

Growing market for Memstech's sensors

BY NICOLE YEONG

“We are in the business of making devices that enhance human sensory systems,” says K Sooriakumar, co-founder and chief executive of MEMS Technology Bhd or Memstech Bhd. That, in a gist, is what the company is all about, yet the simplicity belies the immense potential that MEMS technology carries.

MEMS stands for micro electro-mechanical systems. The technology is widely used in sensory systems employed to give our everyday lives more convenience but which is often unnoticed. Think doors opening on their own; think airbags inflating just moments after a collision.

“Think about the oven used for cooking. If you have to heat it up to a certain temperature, you need a sensor to be able to tell you that. You cannot put your hand in it to tell that it is hot enough,” Sooriakumar explains.

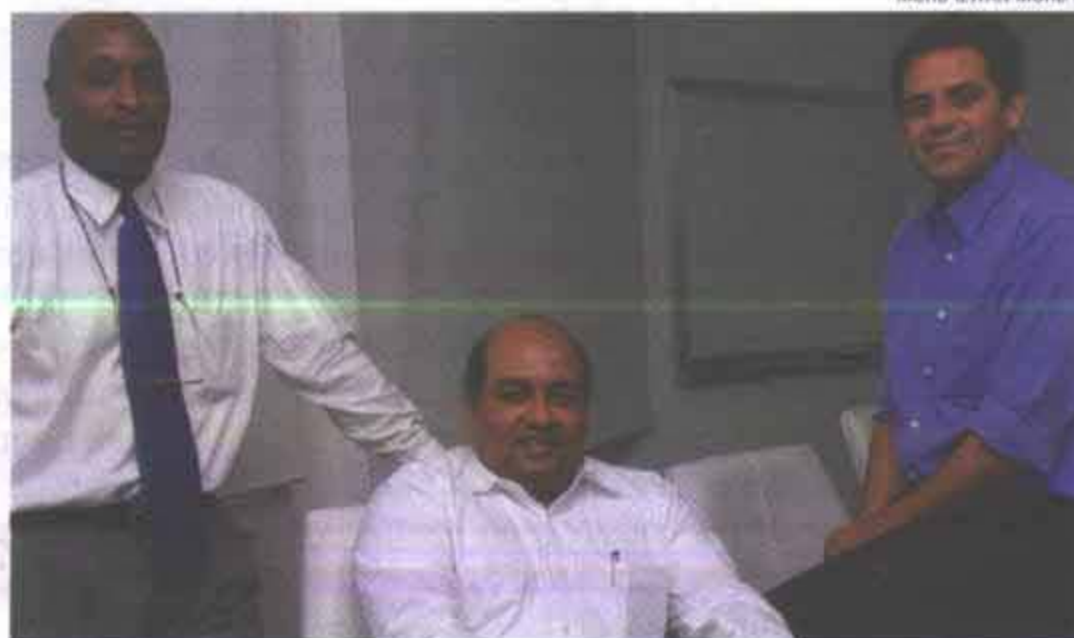
Sensors currently make up a large part of Memstech's business. Products include silicon pressure sensors for automobiles and the consumer industry, water management

systems and sensors for monitoring blood pressure. Accelerometers, which are also sensors, measure acceleration through vibrations. It is also used in the gaming industry for applications such as the joystick.

“These sensors are also put on gloves or suits so they can sense your movements when you put them on. With two people, you can have virtual fighting onscreen,” chief financial officer Anil J N Shukla explains.

The global market for MEMS sensors has been growing steadily. Its value this year is estimated at about US\$7.1 billion, up from last year's US\$5.5 billion and US\$3.1 billion in 1999.

Memstech has also completed the development of a silicon microphone, the application specific integrated circuits (ASICs) for the silicon microphone, and the thermopile array. The silicon microphone, which can be used in mobile phones, PDAs, video cameras and hearing aids, is expected to replace conventional electret microphones. A silicon microphone is cheaper as its assembly process is highly automated compared with the electret microphone. Silicon microphones are also able to filter out noise in the environment and function in extreme temperatures.



(From left) Patmon, Sooriakumar and Anil hope to get five patents a year for Memstech's products and technologies

Thermopile arrays are used in thermal imaging devices such as night-vision cameras. “Presently, these cameras that are used by the military sell for about US\$10,000 but low sensitivity versions are moving into the consumer market. With MEMS technology, we can reduce the price to US\$5,000. We are the first to do this,” Sooriakumar says.

The company is also in the process of developing a MEMS-based memory storage device that will exceed the storage capacity and reduce the cost of most storage devices presently. The initial expected memory capacity is one gigabyte and will ca-

ter to high-memory consumer products such as digital cameras and tablet personal computers.

Memstech aims to have five new patents each year.

To date, it has filed patent applications for eight technologies relating to its inventions, with one granted in March this year. In an interview with *The Edge*, the management of Memstech was hard pressed to name competitors. “It is really hard to find a competitor that makes the range of products that we have. We can probably count them on one hand,” Anil says.

MEMS Technology Bhd

IPO details	
Mesdaq Market	
Issue price: 62 sen	
Par value: 10 sen	
Paid-up capital: RM 32.15 million	
Estimated free float: 26%	
Controlling shareholder(s):	
AKN Equity Ventures Sdn Bhd (39.57%),	
Malaysia Venture Capital Management Bhd (11.25%),	
Ooi Boon Leong (15.74%), Advintech Pte Ltd (7.5%)	
Bumiputera allocation: None	
Oversubscribed by: 151.6 times	
Fair value: NA	
Listing date: Aug 11	

EARNINGS PROJECTIONS

YEAR END	2000	2001	2002	2003	2004
JULY 31	(3-MONTH				(9-MONTH
RM 'MIL	PERIOD ENDED				PERIOD ENDED
	JULY 31)				APRIL 30)
Net profit (loss)	(0.232)	(2.58)	(7.47)	(0.88)	5.86
Net (loss)					
EPS (RM)	(25,778)	(71,528)	0.05	>0.01	0.02

In some areas, Memstech's products and technologies overlap with those of Motorola and Honeywell. But Memstech is in a favourable position as an independent foundry, compared with facilities that are within large corporations, as these are unlikely to produce MEMS products for other com-

CONTINUES NEXT PAGE

FROM PREVIOUS PAGE

panies. Memstech is thus more accessible to customers who may wish to outsource their MEMS-based production or processes.

Asia-based Memstech enjoys significant cost advantage over its counterparts in the US and Europe. Cost is one the major factors why it is relocating part of its operations from Singapore to Malaysia.

Of its two wholly owned subsidiaries in Singapore, Memstech will be shifting SenzPak to Malaysia. SenzPak does the assembly, customised packaging and testing of MEMS-based products. The other subsidiary, SensFab, which designs and fabricates sensors and designs ASICs for original equipment manufacturers, will remain in Singapore.

Its third subsidiary, SenzPak Malaysia, would take over the operations of SenzPak Singapore.

This facility would handle the assembly, calibration and testing of MEMS devices. The term “packaging” is also used for assembly but it is more than simple packaging. Advanced technology is used in the process of encasing and protecting the MEMS sensors, which need to be exposed to specific environments to gauge conditions like temperature and pressure and also be protected from those harsh environments. “The packaging is a critical component of the whole proc-

ess,” says Bryan Keith Patmon, executive director at Memstech.

The group has sales staff in the US and Asia, and sales representatives in the US, Europe and Asia. According to Anil, 100% of Memstech's products are exported. The group specifically targets US and European markets as they generally command a higher selling price. Its major customers are from the automotive, mobile telecommunications, consumer electronics and medical industries.

Memstech currently enjoys pioneer status given by the Malaysian Industrial Development Authority under a list of promoted activities, which confers tax incentives. It has also applied to a grant from Multimedia Development Corp under the Strategic Thrust Area fund. “If we get the grant, we will set up a R&D unit here, either in Cyberjaya or in Penang. The goal is to have a full-fledge R&D centre in Malaysia,” Sooriakumar says. The group has 13 of its 117-member staff doing R&D. Memstech's founding members are Sooriakumar, Patmon, and Srinivas Naidu, who is the sales director based in the US.

Memstech's public offering this week will raise RM49.83 million. Of that, RM29.69 million would be allocated for capital expenditure, RM10.99 million for working capital, RM1.77 million for relocation expenses, RM4.68 for R&D, and RM 2.7 million for listing expenses. ■