



# GROWING SMART WEARABLES WITH FLEXIBLE HYBRID ELECTRONICS

SIMTech Collaborative Industry Project initiated for industry to harness business opportunities

The market for smart wearable electronics is expected to grow to US\$52 billion by 2022, up from US\$16 billion in 2015 at a Compound Annual Growth Rate of 16 per cent (MarketsandMarkets, 2017). Flexible Hybrid Electronics (FHE), key enabling technology for wearable electronics is integrating ultra-thin silicon, components using precision engineering handling; printing with conductive and active inks and pasting on stretchable substrates. The applications of smart wearables are in sports and fitness, healthcare and wellness monitoring as well as infotainment. To tap this huge potential, flexible wearable energy source; low power chips; smart textiles embedded with bio-sensors and stretchable/FHE are urgently required key technologies.

To equip the local industry and grow the eco-system to be ready for the explosive growth in smart wearables, SIMTech launched the Collaborative Industry Project (CIP) on Smart Wearable Innovation Programme which is aligned to the national goal of positioning Singapore for the future via innovation. Through this CIP, SIMTech develops capabilities in design, prototyping and manufacturing of printed heater, printed sensor and printed electronic products for Smart Wearable Product Development. Groundwork was initiated last November with Textile and Fashion Federation (TAFF) of Singapore through seminar and roundtable discussion to educate the industry on Wearable Technology.

The CIP comprises three phases. In the Learning phase, 14 workshops are provided to train participating companies in 10 key printed electronics and wearable technologies as well as their applications to create smart product innovation. On completion, the Innovate/Prototyping Product Development phase engages the companies to generate ideas and product design. Over the next 5 months, SIMTech will work with individual participating companies to develop their smart wearable products. Cost analyses, characterisation and reliability of the smart wearable products developed by individual companies are also carried out. In the third phase (Commercialisation), member companies will participate in exhibitions and overseas tradeshows to promote CIP members' capabilities to find new business opportunities in

**“ This CIP programme provides us with exactly what we need. We strongly believe that smart wearable apparel is the future. Through our engagements with SIMTech and TAFF, we learnt how to leverage our core expertise in textiles and introduce game changing technologies into our apparel ”**

Mr Justin Tan, Product Manager, Tex Line Associates Pte Ltd

**“ Lee Yin is excited by the future-state that SIMTech had shared in smart wearables. The advent of smart wearables will revolutionise apparel and textile, and we want to be at this leading edge of innovation. This CIP is an excellent platform for us to learn from the experts, and to help us prepare and create the right products ”**

Mr Clarence Lee, COO, Lee Yin Group

smart wearables. The CIP programme also enables various partnerships to be formed to create a vibrant eco-system for smart wearables in Singapore.

**“ KaHa is delighted to work alongside SIMTech as a strategic partner, to guide and develop the nascent but exciting Smart Wearables and Flexible Hybrid Electronics eco-system in Singapore. CIP is a great platform to engage with partners to testbed ideas and launch new innovative products ”**

Ms Sim Seo Lay, Head of Business Development & Operations, KaHa Pte Ltd

For enquiries, please contact  
**Mr Rick Yeo**, Director of EAC  
Email: [ricky@SIMTech.a-star.edu.sg](mailto:ricky@SIMTech.a-star.edu.sg)  
Web: [www.a-star.edu.sg/SIMTech-EAC](http://www.a-star.edu.sg/SIMTech-EAC)

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