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$120m semiconductor research tie-up signed in largest corporate research partnership with academia in S'pore

(Clockwise from top left) Mr KC Ang, senior vice-president and general manager of GlobalFoundries Singapore; Ms Chan Lai Fung, Permanent Secretary (National Research & Development) and A*Star chairman; Deputy Prime Minister Heng Swee Keat; Nanyang Technological University (NTU) President Subra Suresh; NTU's vice-president of research Lam Khin Yong; and Dr Siah Soh Yun, vice-president of technology development at GlobalFoundries Singapore. PHOTO: NTU SINGAPORE

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Hariz Baharudin (mailto:harizbah@sph.com.sg)

SINGAPORE - Technology that will make driverless cars, home sensors and other devices in the Internet of Things (IoT) more durable and cheaper will be researched and developed in Singapore, with a new tie-up between the Government, semiconductor firm GlobalFoundries and the Nanyang Technological University (NTU).

On Monday (Oct 21), GlobalFoundries Singapore, NTU and the National Research Foundation (NRF) announced a $120 million in cash and in kind partnership to conduct research on resistive random access memory (ReRAM) over four years. The three parties did not disclose each individual share for the collaboration, which started last year.

ReRAM, which is a step-up from current methods of storing and managing data, will allow IoT devices to be stored in a smaller physical space, have higher performance in reading and writing of data, be more energy efficient and have lower production costs.

Deputy Prime Minister and Minister for Finance Heng Swee Keat, who is also Chairman of NRF, said the agreement was the largest corporate research partnership with academia to date, and held up the ability for such partnerships to create jobs.

He said: "The Government would like to encourage more companies - not just in semiconductors, but across different industries - to form meaningful partnerships with academia. Such research partnerships help to retain high-value advanced manufacturing as a core pillar of our economy, as we move towards an innovation-driven future.

"This is one way that our investments in research and development can be translated into more good jobs for our people."

Currently a nascent field in technological research, ReRAM builds on the random-access memory (RAM) system that today's automotive systems, portable devices and all other electronics use.

A joint release by GlobalFoundries, NRF and NTU said that devices with ReRAM would have faster read-write speeds and consume less power - qualities useful in the application of IoT devices.

While the three parties did not disclose the breakdown for the agreement, some of the funding for the research will come from the $19 billion Research, Innovation and Enterprise 2020 master plan.

The ReRAM research and development agreement will bring together around 70 researchers from NTU and GlobalFoundries, including at least 16 postgraduate trainees under the Economic Development Board's Industrial Postgraduate Programme, to develop critical research and development skills through industrial attachments.

The university's vice president of research Professor Lam Khin Yong, said: "Singapore's tripartite model of research partnership between private, public and academic sectors plays an important role in ensuring that research done in the lab will have an eventual commercial application, which help drive the nation's Industry 4.0 transformation.

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"It is also very timely for NTU to partner GlobalFoundries Singapore to train new talents in the emerging field of ReRAM and to pioneer this next-generation memory technology for IoT."

Calling the partnership a "a win for Singapore and our people", Mr Heng said that Singapore needs a strong supply of talent to support its research and innovation efforts in advanced manufacturing.

"Your partnership strengthens Singapore's position as an innovation-driven economy, and will allow us to continue creating new and exciting career opportunities for our people," he said.

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