### FORM 6-K

### SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of May 2013 No. 5

### TOWER SEMICONDUCTOR LTD.

(Translation of registrant's name into English)

Ramat Gavriel Industrial Park
P.O. Box 619, Migdal Haemek, Israel 23105
(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 S 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 S

On May 27, 2013, the registrant announces TowerJazz Participates at DAC with Major EDA Vendors to Showcase Latest Tools Combined with its Superior Technology.

## **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: May 27, 2013 By: /s/ Nati Somekh

Name: Nati Somekh Title: Corporate Secretary

TowerJazz Participates at DAC with Major EDA Vendors to Showcase Latest Tools Combined with its Superior Technology

TowerJazz also participates at EDA partner user conferences to provide mutual customers with the most comprehensive and up-to-date design solutions available

MIGDAL HAEMEK, Israel, May 27, 2013 – TowerJazz, the global specialty foundry leader, today announced its participation at the 2013 Design Automation Conference (DAC) being held on June 2-6 in Austin, TX (booth #1736). TowerJazz will host a series of seminars in conjunction with its EDA vendor partners to showcase how these collaborations allow customers clean design flow and higher yield by using mutual tools. For more information on dates and times of exhibitor seminars, please see invitation online http://towerjazz.com/dac.html.

In addition, TowerJazz is participating at its EDA partners' user conferences to provide mutual customers with the latest EDA tools and design capabilities to use with TowerJazz's advanced specialty manufacturing processes. TowerJazz participated at the Cadence User Conference (CDNLive) in the US (Silicon Valley) on March 12-13, 2013, at the Munich, Germany event on May 6-8, 2013, and will join the event in Tel Aviv, Israel on October 14, 2013. TowerJazz participated at the Synopsys User Group (SNUG) conference in the US (Santa Clara, CA) on March 25-27, 2013 and will participate at other SNUG events on July 12, 2013 in Japan and August 22, 2013 in China.

At the CDNLive conferences, TowerJazz is presenting the enablement of Cadence Open Access (OA) support for all of its technology platforms and the full reference design flow for mixed mode simulation on TowerJazz power management platform. At SNUG, TowerJazz is announcing the official release of the TowerJazz iPDK on its standard logic (TS18SL) and power management platform (TS18PM & TS35PM) that supports Synopsys' Custom Designer and Laker (SpringSoft).

Cadence is the Analog EDA tool leader and Synopsys is the biggest EDA company and digital flow leader. Collaboration between TowerJazz and its EDA vendor partners allows mutual customers clean design flow and higher yield by using mutual tools. For instance, noise analysis tools allow customers higher yield as they can analyze the noise in the design phase rather than after manufacture.

"We are constantly investing efforts in further developing our partnerships with the major EDA vendors. These new releases will enable our customers to use the most updated EDA tools along with our industry leading technology. It will also enable customers the choice for their EDA toolset for analog, digital and mixed-signal design flows by adding the support of iPDK in parallel to the Cadence OA PDK," said Ori Galzur, Vice President of the TowerJazz VLSI Design Center.

TowerJazz provides a design enablement platform that complements its sophisticated technology and enables a quick and accurate design cycle. TowerJazz provides design kits, IPs and dedicated design services for its process technologies so its customers succeed with first-time working silicon and fast time-to-market. TowerJazz has deep partnerships with major EDA vendors and IP providers to supply its customers with the most comprehensive and up-to-date design solutions available in the market.

For more information on TowerJazz's participation at DAC, CDNLive or SNUG, please visit the company's website: http://www.towerjazz.com/events.html.

About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), its fully owned U.S. subsidiary Jazz Semiconductor Ltd., and its fully owned Japanese subsidiary TowerJazz Japan, Ltd., 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, RFCMOS, CMOS Image Sensor, Power Management (BCD), and MEMS capabilities. TowerJazz also provides a world-class design enablement platform that enables a quick and accurate design cycle. In addition, TowerJazz provides (TOPS) Technology Optimization and development Process Services to IDMs and fabless companies that need to expand capacity. TowerJazz offers multi-fab sourcing with two manufacturing facilities in Israel, one in the U.S., and one in Japan. 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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