



Lightwave Logic and Polariton Technologies Achieve World-Record Performance for Ultra-High-Speed Modulators

Breakthrough Results Presented in Peer Reviewed Paper at Prestigious 2021 European Conference on Optical Communications (ECOC)

ENGLEWOOD, Colo. and ZURICH, Sept. 16, 2021 /PRNewswire/ -- Lightwave Logic, Inc. (NASDAQ: LWLG), a technology platform company leveraging its proprietary electro-optic (EO) polymers to transmit data at higher speeds with less power, today announced the achievement of world-record performance for a polymer modulator, as demonstrated in an optical transmission experiment by ETH Zurich, using the Company's proprietary, advanced Perkinamine™ chromophores and Polariton Technologies Ltd.'s newest plasmonic EO modulator, a silicon-photonics-based plasmonic racetrack modulator offering energy-efficient, low-loss, and high-speed modulation in a compact footprint.

The groundbreaking results were presented as a post-deadline paper at the prestigious European Conference on Optical Communications (ECOC) industry exhibition and conference in Bordeaux on September 16, 2021. Polariton's plasmonic modulator transmitted 220 Gbit/s OOK and 408 Gbit/s 8PAM. Transmission of an optical signal was conducted over 100 m using a low-voltage electrical drive of 0.6Vp, an on-chip loss of 1 dB, and an optical 3 dB bandwidth of beyond 110 GHz.

"Our mission at Lightwave Logic is to continually push the frontiers of high-speed performance for electro-optic polymers, shaping the 'impossible' into reality and a new normal for the industry," said Dr. Michael Lebby, Chief Executive Officer of Lightwave Logic. "Through our collaboration with Polariton, we have achieved a new world-record for a racetrack plasmonic modulator device structure. The acceptance of a post-deadline peer reviewed paper at ECOC 2021 provides third party validation of this incredible result.

"We now turn our attention to further optimizing this performance with silicon foundries through both materials and optical device design. With performance achievements such as this, we believe that many companies will quickly see the potential impact that high performance optical switching devices using our polymers can have on their business," concluded Lebby.

Dr. Wolfgang Heni, Co-CTO at Polariton, added: "Polariton has always been dedicated to providing best-in-class devices with the highest-performance. Our goal is to make optical communications faster, the technology more scalable and with it, components and infrastructure more energy-efficient. Our recent demonstration of a plasmonic racetrack modulator once again showcased how the unique combination of plasmonics, silicon photonics, and organic electro-optics offers high-speed and energy-efficient components. We are pleased to have worked with Lightwave Logic, providing us with high-performance and reliable Perkinamine™ chromophores to demonstrate this new world record, further highlighting the benefits of our plasmonic modulator technology. Together, we hope to revolutionize the future of the internet through adoption of next-generation electro-optic polymer platforms."

About Lightwave Logic, Inc.

Lightwave Logic, Inc. (NASDAQ: LWLG) is developing a platform leveraging its proprietary engineered electro-optic (EO) polymers to transmit data at higher speeds with less power. The Company's high-activity and high-stability organic polymers allow Lightwave Logic to create next-generation photonic EO devices, which convert data from electrical signals into optical signals, for applications in data communications and telecommunications markets. For more information, please visit the Company's website at lightwavelogic.com.

About Polariton Technologies Ltd.

Polariton Technologies is on a mission to revolutionize the future of telecommunications by accelerating information transport and bringing reducing its power consumption. Polariton is providing the world's fastest, most compact, and energy-efficient electro-optic devices with applications in telecommunications, datacenters, wireless communications (5G/6G), space, and sensing. Founded in 2019, Polariton is a spin-off of ETH Zurich, taking pride in teamwork, clear and effective communication, and curiosity. Discover more about us at polariton.ch or follow us at LinkedIn @polariton-technologies

Safe Harbor Statement

The information posted in this release may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. You can identify these statements by use of the words "may," "will," "should," "plans," "explores," "expects," "anticipates," "continue," "estimate," "project," "intend," and similar expressions. Forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those projected or anticipated. These risks and uncertainties include, but are not limited to, lack of available funding; general economic and business conditions; competition from third parties; intellectual property rights of third parties; regulatory constraints; changes in technology and methods of marketing; delays in completing various engineering and manufacturing programs; changes in customer order patterns; changes in product mix; success in technological advances and delivering technological innovations; shortages in components; production delays due to performance quality issues with outsourced components; those events and factors described by us in Item 1.A "Risk Factors" in our most recent Form 10-K; other risks to which our Company is subject; other factors beyond the Company's control.

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