
FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month January 2021 No. 1

TOWER SEMICONDUCTOR LTD.

(Translation of registrant's name into English)

**Ramat Gavriel Industrial Park
P.O. Box 619, Migdal Haemek, Israel 2310502**
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F Form 40-F

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes No

**On January 5, 2021, the Registrant Announce Program Creating an
Integrated-Laser-on-Silicon Photonics Foundry Process**

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

TOWER SEMICONDUCTOR LTD.

Date: January 5, 2021

By: /s/ Nati Somekh

Name: Nati Somekh

Title: Corporate Secretary

NEWS ANNOUNCEMENT

FOR IMMEDIATE RELEASE

Tower Semiconductor Announces Program Creating an Integrated-Laser-on-Silicon Photonics Foundry Process

Advanced process to be developed with partial funding from the DARPA LUMOS program addressing high-speed communications

MIGDAL HAEMEK, Israel, January 05, 2021 – Tower Semiconductor (NASDAQ/TASE: TSEM), the leader in high-value analog semiconductor foundry solutions, today announced that it is participating in the LUMOS program, with partial support from DARPA, to create a semiconductor foundry integrated-laser-on-silicon photonics process. This process will combine high performance III-V laser diodes with Tower's PH18 production silicon photonics platform. Multi-project wafer runs (MPW) will be coordinated with the new process, when ready. The initial versions of the PDK (process development kit) are expected in 2021 and will include laser and amplifier blocks.

The benefits of laser integration on silicon include an increase in the density of lasers, a reduction of coupling losses between the laser and the photonics, a reduction in components required and a much-simplified packaging scheme. When combined with Tower's rich suite of passive and active silicon photonics elements -- such as silicon and silicon-nitride wave guides, Mach-Zehnder modulators (MZM), and Ge photodiodes -- the co-integration will enable new products unavailable today from a volume semiconductor or photonics foundry.

The advanced process will be part of DARPA's Lasers for Universal Microscale Optical Systems (LUMOS) program, which aims to bring high-performance lasers to advanced photonics platforms, addressing commercial and defense applications.

For more info on the LUMOS program announcement, please see:

Agency announces performer teams selected for LUMOS program -

"DARPA Looks to Light up Integrated Photonics with Chip-Scale Laser Development"

For more information about Tower Semiconductor's Aerospace and Defense technology solutions, please [click here](#).

For more information about Tower Semiconductor's Silicon Photonics technology platform, please [click here](#).

For more information about Tower Semiconductor's process technology offerings, please [click here](#) or inquire at: info@towersemi.com

This DARPA research was funded, in part, by the U.S. Government. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the official policies, either expressed or implied, of the U.S. Government.

About Tower Semiconductor

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the leader in high-value analog semiconductor foundry solutions, provides technology and manufacturing platforms for integrated circuits (ICs) in growing markets such as consumer, industrial, automotive, mobile, infrastructure, medical and aerospace and defense. Tower Semiconductor's focuses on creating positive and sustainable impact on the world through long term partnerships and its advanced and innovative analog technology offering, comprised of a broad range of customizable process platforms such as SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, non-imaging sensors, integrated power management (BCD and 700V), and MEMS. Tower Semiconductor also provides world-class design enablement for a quick and accurate design cycle as well as Transfer Optimization and development Process Services (TOPS) to IDMs and fabless companies. To provide multi-fab sourcing and extended capacity for its customers, Tower Semiconductor operates two manufacturing facilities in Israel (150mm and 200mm), two in the U.S. (200mm) and three facilities in Japan (two 200mm and one 300mm) through TPSCo. For more information, please visit www.towersemi.com.

Safe Harbor Regarding Forward-Looking Statements

This press release includes forward-looking statements, which are subject to risks and uncertainties. Actual results may vary from those projected or implied by such forward-looking statements. A complete discussion of risks and uncertainties that may affect the accuracy of forward-looking statements included in this press release or which may otherwise affect Tower's business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F, F-3, F-4 and 6-K, as were filed with the Securities and Exchange Commission (the "SEC") and the Israel Securities Authority. Tower does not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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