UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16
OF THE SECURITIES EXCHANGE ACT OF 1934

For the month of August 2023 No.3

Commission File Number 0-24790

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 of Form 20-F or Form 40-F.

Form 20-F ☒ Form 40-F ☐

On August 31, 2023, the Registrant and TriEye Announce Delivery of Revolutionary CMOS-based SWIR Sensors for the Automotive ADAS Market

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: August 31, 2023

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

Tower Semiconductor and TriEye Deliver Revolutionary CMOS-based SWIR Sensors for the Automotive ADAS Market

Demonstrating superb performance with a 1.3Mp 7um pixel pitch sensor array with excellent response in the SWIR spectrum

Based on Tower's BSI Germanium photo-diodes on silicon using unique pixel-level electrical connection in wafer stacking process

MIGDAL HAEMEK, Israel, and TEL AVIV, Israel – Aug. 31, 2023 – Tower Semiconductor (NASDAQ/TASE: TSEM), a leader in high-value analog semiconductor foundry solutions, and TriEye, pioneer of the world's first commercial CMOS-based Short-Wave Infrared (SWIR) sensing solutions, today announced the release of a breakthrough SWIR sensor for the automotive ADAS and industrial markets, demonstrating unparalleled performance of a 1.3Mp 7um pixel array with excellent response across the SWIR spectrum. The new sensor utilizes Tower's advanced BSI Germanium photo-diodes on silicon using a unique pixel-level electrical connection in a wafer stacking process allowing a monolithic CMOS based solution for sensing light in wavelength way beyond the capability of silicon. According to Yole Group, a leading market research firm, the short-wave infrared sensor market is expected to grow at 44% CAGR reaching $2.9B dollars by 2028.

TriEye's sensing solution provides a clear view in any visibility conditions, even under very harsh driving conditions including very low light, severe fog, dust, or smoke conditions. While existing SWIR sensors are inherently very expensive and hence cannot be considered for mass markets, TriEye's SWIR CMOS-based solution provides high performance at low cost and can be efficiently deployed in high volume markets such as automotive ADAS. This product profoundly addresses the progressive needs of the automotive market segment towards autonomous driving.

"We have been working closely with TriEye over the past several years on the development of their innovative sensor. As always, it is exciting to see the successful results of this teamwork being realized into its market potential," said Dr. Avi Strum, Senior Vice President and General Manager of Sensors and Displays Business Unit, Tower Semiconductor. "Collaborating with TriEye's pioneering team of experts in the field of SWIR sensing solutions was an exceptionally fruitful process. We are confident that this advanced sensing solution with its market-leading features sets a solid foundation for future developments and will contribute greatly to the infrared imaging market."

"We're excited to reveal that we've selected Tower Semiconductor as our partner for the development and manufacturing of TriEye's revolutionary CMOS-based SWIR sensing solutions," said Mr. Avi Bakal, TriEye CEO and Co-Founder. "As the ADAS market experiences exponential growth, there is a rising demand for advanced sensors capable of delivering high-resolution imaging and reliable 3D sensing in any challenging weather and lighting conditions. Tower's expertise and extensive experience makes them the ideal partner as their innovation strongly aligns with our current initiatives and future business aspirations, paving the way for a game-changing collaboration."

For additional information about Tower's CMOS Image Sensor technology offerings, please visit here.

For more information about TriEye's product and technology, please visit here.

About Tower Semiconductor
Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the leading foundry of high value analog semiconductor 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 focuses on creating a 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 process transfer services including development, transfer, and optimization, to IDMs and fabless companies. To provide multi-fab sourcing and extended capacity for its customers, Tower Semiconductor owns two manufacturing facilities in Israel (150mm and 200mm), two in the U.S. (200mm), two in Japan (200mm and 300mm) which it owns through its 51% holdings in TPSCo, and is sharing a 300mm manufacturing facility being established in Italy by STMicroelectronics. For more information, please visit www.towersemi.com.

About TriEye
TriEye is the pioneer of the world's-first CMOS-based Short-Wave Infrared (SWIR) sensing solutions. Based on advanced academic research, TriEye's breakthrough technology enables HD SWIR imaging and deterministic 3D sensing in all weather and ambient lighting conditions. The company's semiconductor and photonics technology enabled the development of the SEDAR (Spectrum Enhanced Detection And Ranging) platform, which allows perception systems to operate and deliver reliable image data and actionable information, while reducing expenditure up to 100x compared to the existing industry rates. For more information, visit www.TriEye.tech

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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