Greg Vander Rhodes

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Profile

Ph.D in Physics with 15 years of hands-on experience in optical, hardware and software engineering. A self-starter with managerial experience who is seeking a position where innovation, technical expertise and problem-solving abilities are valued. An author of numerous technical papers and conference proceedings, a contributor to multiple patents, and a member of OSA, SAS, and SPIE. U.S. citizen with secret security clearance.

Experience

PRINCIPAL ENGINEER, RESEARCH & DEVELOPMENT, THERMO FISHER SCIENTIFIC, 2010-PRESENT
Led software development efforts in a variety of projects, including a modular FTIR spectroscopy system for detection of trace amounts of explosive materials, a gas FTIR system that fused data from many different sources, as well as other classified programs. Designed graphical user interface (GUI) for novel gas FTIR product. Assisted in algorithm development, implementation, optimization using Matlab and C++. Served on the next generation processor selection team, performed platform testing on Embedded Linux and Qt.

DIRECTOR OF SOFTWARE DEVELOPMENT, AHURA SCIENTIFIC, 2004-2010
Built a software development team from the ground up, eventually managing a department of 13 engineers, developers, and testers. Served as the driving force in the early stages of company development to choose application platform, design user interfaces, implement instrument control and high performance analysis algorithms. Brought multiple handheld chemical identification products to market in various industries, including hazmat safety and security, homeland security and transportation screening, and pharmaceutical inspection and counterfeit prevention. Ahura Scientific was acquired by Thermo Fisher Scientific in 2010 for $145 million by Thermo Fisher Scientific.

PRINCIPAL OPTOELECTRONIC PACKAGING MANAGER, AHURA CORPORATION, 2002-2004
Joined company six months after founding. Initial responsibilities included designing and implementing optical systems for Raman amplification, laser sources, fluorescence microscopy and Raman spectroscopy. After a market downturn, worked with management to plan a transition from being a solely hardware provider to an integrated systems provider. Created the software needed to develop a prototype of a handheld chemical identification device, an essential part of procuring board approval and further VC funding.

OPTOELECTRONIC PACKAGING ENGINEER, CORETEK, INC, 1999-2002
Performed optoelectronic packaging and optical engineering for MEMS-based tunable filter and tunable laser products used in the telecommunications industry. CoreTek was acquired by Nortel Networks in 2000 for $1.4 billion.

Education

Boston University — PhD, Physics, 1999. Thesis: **"Near-field scanning optical microscopic studies of guided-wave and photonic bandgap structures"**

Boston University, MS, Physics, 1995

Carnegie Mellon University, BS, Physics, 1993

Skills

Software development: Expert C++ developer. Qt, Windows, Windows CE, Embedded Linux. Platform Builder for Windows CE, Matlab, SQL, web application development, GSM/GPRS/3G wireless technologies, 802.11 (WiFi), limited FPGA experience with Verilog. XML, DOM.

Science and Technology: Vibrational spectroscopy, Raman spectroscopy, FTIR spectroscopy, fiber optics, opto-electronic packaging, hyperspectral imaging, scanned probe microscopy (SPM)

Other: Solidworks, Adobe products (Illustrator, Photoshop, Fireworks), ZEMAX, Mathematica, Unix/Linux systems administration.

Patents

U.S. Patent 8,203,700, issued June 19, 2012, "**Supporting Remote Analysis**" (Greg Vander Rhodes, Kevin J. Knopp, Christopher Brown, Trey Sieger)

U.S. Patent Application No. 12/724,192, Publication No. 2010/0315629 A1 (Published December 16, 2010) **"Optical Scanning"** (Kevin J. Knopp, Robert L. Green, Brendon D. Tower, Christopher D. Brown, Gregory H. Vander Rhodes)

U.S. Patent Application No. 12/062,688, Publication No. 2010/0290042 A1 (Published November 18, 2010) **"Use of Free-Space Coupling between Laser Assembly, Optical Probe Head Assembly, Spectrometer Assembly and/or Other Optical Elements for Portable Optical Applications such as Raman Instruments"** (Daryoosh Vakhshoori, Peili Chen, Masud Azimi, Peidong Wang, Yu Shen, Kevin J. Knopp, Leyun Zhu, Christopher D. Brown, Gregory H. Vander Rhodes)

U.S. Patent Application No. 12/705,070, Publication No. 2010/0191493 A1 (Published July 29, 2010) **"Spectrum Searching Method that uses Non-Chemical Qualities of the Measurement"** (Christopher D. Brown, Gregory H. Vander Rhodes)

U.S. Patent No. 7,698,020 B2 (issued April 13, 2010) **"Methods and Systems for Determining Sample Identify Are Disclosed"** (Christopher D. Brown, Gregory H. Vander Rhodes)

U.S. Patent Application No. 11/088,169, Publication No. 2005/0225758 A1 (Published October 13, 2005) **"Raman Optical Identification Tag"** (Kevin. J. Knopp, Daryoosh Vakhshoori, Gregory Vander Rhodes)

U.S. Patent No. 7,302,136 B2 (issued November 27, 2007) **"Assembly of Optical Components and Method for Assembling Same"** (Daryoosh Vakhshoori, Masud Azimi, Gregory Vander Rhodes)

U.S. Patent No., 7,057,791 (issued Jun 6, 2006) **"Compact Multipass Optical Isolator"** (Masud Azimi, Daryoosh Vakhshoori, Kevin J. Knopp, Gregory Vander Rhodes, Peidong Wang)

Papers

G. H. Vander Rhodes, B. B. Goldberg, M. S. Ünlü, S. T. Chu, and B. E. Little, **"Internal Spatial Modes in Glass Microring Resonators,"** IEEE Journal of Selected Topics in Quantum Electronics, Vol. 6, No. 1, January/February 2000, pp. 46-53

G. H. Vander Rhodes, B. B. Goldberg, M. S. Ünlü, S. T. Chu, W. Pan, T. Kaneko, Y. Kokobun, and B. E. Little,**"Measurement of internal spatial modes and local propagation properties in optical waveguides,"** Applied Physics Letters, Vol. 75, No. 16, October 1999, pp. 2368-2370

K. J. Knopp, D. H. Christensen, G. H. Vander Rhodes, J. M. Pomeroy, B. B. Goldberg, and M. S. Ünlü, **"Spatio-Spectral Mapping of Multimode Vertical-Cavity Surface-Emitting Lasers,"** IEEE Journal of Lightwave Technology, Vol. 17, No. 8, August 1999, pp. 1429-1435

G. H. Vander Rhodes, M. S. Ünlü, B. B. Goldberg, J. M. Pomeroy, and T. F. Krauss, **"Characterisation of Waveguide Microcavities using High-Resolution Transmission Spectroscopy and Near-field Scanning Optical Microscopy,"** IEE Proc. in Optoelectronics, Special Issue on Photonic Crystals, Dec. 1998

G. H. Vander Rhodes, J. M. Pomeroy, M. S. Ünlü, B. B. Goldberg, K. J. Knopp, and D. H. Christensen, **"Pump Intensity Profiling of Vertical-Cavity Surface-Emitting Lasers using Near-field Scanning Optical Microscopy,"** Applied Physics Letters, Vol. 72, No. 15, 13 April 1998, pp. 1811-1813

Other

Member Optical Society of America (OSA), Society for Applied Spectroscopy (SAS), SPIE

Avid glass artist: glass blowing, glass fusing (warm glass)