EDB SINGAPORE

Exciting world, new discoveries

Few jobs give you the chance of life-long learning like engineering

By Philip Lee

Engineering graduates in Singapore are really a fortunate lot.

Most of them will find jobs waiting for them the moment they enter the job market, thanks to the expansion of Singapore's dynamic electronics sector, which is poised to move further towards cutting edge frontiers.

The electronics sector underpinned Singapore's economic growth last year, contributing an output of $76 billion and employing more than 95,000 workers. New investments featuring advanced technology will open up a slew of job opportunities for 4,500 engineers, technicians and operators a year, at least over the next few years.

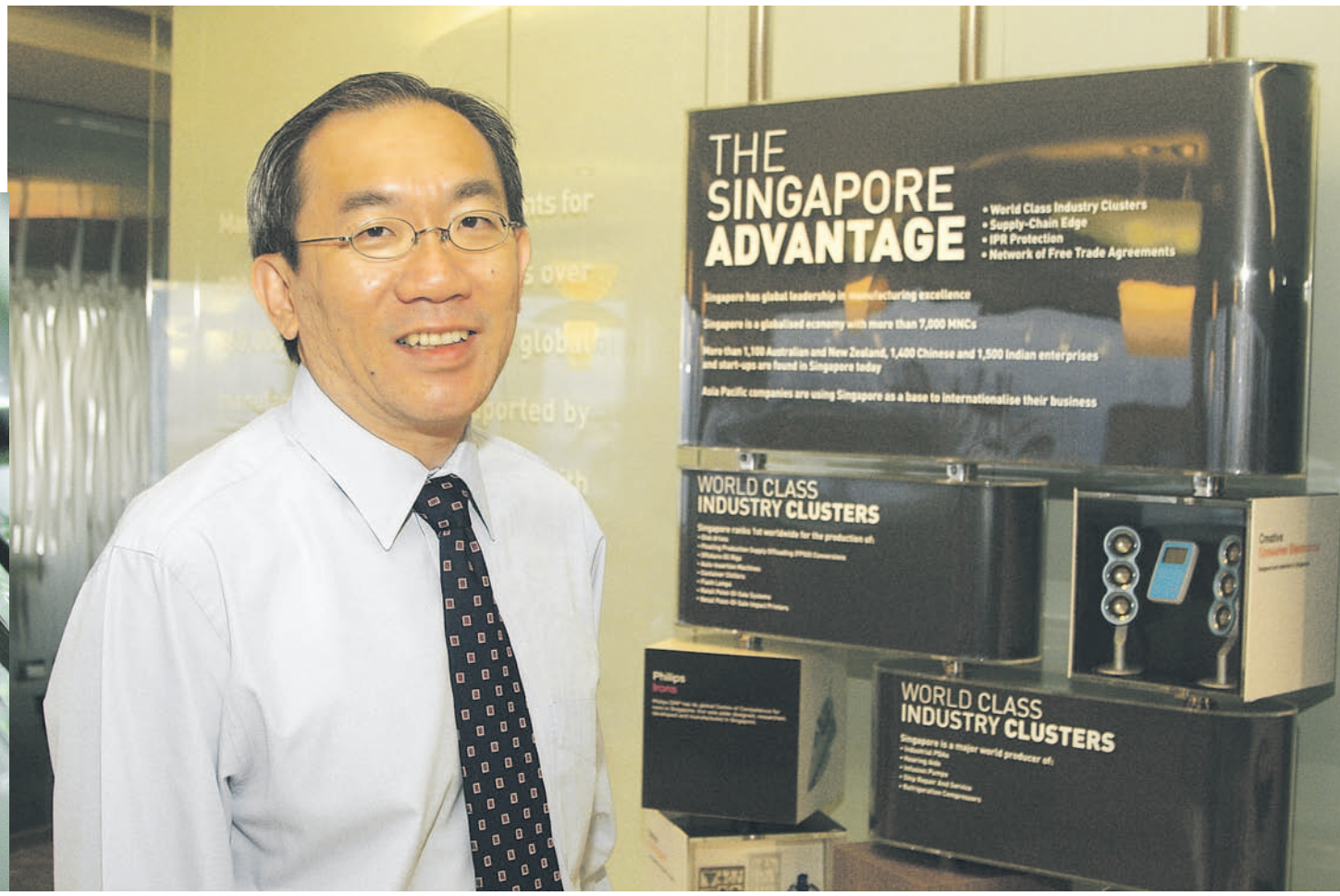
Describing careers in this sector as "exciting", Mr Lim Swee Nian, executive director

{Continued on page 2}

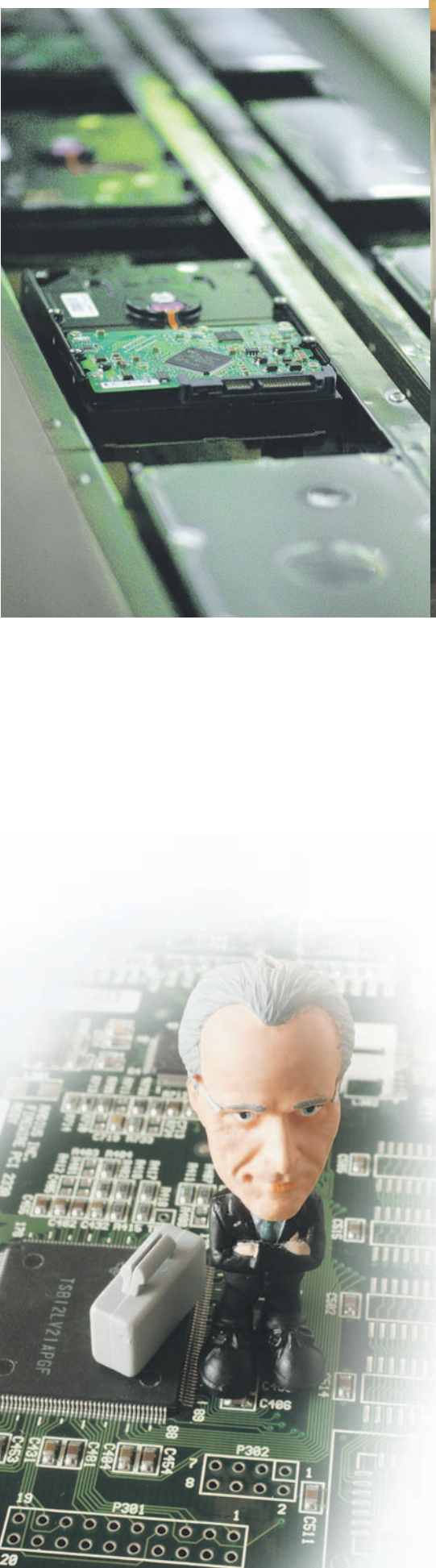
Photo: Chartered

CATS RECRUIT

Careers In The Electronics Industry



Mr Lim Swee Nian, executive director (Electronics Cluster) of the EDB.



{Continued from page 1}

(Electronics Cluster) of the Economic Development Board (EDB), says the wonderful thing about careers in this sector is that the learning process is a life-long one.

"Continuous learning means your skills are always upgraded and expanded, as you move from one set of knowledge and ability to another. This means that your services are always wanted right into the distant future. Your abilities will never be irrelevant.

"And if you work hard and work well, the rewards are very good."

He was also quick to debunk the old belief that electronics is in a "dirty industry".

"This might have been true in the past when this sector was relatively low-tech and people worked in factories cooled by electrical fans. But today, engineers and their support staff work in cooler, cleaner and less noisy environments."

So workers can expect a more comfortable work environment.

He says staff welfare and career advancement will be priority considerations in such careers and employers here are mindful of things like work-life balance, training and even scholarships.

Mr Lim says the world's leading names in electronics have set up operations in Singapore and all observe internationally recognised best-practice codes in the area of human resources.

Engineers aside, graduates from the polytechnics and ITEs are also important as they work as assistant engineers, technicians and operators and are vital for any electronics company to function well, he stresses. They all play a part in manufacturing, research and development (R&D), product and circuit designs, testing and assembly, and so on.

Recognising the importance of engineering talent in Singapore, Mr Lim says that the EDB, for example, will be investing $8 million to train wafer fabrication engineers over three years.

This new programme, co-sponsored by semiconductor companies here, is to encourage undergraduate students in electrical, electronics, mechanical, materials and chemical engineering to specialise in wafer fabrication and work in the semiconductor industry.

The EDB is working with the Nanyang Technological University and the National University of Singapore to encourage undergraduates to

Feature Project Team
Management: Elsie Chua Project Director: Angie Choong Project Manager: Desmond Kan Sales Manager: Leon Wong
For advertising enquiries, please contact CATS Recruit at 6319 6169 or Email: tanska@sph.com.sg

specialise in wafer fabrication engineering in their final years of study.

Students who specialise in this for one year will receive a monthly stipend of $1,080 and for those specialising for two years will get a monthly stipend of $540 over the period of their two-year studies.

Mr Lim says all sponsored students under this programme can expect guaranteed job offers upon graduation.

"In fact, some fabs have already 'booked' students even before they graduate," he says, adding that there are other similar training programmes in areas like integrated circuit design and embedded systems.

On the need for more engineering talent, he says even while existing wafer plants here expand, new players with advanced technologies will set up shop because of Singapore's international reputation as the ideal place for manufacturing, assembly, testing and design. The other reason is the republic's rigorous observation, enforcement and protection of intellectual property rights.

Other than the new investments, there are 14 operating silicon wafer fabs, 20 assembly and test operations and about 40 integrated circuit design centres in Singapore.

Among the newcomers will be Qimonda, which is to set up its first fully-owned 300mm wafer fabrication facility in Singapore. This German company is one of the leading international manufacturers of DRAM (dynamic random access memory) products.

Others include Intel-Micron's 300mm NAND flash wafer fabrication plant, Soitec's 300mm silicon-on-insulator fabrication plant and Lumileds power Light Emitting Diode plant.

The EDB sees these developments as tremendous opportunities for engineers here to work on state-of-the-art technologies.

But Mr Lim also expresses some disappointment over engineering students who opt for non-engineering jobs after they graduate. He explains that because training in this discipline costs huge resources since expensive engineering equipment, laboratories and other teaching tools are involved.

So when these graduates go for other jobs in non-engineering sectors, it means that the electronics sector will not benefit from the skills they were trained in. To the graduates, it could mean that long-term gains are given up for

{Continued on page 20}

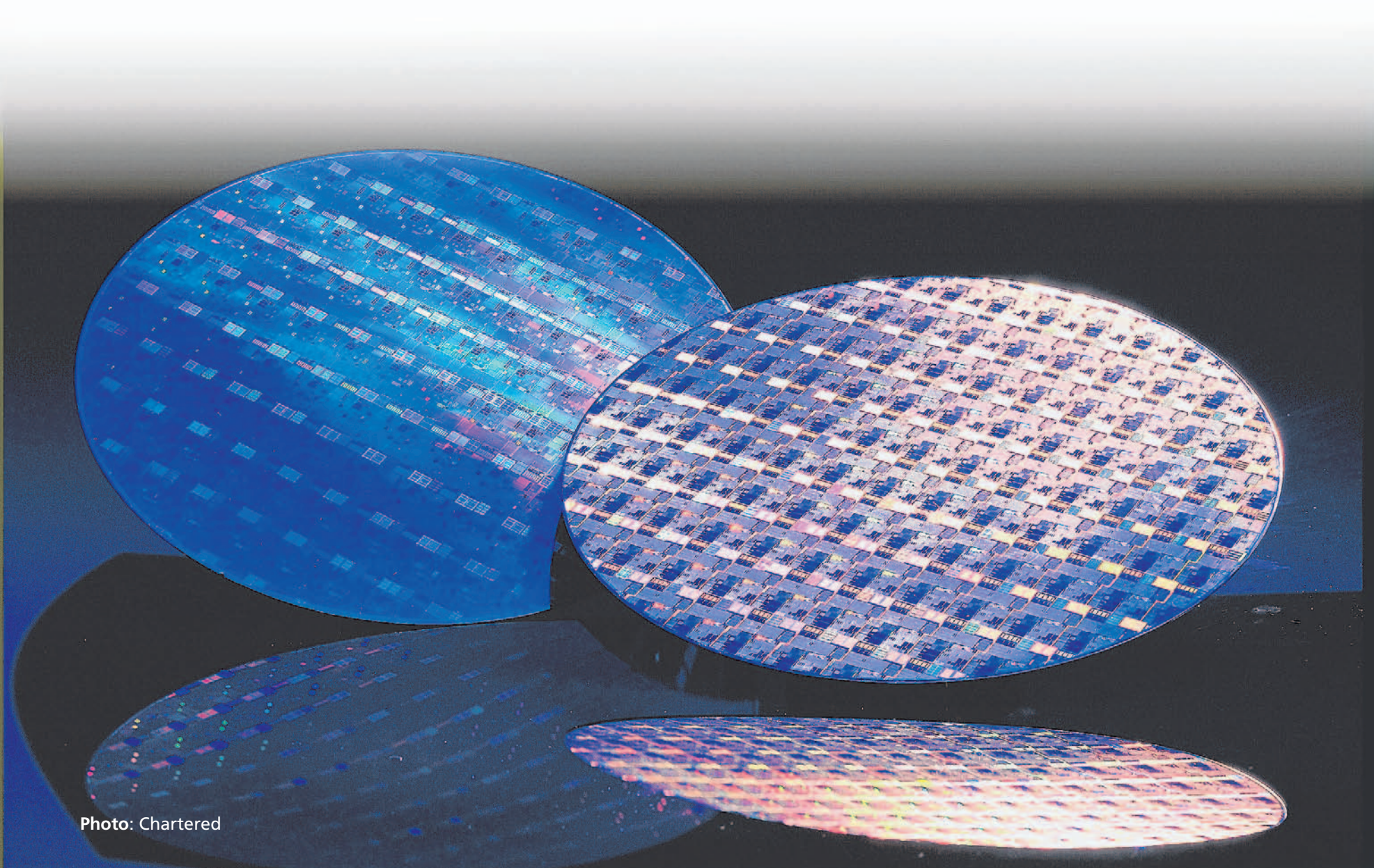
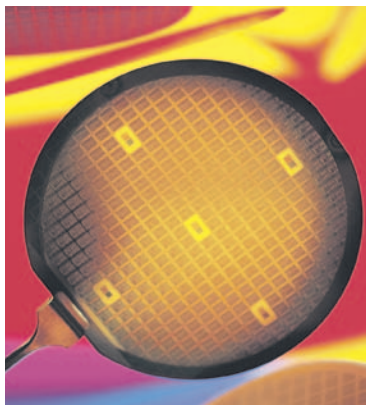


Photo: Chartered

CATS RECRUIT **Careers In The Electronics Industry**

EDB SINGAPORE



{Continued from page 3}

short-term benefits.

"Some of these graduates may get higher entry salaries in other sectors but if they had opted for engineering, their pay would catch up very soon. Their prospects for advancement would be very good too given that the electronics sector is such a dynamic one and that their skills would have deepened with more experience."

Mr Lim says that in the first few years of a new engineer's job in the electronics sector, "the employer is actually paying to train you to be effective".

"These employers know that it is through mistakes that you learn most effectively," he explains.

On the continuing growth of this sector, he says that its new markets, products and processes are only limited by human imagination.

"Take the cellular phone. When it started, it was essentially for phone calls and SMSes. Today, it is also a camera, a PC for e-mails and soon people may be able to watch TV programmes with these phones. Innovations happen all the time in this sector.

"The hard disk drive was initially used to store information technology data and word documents but now it is used in power point, to store songs, videos and so on."

This is why, Mr Lim adds, the work of engineers is very meaningful as their efforts result in all kinds of applications which make life more comfortable, convenient and productive for people.

He elaborates: "Every day you are given the opportunity to delve into the intricacies of technology and even to push the boundaries of physics. And in R&D work for example, there is always the opportunity to invent something new, or to discover. You are constantly challenging the boundaries.

"As engineers, these are exciting and interesting activities. Not many professions provide this kind of opportunity."

SINGAPORE IS 'FABULOUS'

New activities in Singapore

April 2007
Qimonda, a leading supplier of memory chips, announced plans to strengthen its footprint in the Asian market by building its first fully-owned 300mm manufacturing facility in Asia in Singapore. The new Singapore facility adds to its network of fully-owned 300mm manufacturing sites in Dresden (Germany) and Richmond (US). Production is expected to start in 2009. At full capacity, the new plant will have more than 1,500 employees.

November 2006
Intel and Micron announced plans to form a new joint venture in Singapore that will add a fourth fabrication facility to their NAND flash memory manufacturing capability. The Singapore joint venture's facility, anticipated to come online in the second half of 2008, will initially use a 50nm process technology on 300mm wafers.

August 2006
Soitec, the world's leading manufacturer of silicon-on-insulator (SOI) wafers and other engineered substrates, is establishing a 300-mm wafer fabrication plant in Singapore. Designated Fab 3, the facility is Soitec's first fabrication facility in Asia, and is a critical part of the Group's strategic investment plan to expand its worldwide production capacity, enhance its ongoing R&D efforts and forge closer relationships with its customers worldwide.

July 2006
Samsung Electronics and Siltronic are jointly building a 300mm wafer substrate plant in Singapore. This is Singapore's first, thereby extending our semiconductor value chain to include manufacturing of wafer substrate. The plant is Siltronic's first 300mm wafer substrate plant outside of Germany and Samsung's first manufacturing project in Singapore. The new facility will be built in Singapore adjoining Siltronic's existing complex. Production is expected to commence mid-2008 and employ 800 employees by 2010.