NeoPhotonics Announces Tunable, High Power FMCW Laser and Semiconductor Optical Amplifier for Coherent Lidar in Autonomous Vehicle and Industrial Sensing Applications

September 14, 2021

High Output Power and Narrow Linewidth in the “Eye Safe” 1550nm Window Can Contribute to Enhancing Safety in Autonomous Vehicle Applications

SAN JOSE, Calif.--(BUSINESS WIRE)--Sep. 14, 2021-- NeoPhotonics Corporation (NYSE: NPTN), a leading developer of silicon photonics and advanced hybrid photonic integrated circuit-based lasers, modules and subsystems for bandwidth-intensive, high speed communications networks, today announced a new, tunable high power FMCW (frequency-modulated continuous-wave) laser module and high power semiconductor optical amplifier (SOA) chips. Both components are optimized to enable long range automotive lidar and high resolution industrial sensing applications. The FMCW Laser is C-band tunable and can be directly modulated to provide >21dBm (126mW) fiber coupled power and a narrow linewidth FMCW optical signal. The SOA chip is designed for integration with Photonic Integrated Circuit (PIC) lidar engines and provides >23dBm optical output power.

These new high output power SOAs and FMCW lasers are based on NeoPhotonics photonic integration platform and improve sensitivity and range, which enables automotive lidar systems to “see” considerably farther than 200 meters, allowing for enhanced safety. Both products operate in the 1550 nm band, which is believed to be more “eye safe”, and are currently being sampled to key customers. In addition, tunable FMCW laser sources enable lidars with configurable operating wavelength thus further enhancing the immunity of coherent lidars to external light interference.

Coherent lidar, also called FMCW lidar, uses coherent technology to greatly increase range and sensitivity by measuring the phase of the reflected light instead of relying only on intensity measurements. Coherent technology was pioneered by NeoPhotonics for communications applications and implemented in PICs using NeoPhotonics Indium Phosphide and Silicon Photonics integration platforms. Coherent lidar systems require similar chip-scale manufacturing to reduce costs and enable high volume.

Coherent detection, whether for lidar or Communications applications, uses photonic integrated circuits (PICs) to extract phase and amplitude information from the optical signal. Narrow linewidth and low phase noise lasers are required for precise phase measurements and high optical power is required to compensate for optical loss in the Silicon Photonics optical chips and to provide a sufficient return signal from distant objects for efficient detection. NeoPhotonics narrow linewidth laser and SOA can be used together or separately to optimize the lidar module performance.

“We are excited to apply our high volume photonic integration coherent technology, which we have honed for over a decade, to the adjacent market of lidar and autonomous vehicles,” said Tim Jenks, Chairman and CEO of NeoPhotonics. “The benefits of coherent technology and the physics enabling it mean we can bring the same benefits to customers in these new markets that we have brought to communications customers for many years,” concluded Mr. Jenks.

About NeoPhotonics

NeoPhotonics is a leading developer and manufacturer of lasers and optoelectronic solutions that transmit, receive and switch high-speed digital optical signals for Cloud and hyper-scale data center internet content provider and telecom networks. The Company’s products enable cost-effective, high-speed over distance data transmission and efficient allocation of bandwidth in optical networks. NeoPhotonics maintains headquarters in San Jose, California and ISO 9001:2015 certified engineering and manufacturing facilities in Silicon Valley (USA), Japan and China. For additional information visit www.neophotonics.com.

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This press release includes statements that qualify as forward-looking statements under the Private Securities Litigation Reform Act of 1995, including anticipated performance of NeoPhotonics’ products. Readers are cautioned that these forward-looking statements involve risks and uncertainties and are only predictions based on the company’s current expectations, estimates and projections. The actual company results, product performance, product development, and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of these risks, uncertainties and assumptions. Certain risks and uncertainties that could cause the company’s results to differ materially from those expressed or implied by such forward-looking statements as well as other risks and uncertainties relating to the company’s business, are described more fully in the Company’s Annual Report on Form 10-K for the year ended December 31, 2020, and the Company’s Quarterly Report on Form 10-Q for the three month period ended June 30, 2021, filed with the Securities and Exchange Commission.

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