## FOCUS 4



## **Electronics Business for New Frontiers**

Toyota Industries will develop its Electronics Segment into a main business pillar.

In October 1997, Toyota Industries and Sony Corporation established ST Liquid Crystal Display Corp. ("ST-LCD") as a 50-50 joint venture. ST-LCD manufactures low-temperature polysilicon TFT LCD panels. The company benefits from Sony's advanced technologies and Toyota Industries' superior quality control and manufacturing technologies.

Since it began mass production in April 1999, ST-LCD has expanded its production to meet rising market demand. A unique production line that incorporates the Toyota Production System ensures that quality keeps pace with output. ST-LCD is now operating at full capacity, producing small LCD panels for digital still and video cameras. The panels are supplied to a number of customers through Sony.

ST-LCD panels are energy-efficient, and offer high resolution as well as high numerical aperture. They also facilitate the integration of the display device and its driver circuits into a single TFT glass base plate. The resultant cost reduction and miniaturization of the display unit allows the LCD panels to be used in a wide range of applications, including in-car monitors. They are also suitable for use in wide-band mobile phones, where they allow the easy exchange of large volumes of data for video and still images. We expect that demand for low-temperature poly-Si TFT LCD panels will increase further as their application in high-definition displays extends to ever smaller, lighter mobile phones and personal digital assistants. In the fall of 2001, ST-LCD will begin a capital investment program of ¥75 billion to establish a second production line, scheduled to come on stream in June 2002. It will also increase the capacity of its first production line. In total, ST-LCD will increase its monthly capacity from 12,000 to 32,000 base plates (600mm x 720mm).

To help fund this investment, Sony and Toyota Industries will each inject ¥10 billion into ST-LCD, increasing the company's capital to ¥50 billion. Sony, Toyota Industries and ST-LCD regard the poly-Si TFT LCD as a vital device in the field of compact displays, and collaborate to develop and manufacture superior products for further expansion of the business.

Toyota Industries also entered the electronic substrate business through its subsidiary, TIBC Corporation ("TIBC"), a joint venture with Ibiden Co.,



Ltd. ("Ibiden"). TIBC manufactures ball grid array (BGA)-type plastic package substrates and flexible printed circuit (FPC)-type substrates. These substrates are indispensable for personal computers, digital still and video cameras, mobile phones, IC cards and many other devices. Substrates manufactured by TIBC are supplied to a number of chip manufacturers and other high-tech companies worldwide through Ibiden.

The high-tech industry is currently suffering a business slowdown. Through aggressive reduction of manufacturing costs and strengthening of production technologies, however, we aim to reinforce TIBC's corporate strengths so that it will be immune to market fluctuations. Furthermore, the high-tech industry is expected to continue expanding over the medium and long term, and we are confident that TIBC's scope of business will expand accordingly.

In January 2000, TIBC obtained ISO14001 certification, the internationally recognized standard for environmental management. In April 2001, it obtained QS9000 certification for its quality assurance.

Toyota Industries' Semiconductor & Electronics Equipment Division\* develops and manufactures electronic components for automobiles, most notably





BGA-type plastic package substrates and FPC-type substrates made by TIBC are sold to customers worldwide through Ibiden and used for bigb-technology products such as PCs and IC cards.

the DC-DC converter for the Prius, TOYOTA's strategic hybrid car.

We are looking to our electronics business to provide substantial future growth, and intend to allocate the necessary management resources to make this an important and successful business area.

\* The Semiconductor & Electronics Equipment Division was integrated into the Technology Development Center as of July 1, 2001.

Low-temperature polysilicon TFT LCD panels made by ST-LCD are incorporated in products such as digital video/still cameras, personal digital assistants (PDAs) made by Sony and other companies.