and Presentations

2007

**"Business Development Activities at Academic Institutions as Related to the Education, Training, and Career Development of the Next Generation of Scientists and Professionals"**

*Proceedings of the Conference on Education and Training in Optics and Photonics (ETOP), Ottawa, Ontario, Canada*

August 2001

**"Aligning Fibers to Devices Demands Precision"**

*WDM Solutions Magazine*

March 2001

**"Process Control Software for a New Generation of Fiberoptic Component Manufacturing Factories"**

*Lightwave Magazine*

March 2001

**Lecture Series on Semiconductor Technologies and Telecommunications Engineering**

*Optical Fiber Communication Conference (OFC), Anaheim, California*

January 2001

**"Automated Machine Tooling Design Considerations for High Volume Optoelectronic Device Manufacturing Systems"**

*Proceedings of the SPIE Photonics West Conference, San Jose, California*

November 2000

**"The Economics of Using Automated Manufacturing Systems for High-Volume Packaging of Fiberoptic Components"**

*Proceedings of the IEEE Lasers & Electro-Optics Society (LEOS) Conference, San Juan, Puerto Rico*

September 2000

**"Assembly and Testing of Planar Waveguide Devices for WDM Applications using Automated Manufacturing Techniques"**

*Fiberoptic Product News Magazine*

August 2000

**"Automated Manufacturing Systems for Economical High-Volume Packaging of Fiberoptic Components"**

*Lightwave Magazine*

July 2000

**Lecture Series on Semiconductor Technologies and Telecommunications Engineering**

*InterOpto Conference, Tokyo, Japan*

June 2000

**"To Manufacture More, Automate"**

*Photonics Spectra Magazine*

May 2000

**Lecture Series on Semiconductor Technologies and Telecommunications Engineering**

*Conference on Lasers and Electro Optics (CLEO), San Francisco, California*

April 2000

**"Specialized Systems Characterize Laser Diodes"**

*Laser Focus World Magazine*

March 2000

**Lecture Series on Semiconductor Technologies and Telecommunications Engineering**

*Optical Fiber Communication Conference (OFC), Baltimore, Maryland*

August 2000

**"Faster Photodiodes Meet Variety of Applications"**

*Laser Focus World Magazine*

February 1, 1994

**"InGaP / InGaAsP / GaAs 0.808  $\mu\text{m}$  separate confinement laser diodes grown by metalorganic chemical vapor deposition"**

*IEEE Photonics Technology Letters, Vol. 6, No. 2, pp. 132-134*

1993

**"Optical, electrical, and structural characterization of GaInAsP / InP layers grown on silicon substrate for 1.35  $\mu$ m laser applications"**

*Material Research Society Symposium Proceedings, Vol. 281*

July 1, 1993

**"GaInAsP / InP 1.35  $\mu$ m double heterostructure laser grown on silicon substrate by metalorganic chemical vapor deposition"**

*Journal of Applied Physics, Vol. 74, No. 1, pp. 743-745*

November 1, 1992

**"High power 0.98  $\mu$ m GaInAs / GaAs / GaInP multiple quantum well laser"**

*Journal of Applied Physics, Vol. 72, No. 9, pp. 4447-4448*

July 30, 1992

**"GaInAs / GaAs / GaInP buried ridge structure single quantum well laser"**

*Electronics Letters, Vol. 28, No. 16, pp.1510-1511*

**"Test and Characterization of Laser Diodes: Determination of Principal Parameters"**

*Newport Corporation Technical Publication – Application Note No. 1*

**"Applications of the Integrating Sphere Optical Power Measurement System in Laser Diode Characterization"**

*Newport Corporation Technical Publication – Application Note No. 2*

**"Laser Diode Packaging Technology: 980 nm EDFA Pump Lasers for Telecommunication Applications"**

*Newport Corporation Technical Publication – Application Note No. 3*

**"Fiber to Waveguide Alignment Algorithm"**

*Newport Corporation Technical Publication – Application Note No. 6*

**"Laser Diode Packaging Technology: Coaxial Module Assembly"**

*Newport Corporation Technical Publication – Application Note No. 7*

**"Automated Assembly of Planar Waveguide Devices"**

*Newport Corporation Technical Publication – Application Note No. 9*