
FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month March 2019 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 March 5, 2019, the Registrant Announces Successful Development of
Axbio's In-Vitro Diagnostic Bio-CMOS IC using its Advanced 300mm 65nm RFCMOS Platform

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 5, 2019

By: /s/ Nati Somekh

Name: Nati Somekh

Title: Corporate Secretary

TowerJazz Announces Successful Development of Axbio's In-Vitro Diagnostic Bio-CMOS IC using its Advanced 300mm 65nm RFCMOS Platform

Breakthrough device planned to be in production by mid-2019, offering frontier solution for the medical market

MIGDAL HAEMEK, Israel, and SAN JOSE, California, March 5, 2019 — TowerJazz, the global specialty foundry leader, and Axbio Inc., a silicon valley based high-end development company providing leading edge solutions for the medical market, today announced the release of a microfluidics Bio-CMOS device for molecular in vitro diagnostic (IVD), based on TowerJazz's 65nm RFCMOS platform, following a successful development in its 300mm manufacturing facility in Uozu, Japan. This unique device, planned to be in production by mid-2019, combined with highly innovative automation features and disposable cartridge, offers a frontier solution for the medical market.

This technological breakthrough device enables tests to be handled on premises, in the clinical lab itself, with no need to send blood samples out for results. In addition, minimal blood draw is required for complete diagnostics making it highly efficient, facilitating time and cost savings, while enabling extremely accurate and thorough results in a very short period of time with minimal effort.

Axbio's microfluidic-CMOS platform device and systems are expected to provide leading-edge technologies in many health-related applications, such as molecular diagnostics, drug discovery, liquid biopsy, microbiology, agriculture, and environmental science.

TowerJazz's 65nm RFCMOS platform supports a wide range of CMOS and RF applications with state-of-the-art RF modeling for MOSFETs, inductors and transmission lines, a very large set of metal combination and a full set of RFCMOS elements. RF applications such as WiFi 802.11, Wireless HDMI, and WiGi, that require 65nm mmWave technology, can now utilize modeling capabilities up to 110GHz. The Company's customized process solutions, together with its optimized layout, is answering the extremely unique technological demands of the IVD market by allowing ultra-high density (UHD) of sensing array along with extremely high-resolution capabilities. In addition, this platform is automotive qualified.

"We selected TowerJazz because of their high flexibility and capabilities to adapt their advanced 65nm RFCMOS platform to integrate with our microfluidic technology. TowerJazz's vast manufacturing expertise is enabling us to successfully fulfill the needs of several market sectors combined with increased performance required in next-generation IVD systems. TowerJazz has been our development partner for several years and together we have achieved technology maturity leading to expanded business opportunities," said Dr. Hui Tian, CEO of Axbio Inc.

"Axbio's IP, along with TowerJazz's advanced process, manufacturing capabilities and know-how, enable us to deliver high-end, competitive embedded solutions in multiple markets. Through our partnership with Axbio, we are expanding our RFCMOS presence into the growing IVD systems and medical markets", said Shimon Greenberg, Vice President and General Manager of Mixed-Signal & Power Management Business Unit, TowerJazz.

For more information about TowerJazz's 65nm RFCMOS platform, please visit [here](#).

For more information about TowerJazz's technology offerings, please visit [here](#).

About Axbio Inc:

Axbio is a Silicon Valley startup company with development groups in the US, China and Europe. The company was founded by experts in semiconductor, chip development, nanotechnology, microfluidics, biotechnologies, and bioinformatics with proven record of successfully launching many high volume products. The team develops microfluidics Bio-CMOS platform capable of high-throughput sequencing and molecular diagnostics. Versatility of the platform enables manufacturing a broad range of systems; from low cost handheld devices for point-of-care offices and consumers to fully automated instruments for independent laboratories and hospitals. Axbio provides sequencing and diagnostic systems, as well as disposable biochips and reagents. Typical applications include fast cancer diagnostics, rapid pathogen detection, and drug development where accuracy, speed, and cost of comprehensive tests are of utmost importance. For more information, please visit: www.axbio.co.

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

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 TowerJazz'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 and Jazz's most recent filings on Forms 10-K and 10-Q, as were filed with the SEC, respectively. Tower and Jazz do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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