



MEDIA RELEASE

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IMMEDIATE RELEASE

A*STAR'S SIMTECH COLLABORATION AGREEMENTS TO ACCELERATE THE GROWTH AND DEVELOPMENT OF THE MICROFLUIDICS INDUSTRY

Singapore, 2 April 2014: The Singapore Institute of Manufacturing Technology (SIMTech) has inked three collaboration agreements that will play a part in speeding up the growth and development of the microfluidics industry. The agreements were signed today with the following companies:

- InziGn Pte Ltd, a contract manufacturer specialising in precision mould making, plastics injection moulding and assembly of disposable medical devices;
- Austrianova, a Singapore-based high tech, life science and biotech company which will encapsulate living cells in bio-inert polymers using their proprietary "Cell-in-a-Box®"; and
- QuantuMDx Group, a UK-based diagnostic company with operations in Singapore.

The three companies are partnering SIMTech in the transfer, licensing and research collaboration in microfluidics technology respectively. These partnerships will allow for cost effective and novel solutions to be made available to industry, and the development of commercially unavailable microfluidic devices.

Microfluidics is the science of designing, manufacturing, and formulating devices and processes that deal with volumes of fluid in the order of nanolitres or picolitres. The microfluidics devices, which are miniaturised laboratories, have diverse and widespread potential applications in drug delivery, point-of-care diagnostics, clinical diagnostics, pharmaceutical and life science research, and environmental quality

monitoring. The global microfluidics market is witnessing significant growth, due to the rising awareness of microfluidics products and the growing investments in this market. The polymer-based microfluidics device market is valued at an estimated US\$1.08 billion in 2013 and is expected to reach US\$2.7 billion by 2018, at a Compounded Annual Growth Rate of 20.3 percent.¹

SIMTech will transfer a complete set of microfluidics manufacturing technology to InziGn for mass production of microfluidics devices. Through this partnership, InziGn will benefit from an enhancement to its manufacturing capabilities and will be able to expand into mass production of complex diagnostic devices. SIMTech's Microfluidics Foundry – primarily a microfluidics research foundry– will continue to provide design, prototyping and pilot production services to industry and academia to speed up the development of microfluidic products, while InziGn will provide high quality mass production services.

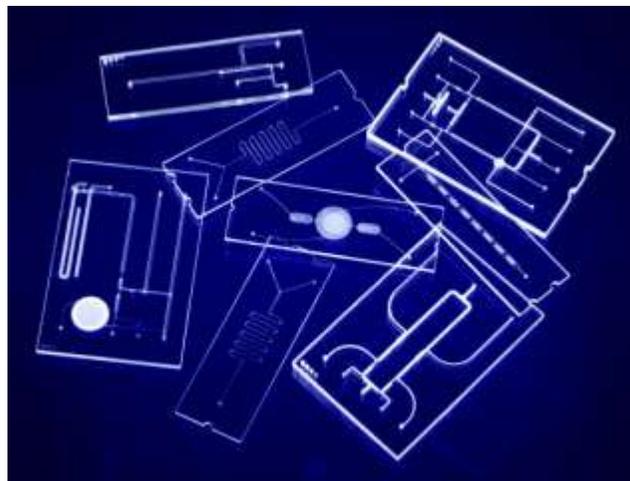
A licence has also been signed between Exploit Technologies Pte Ltd (ETPL), the technology transfer arm of A*STAR, and Austrianova to use SIMTech's microfluidics-based single phase droplet generation technology for living encapsulated cells. The disposable microbead generation device (pictured below) yields high throughput and contamination-free micro-encapsule formation of cells, enzymes or drugs. The microfluidic dispensing head, which is the droplet generator, is made of disposable polymer chip. As it is disposable, sterilisation is not required. Hence, the downtime of the encapsulated cell manufacturing line is reduced.

The research collaboration agreement with QuantuMDx Group is for the development of a portable Point-Of-Care (POC) assay cassette for its Molecular Diagnostics (MDx) platform, suitable for 'in-field' use in resource-limited settings or countries, such as Africa. Such a device is not available commercially at the moment. The single-use disposable cassette is the key part of a

¹Source: Microfluidics Market – Materials, Pharmaceuticals, Drug Delivery Devices, IVD– Global Trends & Forecast to 2018. Published by **MarketsandMarkets**, 17 Dec 2013).

handheld multiplex MDx device for analysing whole blood for DNA mutation testing or for infectious disease testing. The low-cost cassette includes microfluidics handling of samples, on-chip sample preparation, polymerase chain reaction, and detection modules.

Dr Lim Ser Yong, Executive Director, SIMTech, said: “Through various collaborative platforms, the SIMTech Microfluidics Foundry nurtures and grows the microfluidics industry by supporting the business and research community in the development of microfluidic technology and applications. The ongoing efforts aim to pave the way for industry to tap the emerging microfluidics market. Since the launch of the SIMTech Microfluidics Foundry in 2011, it has supported more than 20 companies in the chemicals, diagnostic, life science and precision engineering industry.”



Picture 1: Microfluidics devices, some the size of a credit card. These carry fluids through microscopic channels for diagnostic and drug delivery applications.



Picture 2: The SIMTech microfluidic-based droplet generation technology allows high throughput and contamination-free microencapsule formation of cells, enzymes or drug.

End

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About the Singapore Institute of Manufacturing Technology (SIMTech)

The Singapore Institute of Manufacturing Technology (SIMTech) is a research institute of the Science and Engineering Research Council (SERC) of the Agency for Science, Technology and Research (A*STAR). SIMTech develops high value manufacturing technology and human capital to contribute to the competitiveness of the Singapore industry. It collaborates with multinational and local companies in the precision engineering, electronics, semiconductor, medical technology, aerospace, automotive, marine, logistics and other sectors.

For more information, please visit: www.SIMTech.a-star.edu.sg

About the Agency for Science, Technology and Research

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that fosters world-class scientific research and talent to drive economic growth and transform Singapore into a vibrant knowledge-based and innovation driven economy.

In line with its mission-oriented mandate, A*STAR spearheads research and development in fields that are essential to growing Singapore's manufacturing sector and catalysing new growth industries. A*STAR supports these economic clusters by providing intellectual, human and industrial capital to its partners in industry.

A*STAR oversees 18 biomedical sciences and physical sciences and engineering research entities, located in Biopolis and Fusionopolis, as well as their vicinity. These two R&D hubs house a bustling and diverse community of local and international research scientists and engineers from A*STAR's research entities as well as a growing number of corporate laboratories.

Please visit www.a-star.edu.sg