“Lidar solutions using Vernier-Tuned Distributed Bragg Reflector Lasers”

by

Dr. Dennis Derickson, EE Department Chair, California Polytechnic, San Luis Obispo, CA

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Abstract - Vernier Tuned Distributed Bragg Reflector Lasers (VTDBR) allow for very fast tuning of laser wavelength without moving parts. These lasers are ideally suited for FMCW Lidar applications. This talk will cover the theory of operation for VTDBR lasers and then show how they can be configured for Lidar sensing applications. Example block diagrams and measurement results will be shown.

Dr. Dennis Derickson

Dennis Derickson received his BS, MS and Ph.D. in electrical engineering from South Dakota State University (1981), the University of Wisconsin- Madison (1982) and the University of California – Santa Barbara in 1992. His farming background and youth ham radio hobby heavily influenced his career in engineering. He joined the research and development laboratories of Hewlett Packard (HP) in Santa Rosa, CA in 1982. 1980's project development activities included spectrum analyzer and network analyzer electronic measurement instrumentation. His Ph.D. work (1988-1992) involved design, fabrication and test of single-chip pulsed semiconductor lasers for data communication applications. Dr. Derickson managed multiple project teams at HP for high-speed communication test systems in the 1990s. He moved into the director of product marketing role at a start-up company called Cierra Photonics in Santa Rosa, CA in 2000. After 16 years in industry, he joined the Electrical Engineering Department at California Polytechnic State University in 2005 and has been department chair since 2010. Research activities have focused on biomedical applications of semiconductor lasers and wireless communication systems. His outreach activities have focused on running summer science camps and robotics programs for Jr. High and Sr. High groups. As department chair, he has focused on Industry/Alumni/Partner outreach, entrepreneurship, enabling a project-rich hands-on environment for diverse students, and supporting a strong graduate program.

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