FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of November 2006 No. 3

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 [X] 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 [X]

On November 2, 2006, Tower Semiconductor announces it Begins Production of UXGA (Two-Mega-Pixel) and VGA Image Sensors for SuperPix of China, attached hereto is a copy of the press release.

This Form 6-K is being incorporated by reference into all effective registration statements filed by us under the Securities Act of 1933.

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: November 2, 2006

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

TOWER SEMICONDUCTOR BEGINS PRODUCTION OF UXGA (TWO-MEGA-PIXEL) AND VGA IMAGE SENSORS FOR SUPERPIX OF CHINA

NEW PARTNERSHIP IS A SIGNIFICANT VENTURE INTO THE CHINESE MARKET

MIGDAL HAEMEK, Israel - November 2, 2006. Tower Semiconductor, Ltd., a pure-play independent specialty wafer foundry (NASDAQ: TSEM; TASE: TSEM), today announced a new partnership with SuperPix, a leading Chinese products company, to begin production of two image sensor products.

Initially, the products will be used in cellular phone and smart phone cameras to be retailed within the Chinese market, with projections to eventually expand sales internationally. The Chinese market is the fastest growing retail customer base for cellular products. The annual market for cellular and smart phone image sensors in China, alone, is projected to exceed 200M units in 2008 and 300M in 2010, with business volume of the image sensors projected to exceed $500M.

"We have been very fortunate to have started working with Tower at such an early stage and we are grateful that Tower went along with SuperPix through the thick and thin," said Dr. Jie Chen, SuperPix chairman of the board. "We needed the foundry support every step of the way, including Tower's superior CIS technology, strong customer support and always on-time delivery. Tower has proven itself as our true partner."

Tower's Advanced Photo Diode (APD) technology used in these CMOS image sensors enables improved optical and electrical performance of ultra-small pixels utilizing deep sub-micron process technologies, thus enabling the manufacturing of small, cost-effective camera module solutions. Manufactured at Tower's Fab2 in 0.18-micron technology, the products utilize Tower's pixel IP and the company's optically optimized multilayer metallization (OptiMuM(TM)), which achieves dramatically better optical sensitivity by reducing stack height from silicon to microlens.

"We are proud that our image sensor technology was selected by SuperPix to implement their advanced products - used for mobile applications in mass production," said Dr. Avi Strum, general manager of CIS and NVM product lines at Tower. "We are further excited about the opportunities in China and other markets that these new products open up for us."

ABOUT TOWER SEMICONDUCTOR LTD.

Tower Semiconductor Ltd. is a pure-play independent wafer foundry established in 1993. The company manufactures integrated circuits with geometries ranging from 1.0 to 0.13 micron; it also provides complementary technical services and design support. In addition to digital CMOS process technology, Tower offers advanced non-volatile memory solutions, mixed-signal and CMOS image-sensor technologies. To provide world-class customer service, the company maintains two manufacturing facilities: Fab 1 has process technologies from 1.0 to 0.35 micron and can produce up to 16,000 150mm wafers per month. Fab 2 features 0.18-micron and below standard and specialized process technologies, and has the current capacity of up to 15,000 200mm wafers per month. Tower's Web site is located at http://www.towersemi.com/.

ABOUT SUPERPIX

SuperPix Micro Technology (Beijing) Co., Ltd., is a professional provider of CMOS image sensors (CIS) and related SOC chips. SPMT's employees include experienced technologists in CMOS image sensor, mixed-signal VLSI design, signal processing. Superpix's core technology includes high-performance pixel and low-power analog circuit technology--SuperPixTM high-performance image signal processing technology--SuperImageTM and low-power wireless communication technology--SuperWirelessTM. Based on Superpix's core technologies, the developed CIS and related CIS-SOC chips are with the features such as low consumption power, large dynamic range, and high picture quality. To learn more about SuperPix please visit the company's web site at: www.superpix.com.cn.

SAFE HARBOR

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 our business is included under the heading "Risk Factors" in our most recent Annual Report on Form 20-F, Forms F-1, F-3 and 6-K, as were filed with the Securities and Exchange Commission and the Israel Securities Authority. We do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

CONTACTS:
Tower Semiconductor USA
Michael Axelrod, +1 408 330 6871
pr@towersemi.com

or

Shelton Group
Melissa Conger, 972-239-5119 ext. 137
mconger@sheltongroup.com