FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month March 2018 No. 3

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 March 13, 2018, the Registrant Announces Industry's First Open Foundry SiPho Design Kits with Leading EDA Tool Support

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: March 13, 2018

By: /s/ Nati Somekh

Name: Nati Somekh
Title: Corporate Secretary

TowerJazz Announces Industry's First Open Foundry SiPho Design Kits with Leading EDA Tool Support

Collaboration with Cadence, Synopsys and Lumerical enables platform for design of SiPho ICs for Optical Transceiver Electronics Market

MIGDAL HAEMEK, Israel, March 13, 2018 – TowerJazz, the global specialty foundry leader, today announced the first open Silicon Photonics (SiPho) manufacturing process (PH18MA) offered by a commercial foundry with an industry-leading design platform targeting optical networking and data center interconnect applications. TowerJazz's "open" platform is offered to all SiPho customers unlike other "closed" processes only offered to certain customers or restricted to low-volume prototyping. TowerJazz's SiPho process complements its SiGe BiCMOS processes which are currently qualified in two of its worldwide fabrication facilities, providing its customers with manufacturing assurance and flexibility.

The overall SiPho market is expected to present over 20% CAGR by 2023, according to a MarketsandMarkets report. SiPho holds the potential to become a cost-effective, scalable technology for the production of electro-optical integrated circuits and transceivers for data centers and high-performance computing, telecommunications, military, defense, and aerospace applications. TowerJazz's SiPho process addresses the high-performance requirements of these applications, such as reduction in power consumption, high bandwidth and high data transfer capabilities.

TowerJazz and industry leaders in SiPho electronic design automation (EDA) – Cadence, Synopsys and Lumerical – have collaborated to develop design enablement for this platform. TowerJazz's electronic photonic design automation (EPDA) PDK solution provides an integrated design environment through the Cadence Virtuoso platform, enabling fast time to market. TowerJazz brings specialty foundry experience and decades of electronic design enablement while Cadence provides photonic schematic capture, layout and circuit simulation, Synopsys supplies the PIC layout synthesis capability and Lumerical is the industry leader in photonic simulation.

"Closely coupled to TowerJazz's SiPho process, the widely adopted Cadence Virtuoso custom IC design platform gives customers familiar tools to more easily develop and implement integrated photonics systems. Designers now have access to a bi-directional, integrated design flow spanning from co-simulation with Lumerical to layout generation that is built around a golden electro-optical schematic in the advanced Virtuoso platform," said Glen Clark, Corporate Vice President, Research and Development, Custom IC & PCB Group at Cadence. "With the Virtuoso platform's integration into our packaging and system analysis tools, customers can now access an entire silicon design and analysis environment for electronic and photonic design, enabling more predictable design cycles."

The PDK includes several flavors of components needed for SiPho design such as single-mode silicon waveguides, high speed germanium photodetectors, p-n junction modulators and enablement for edge and grating couplers.

To ensure robust design manufacturability, Synopsys' PhoeniX Software OptoDesigner uses photonic synthesis to map design intent into a design-rule clean circuit layout targeted to the TowerJazz SiPho process. "Designers can use our integrated photonic simulators to optimize their designs and layout to meet their performance requirements and minimize time from concept to tape-out," said Niek Nijenhuis, Global Business Development Manager of PhoeniX Software tools at Synopsys.

"We have worked closely with TowerJazz's industry leading PH18MA process and device experts to provide customers with unmatched simulation capability using Lumerical's photonic integrated circuit simulator, INTERCONNECT," said Dr. James Pond, CTO of Lumerical. "In addition to standalone PIC simulation, the compact model library (CML) we developed for TowerJazz enables the industry's most advanced co-simulation framework for electrical/optical circuits using INTERCONNECT and Spectre AMS Designer, all driven from within the Virtuoso platform."

"We are excited to be at the forefront of the silicon photonics foundry space, offering our customers an industry leading SiPho design enablement platform for the optical transceiver market. By partnering with industry leaders, Cadence, Synopsys and Lumerical, we bring unparalleled capabilities to this marketplace," said Dr. Marco Racanelli, Sr. Vice President and General Manager of RF & High Performance Analog Business Unit, TowerJazz.

For more information on SiPho PDKs for TowerJazz's SiPho process, please contact info@towerjazz.com.

A demo of the TowerJazz SiPho design enablement platform will take place at OFC March 13-15, 2018 at the San Diego Convention Center in both the TowerJazz and Cadence exhibit booths, #1717 and #1607, respectively.

About TowerJazz
Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM) and its subsidiaries operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures next-generation integrated circuits (ICs) in growing markets such as consumer, industrial, automotive, medical and aerospace and defense. TowerJazz's advanced technology is comprised of a broad range of customizable process platforms such as: SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, integrated power management (BCD and 700V), and MEMS. TowerJazz 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 that need to expand capacity. To provide multi-fab sourcing and extended capacity for its customers, TowerJazz 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). For more information, please visit www.towerjazz.com.

Safe Harbor Regarding Forward-Looking Statements

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