FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month June 2020 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 ☒

On June 10, 2020, the Registrant and Xperi announced New License for 3D Stacked Image Sensor 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: June 10, 2020

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

www.xperi.com

FOR IMMEDIATE RELEASE

Xperi and Tower Semiconductor Announce New License for 3D Stacked Image Sensor Technology

Invensas direct and hybrid bonding technologies licensed by Tower Semiconductor to further enhance its outstanding pixel performance and significant competitive advantages

New technology license will support manufacturing of time of flight and advanced sensors for consumer electronics, machine vision, autonomous vehicles and smart devices

SAN JOSE, Calif. and MIGDAL HAEMEK, Israel – June 10, 2020 –Xperi Holding Corporation (NASDAQ: XPER) ("Xperi") and Tower Semiconductor (NASDAQ/TASE: TSEM) ("Tower"), a global leader in high-value analog semiconductor foundry solutions, today announced Tower's license of Invensas ZiBond® and DBI® 3D semiconductor interconnect technologies. This technology complements Tower's manufacturing of its state of the art stacked wafer BSI sensor platforms for time of flight (ToF), industrial global shutter and other CMOS image sensors on 300mm and 200mm wafers. In addition, Tower Semiconductor will explore the use of Invensas enabling 3D integration technologies for a broader range of applications, including memories and MEMS devices.

"With our fast portfolio expansion, Xperi's leadership in direct and hybrid bonding technologies enables us to support the rapidly evolving requirements of our customer base as they develop next-generation applications," said Dr. Avi Strum, Senior Vice President and General Manager of the Sensors Business Unit, Tower Semiconductor. "3D stacking architectures and integration are core to our strategy of providing the highest value, proven analog semiconductor solutions, including event-driven and time of flight sensors for mobile, automotive, industrial and high-end photography applications."

With the recently released full design kit for hybrid bonding, Tower's customers can now design their products on two different wafers, an imager wafer and a mixed-signal CMOS wafer, that are then stacked together with electrical connections on a pixel level, from 10um pitch for applications such as Direct ToF (dToF) and event-driven sensors, down to 2.5um and even below for applications such as mobile ToF for face recognition applications. This separation into two wafers allows very high speed circuitry on the CMOS side, with very high sensitivity pixels, due to backside illumination, and extremely low dark current, below 1 electron/sec per square micron at 60 degrees Celsius, on the imager side. Tower's unique platform also allows the use of different Epi thicknesses for near infrared sensitivity enhancement.

"Tower Semiconductor continues to strengthen its position as a leading and trusted analog foundry partner of customers around the world," said Craig Mitchell, President of Invensas, a wholly owned subsidiary of Xperi. "Our ZiBond and DBI technologies support the manufacturing of a wide range of devices. We are excited to partner with Tower Semiconductor to deploy our foundational 3D integration technologies into a range of new sensors, in particular time of flight sensors, which we anticipate will be increasingly utilized in automotive, mobile and industrial applications. This partnership continues the strong momentum Xperi has enjoyed as manufacturers worldwide position themselves to address an evolving range of industry needs."

Industry momentum is building around 3D semiconductors that are smaller, thinner and higher performance to enable a new wave of applications for automotive, industrial, Internet of Things, edge computing and consumer device markets. Invensas has achieved fundamental advances in the semiconductor packaging and interconnect technologies required to create 3D stacked chips that satisfy demanding size and performance requirements. Invensas ZiBond direct bonding technology and DBI hybrid technology are ideal for high-throughput, low cost-of-ownership fabrication processes.

About Xperi

Xperi Holding Corporation (Nasdaq: XPER) and its brands DTS, IMAX Enhanced, HD Radio, Invensas, and TiVo, are dedicated to creating innovative technology solutions that enable extraordinary experiences for people around the world. Xperi's solutions are licensed by hundreds of leading global partners and have shipped in billions of products in areas including premium audio, automotive, broadcast, computational imaging, computer vision, mobile computing and communications, memory, data storage, and 3D semiconductor interconnect and packaging. For more information, please call 408-321-6000 or visit www.xperi.com.

About Tower Semiconductor

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the leader in high-value analog semiconductor foundry 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 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 Transfer Optimization and development Process Services

(TOPS) to IDMs and fabless companies. To provide multi-fab sourcing and extended capacity for its customers, Tower Semiconductor 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) through TPSCo. For more information, please visit: www.towersemi.com

Xperi Media Contact: Laura Maurer | +1 617-945-1915 | xperi@launchsquad.com
Xperi Investor Contact: Geri Weinfeld | +1 818-436-1231 | geri.weinfeld@xperi.com

Tower Semiconductor Company Contact: Orit Shahar | +972-74-7377440 | oritsha@towersemi.com
Tower Semiconductor Investor Relations Contact: Noit Levy | +972-4-604-7066 | noitle@towersemi.com