MEDIA RELEASE

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A*STAR SIMTECH PRINTED ELECTRONICS FOR SMART PACKAGING COLLABORATIVE INDUSTRY PROJECT LAUNCHED TO INCREASE VALUE AND UNLOCK NEW MARKETS FOR INDUSTRY

Printed Electronics is key in enabling smart packaging innovations, a fast growing market for industry.

Singapore—: The Collaborative Industry Project (CIP) using Printed Electronics for Smart Packaging, initiated by A*STAR’s Singapore Institute of Manufacturing Technology (SIMTech), aims to develop capabilities in design, prototyping and manufacturing of smart packaging with printed electronics and to establish a strong supply chain for printed electronics smart packaging in Singapore. Printed electronics technologies in smart packaging applications include printed lighting, printed antennae for Near Field Communication, printed touch and system/functional integration in smart packaging.

Smart Packaging Potential and Applications

The smart packaging market is expected to grow to more than US$ 1.45 billion in the next decade⁷. The key drivers for the rapid demand are an ageing population that has difficulty reading small print instructions, and the need for disposable medical testers and drug delivery devices. More wealthy and demanding consumers, changing lifestyles; tougher legislations for product integrity; and concern for security are other key drivers. The fast growing smart packaging application examples are: dynamic labels that blink an image and reprogrammable decoration on packages; packaging with audio and timer; packaging enabled by RFID for location tracking and status indication of remaining product quantity in a can; and pharmaceutical smart labels using printed temperature sensing labels to measure the integrity of packaged pharmaceuticals during transport and in storage.

Smart Packaging CIP

Despite the vast market potential of smart packaging, the local industry faces difficulties to create sustainable smart packaging products. Not having sufficient knowledge in printed electronics and smart packaging design that works for customers is another major constraint. The lack of experienced integrators that can provide total solution in

smart packaging and insufficient expertise to combine effective marketing strategy to maximise the impact of smart packaging are real challenges.

As such, the CIP on Smart Packaging using Printed Electronics was launched for the packaging and printing industries, industry associations, system or software solution providers and integrators to build capabilities across the supply chain to capture value in smart packaging. To date, nine MNCs and SMEs from the printing and packaging industry and brand owners are participating in this CIP (Refer to Annex A).

“CIP is a platform for companies with common interests to conduct R&D and develop competitive technologies. This CIP, in particular, brings together companies to develop a full spectrum of capabilities, technologies and innovative applications in the emerging printed electronics industry value chain,” said Dr Lim Ser Yong, Executive Director of SIMTech.

Productivity funding is available for participating companies from Employment and Employability Institute (e2i). Mr Gilbert Tan, CEO of e2i, said, "e2i and SIMTech piloted the CIP for professionals from the Printing & Packaging industries. Participants will be equipped with new skills in design and prototyping of integrated system for smart packaging to stay competitive globally. This aligns with our government’s vision to up-skill and deep-skill locals to prepare for growth and future needs in industries. SMEs can also benefit from learning new technologies to offer improved packaging solutions for customers, thus creating new businesses and revenue streams."

**SIMTech Contributions**

The participating companies in this CIP will be working with SIMTech for six months using SIMTech resources and facilities to explore and capture business opportunities in smart packaging without incurring huge upfront investment. From the CIP, participating companies acquire knowledge in application design guideline of printed electronics on smart packaging products; generate ideas and finalise prototype design; develop smart packaging products with printed electronics that work for their customers; learn and optimise the integration of printed electronics in smart packaging, as well as understand cost modelling of printed electronics applications to be able to price the smart packaging product effectively to their customers.

With the knowledge acquired from this CIP and the smart packaging product developed with SIMTech, the participating companies can win new business from existing or new customers through their smart packaging capabilities (For examples, refer to Annex B).

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**Quotes from Some Participating Companies:**

**Brite Koncept Pte Ltd**
“With changing lifestyle and evolving technologies, packaging designers must adopt innovation to propel the packaging industry forward and contribute to the vibrancy of the entire industry.” - Ms Annabelle Tan, Managing Director and Chairman of Singapore Packaging Council

Jabil Singapore

“The Engineering and Technology Services (ETS) Strategic capability laboratory in Singapore participates in the SIMTech CIP to establish a printed electronics ecosystem locally to accelerate the adoption of Smart Packaging.” - Mr Andy Pascal, Principal Staff Engineer, Engineering and Technology Services

KPP Packaging Pte Ltd

“Using Printed Electronics for Smart Packaging allows us to explore new market territory beyond conventional packaging. We need to constantly innovate our product offerings and services to be ahead of the industry we are in. By joining the CIP, we are exposed to various options for new innovation ideas and smart packaging.” - Ms Josephine Low, Director

Starlite Printers (Far East) Pte Ltd

“The CIP gives us the opportunity to explore new direction and applications in our packaging design. We hope to be the first few in the local market to design and produce smart packaging using this approach.” - Ms Serene Ler, General Manager

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About A*STAR’s Singapore Institute of Manufacturing Technology

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.
About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that spearheads economic oriented research to advance scientific discovery and develop innovative technology. Through open innovation, we collaborate with our partners in both the public and private sectors to benefit society.

As a Science and Technology Organisation, A*STAR bridges the gap between academia and industry. Our research creates economic growth and jobs for Singapore, and enhances lives by contributing to societal benefits such as improving outcomes in healthcare, urban living, and sustainability.

We play a key role in nurturing and developing a diversity of talent and leaders in our Agency and Research Institutes, the wider research community and industry. A*STAR oversees 18 biomedical sciences and physical sciences and engineering research entities primarily located in Biopolis and Fusionopolis.

For more information on A*STAR, please visit: www.a-star.edu.sg
Annex A

List of Some Participating Companies of Printed Electronics Smart Packaging CIP

Brite Koncept Pte Ltd

Brite Koncept entered the creative business in March 2005. To-date, we pride ourselves as one of the preferred design firms. With our focus on unique creative designs we are well-positioned to ride the promising market for customisation.

Website: www.britekoncept.com

Jabil

Jabil is a global product solutions company providing comprehensive services to electronics and technology companies in a broad range of industries. Jabil helps customers turn ideas into products with our wide range of strategic design, manufacturing and product management capabilities; allowing customers to think beyond their conventional marketplace and explore new opportunities. Jabil helps bring products to the market faster and more cost effectively by providing intelligent digital supply chain solutions around the world; empowering companies to be the change agents in their industries. Jabil common stock is traded on the New York Stock Exchange under the symbol "JBL."

Website: jabil.com

KPP Packaging Pte Ltd

Set up in 1986 as a packaging company in Singapore.

www.kpppack.com

Starlite Printers Far East Pte Ltd

The company is a printing innovator, offering a rapid and efficient global service network to our customers, embracing the spirit of prudence, reliability and professionalism.

www.starlite.com.sg
Examples of Smart Packaging Prototypes from the CIP

Wine bottle box with Han Dragon design lighted up in segments

Perfume bottle

Moon cake box

Bottled wine box