

TOWER SEMICONDUCTOR LTD

Form 6-K

April 20, 2015

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FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month April 2015 No. 2

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

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On April 20, 2015 TowerJazz and Gpixel Announce the First Backside  
Illuminated Scientific CMOS Image Sensor

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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: April 20, 2015

By: /s/ Nati Somekh  
Name: Nati Somekh  
Title: Corporate  
Secretary

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NEWS ANNOUNCEMENT

FOR IMMEDIATE RELEASE

TowerJazz and Gpixel Announce the First Backside Illuminated Scientific CMOS Image Sensor

GSENSE400-BSI offers extraordinary UV sensitivity and extremely low dark current to address specific requirements for scientific measurement and professional applications

MIGDAL HAEMEK, Israel and CHANGCHUN, China, April 20, 2015 – TowerJazz, the global specialty foundry leader, and Gpixel, Inc., a fast-growing CMOS image sensor (CIS) provider focusing on professional applications, announced today the world's first backside illuminated (BSI) scientific CMOS image sensor, Gpixel's GSENSE400-BSI, manufactured using TowerJazz's TS18IS process. GSENSE400-BSI, with an optimized anti-reflective coating for either UV sensitivity or visible light (VIS) sensitivity, features extremely low dark current of below 0.03 e-/p/s at -50oC. Gpixel's BSI scientific CMOS image sensor is well-suited for spectrometry, biometric, fluorescence, surveillance, industrial inspection, forensic, and astronomy applications.

In a report on the machine vision market published by MarketsandMarkets, the total value of the machine vision market is expected to reach \$9.5 billion by 2020 and is estimated to grow at a CAGR of 12.51% from 2014 to 2020.

Gpixel's GSENSE400-BSI was tested against other leading CMOS- and charge-coupled device (CCD)-based sensors, showing much improved Quantum Efficiency (QE) in UV range and extremely low read noise as compared to any of its competitors. Gpixel's GSENSE400-BSI CMOS sensor is well-suited for professional imaging applications which demand image sensors with high sensitivity, low-noise, and high dynamic range, in particular when sensitivity to the ultraviolet spectrum is desired.

Gpixel's BSI scientific CMOS sensor features very high sensitivity from 270nm – 300nm for its UV-optimized version, and from 300nm – 400nm for its VIS-optimized version. In addition, the scientific grade sensor features a read noise as low as 1.3e-, linear full well charge as high as 91Ke-, and dynamic range of 96dB. With deep cooling at -50oC degrees, the sensor dark current can be reduced to below 0.03 e-/p/s. These combinations make the backside illuminated GSENSE400 suitable for many applications which are still dominated by BSI CCDs, yet offering much higher frame rate and less power consumption.

TowerJazz's advanced and proven CMOS image sensor technology is intended to meet the established growing demand for optical sensors used in consumer, industrial, medical and automotive applications. TowerJazz's lengthy experience in the imaging field, combined with its own technology developed in-house, enables best-in-class customized designs. TowerJazz's skilled experts support the customization of pixels per project and specific customer needs and its superior performance (dark current, low noise and dynamic range) enables a rich offering for various digital imaging applications. BSI is also provided by TowerJazz through subcontracting services.

“We have been working with TowerJazz since the start of Gpixel, because of its unprecedented leadership in CMOS image sensor technology. TowerJazz enables us to design imaging sensors with optimal electrical-optical performance, which is essential for professional applications.” said Dr. Xinyang Wang, Founder & CEO, Gpixel, Inc. “This latest BSI sensor's performance has exceeded my expectation. I believe this is one of the most unique CMOS products currently available in the market and will create very serious competition with many existing BSI CCD sensors.”

“We are very pleased to see the success of Gpixel in the market. We have known Dr. Wang for many years and have full confidence in his ability to grow his company to become a major high end CMOS image sensor supplier,” said Dr. Avi Strum, Vice President and General Manager, CMOS Image Sensor Business Unit, TowerJazz. “Gpixel is unique in the Chinese market as it concentrates on the high end market which fits very well with our strategy.”

#### Availability

The UV-optimized and VIS-optimized GSENSE400-BSI are starting sampling immediately. These two products are planned to be in production in Q3 2015.

Please visit TowerJazz (booth #1044) and Gpixel (booth #1146) at SPIE DSS in Baltimore, Maryland on April 20-24, 2015 to learn more about the companies' CMOS image sensor offerings.

#### About Gpixel, Inc.

Gpixel Inc. is a Chinese company specialized in providing high-end customized and off-the-shelf CMOS image sensor solutions for industrial, medical, and scientific applications. Gpixel's standard off-shelf products include high resolution, fast frame rate sensor series (GMAX), high-end scientific CMOS image sensor series (GSENSE), and line scan imagers (GL series). Gpixel is committed to provide more standard off-shelf products and offer the latest technology to meet the ever-growing demand of the professional imaging market.

#### About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM) and its fully owned U.S. subsidiary Jazz Semiconductor, Inc. operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits, offering a broad range of customizable process technologies including: SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, integrated power management (BCD and 700V), and MEMS. TowerJazz also provides a world-class design enablement platform 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), one in the U.S. (200mm) and three additional facilities in Japan (two 200mm and one 300mm) through TowerJazz Panasonic Semiconductor Co. (TPSCo), established with Panasonic Corporation of which TowerJazz has the majority holding. Through TPSCo, TowerJazz provides leading edge 45nm CMOS, 65nm RF CMOS and 65nm 1.12um pixel technologies, including the most advanced image sensor technologies. For more information, please visit [www.towerjazz.com](http://www.towerjazz.com) and [www.tpsemico.com](http://www.tpsemico.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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