



News Release

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A*STAR Ups Collaborative R&D in Green Technologies to Spur the Growth of Eco-friendly Industries

*To spur the growth in eco-friendly industries, A*STAR's research institute, SIMTech, is spearheading a slew of R&D initiatives in green technologies in collaboration with Nanyang Technological University (NTU) and National University of Singapore (NUS). Three Joint-Labs with NTU to develop technologies relevant to Remanufacturing are set up and Remanufacturing and Green Packaging Initiatives for industry are rolled out.*

SINGAPORE, 16 November 2011: The Singapore Institute of Manufacturing Technology (SIMTech), a research institute of the Agency for Science, Technology and Research (A*STAR), is taking on the challenge of green manufacturing by spurring R&D collaborations on remanufacturing technologies with NTU and NUS as well as launching initiatives to grow eco-friendly industries .

Investing in 10 New Projects in Remanufacturing Technologies

SIMTech is engaging with NUS and NTU on 10 new projects to jointly develop competitive remanufacturing technologies for Singapore's manufacturing companies.

This is the first such instance of significant investment in remanufacturing projects by the Science and Engineering Research Council (SERC) of A*STAR. The projects were awarded by SERC in September 2011.

The projects address critical technologies for remanufacturing of combustion engines and automation equipment in the analysis of defective components, salvaging used components to functional requirements and enabling technologies that will ensure efficient remanufacturing operations– from planning and scheduling, component inventory forecasting to in-process job tracking.

Said Dr Raj Thampuran, Executive Director, SERC of A*STAR, “Remanufacturing is a key market space that is under tapped by our local industry. A*STAR’s investment in R&D of remanufacturing technologies will not only spur the growth of new industries, with firm foundations in these technologies, but also enhance the environment by reducing greenhouse gas emissions. We may well see the growth of more eco-friendly industries in Singapore in the near future.”

Three Joint Labs for Remanufacturing Technologies

SIMTech is also collaborating with NTU to establish three joint research labs to develop remanufacturing-related technologies in refurbishing and reliability assessment. Refurbishing technologies include cleaning, cladding, welding, and surface treatment to recover the functionality of the parts to be remanufactured. Reliability assessment technologies evaluate the remanufacturability of the remanufactured parts and to assure their warranty. In addition to delivering cutting edge technologies, the joint-labs will also serve as platforms to nurture R&D manpower for the remanufacturing industry, transforming into centres of excellence in the respective technical areas to benefit more industry sectors. The initial focus of the joint-labs will be in reliability, precision machining, and 3D additive manufacturing.

Provost of NTU, Professor Freddy Boey, said: “The joint labs aim to come up with innovative manufacturing and industrial processes that are sustainable, efficient and cost-effective – factors which are crucial to the industry of today. Given NTU’s expertise and strengths in engineering and sustainable manufacturing, I am sure our latest collaboration with SIMTech will be a resounding success. This endeavour is also very much in line with NTU’s five-year strategic plan, where Sustainable Earth has been identified as the key research area in our efforts to scale new heights as a great global university.”

Remanufacturing and Green Packaging Initiatives for Eco-friendly Industries

The Remanufacturing Initiative for industry, supported by SPRING Singapore, aims to enhance remanufacturers’ competitiveness, develop remanufacturing related capabilities in local companies and grow remanufacturers in Singapore. The initiative targeting at remanufacturers, precision engineering service providers, and companies interested in venturing into remanufacturing collaborates closely with Caterpillar Reman Singapore to help match and develop relevant capabilities to support its local operation. Ten companies from industry are members of this initiative. The potential value of outsourcing to local companies is estimated to be worth over US\$100 million per year.

On yet another front, to encourage environmentally friendly packaging, SIMTech is launching the Green Packaging Initiative to address the demand and technical challenges faced by goods packaging producers, food and beverage retailers, packaging designers and producers. SIMTech works with MNCs, OEMs and SMEs to share knowledge, develop technical competency, innovate green packaging solutions and implement environmentally-friendly packaging through the use of renewable, recyclable or recycled content materials, the elimination of potentially toxic materials, the use of renewable energy sources and the use of production processes that optimise material, energy and water utilisation. To date, 10 companies are participating in this initiative.

Dr Lim Ser Yong, Executive Director of SIMTech said, “In a time where environmental challenges have taken centre stage, companies are seeking the know-how and the tools to incorporate sustainable manufacturing into existing business operations to reduce cost and environmental impact. With the launch of the Remanufacturing and Green Packaging Initiatives, companies have an added avenue to create value-added products with manufacturing processes that are also more environmentally friendly.”

Inaugural Conference on Sustainable Manufacturing

To create greater industry awareness and participation in sustainable manufacturing, SIMTech is organising the Sustainable Manufacturing Centre Annual Conference 2011 on 16 November 2011 at SIMTech. This conference focuses on industry trends, value-creation and cost reduction through corporate sustainability policies, innovative waste reduction and recycling, and energy efficiency in manufacturing. It brings together thought leaders to share strategies, practices and technologies that make business more environmentally-friendly.

About Remanufacturing

Remanufacturing is the process of creating a like new product from used products. The remanufacturing process involves dismantling, cleaning, salvaging, replacing worn components before re-assembling and testing. A company can potentially save between 60% to 90% in terms of energy, materials, water and air pollutant emissions by remanufacturing an end-of-life product, compared to manufacturing a new product. In addition, the process retains more than 80% of the product's original value. This makes remanufacturing a green and high value-add industry with enormous growth potential. The global remanufacturing market exceeds US\$100 billion (APEX, 2007). With limited natural resources, gaining new capabilities in remanufacturing opens a window of opportunity for high-margin business growth in a rapidly expanding market.

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

The Agency for Science, Technology and Research (A*STAR) is the lead agency for fostering world-class scientific research and talent for a vibrant knowledge-based and innovation-driven Singapore. A*STAR oversees 14 biomedical sciences and physical sciences and engineering research institutes, and six consortia & centres, located in Biopolis and Fusionopolis as well as their immediate vicinity.

A*STAR supports Singapore's key economic clusters by providing intellectual, human and industrial capital to its partners in industry. It also supports extramural research in the universities, and with other local and international partners.

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

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 enhance the competitiveness of the Singapore manufacturing 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 Sustainable Manufacturing Centre at SIMTech

The Sustainable Manufacturing Centre (SMC) is spearheaded by the Singapore Institute of Manufacturing Technology (SIMTech), a research institute of the Agency for Science, Technology and Research (A*STAR).

Supported by 7 government agencies and 8 industry associations, SMC develops and implements innovative technologies that minimise emissions, wastes and toxicity in manufacturing, and strengthen the global competitiveness of Singapore's manufacturing industry.

SMC collaborates with research institutes and industrial partners to promote sustainable manufacturing through R&D, Industry Development and Technology Transfer and Knowledge Transfer

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

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- Mr Paul Tan, **GT Industrial**
- Mr Jeffrey Soon, **Heatec Jietong**
- Mr Raymond Ee, **ISO-Dynamique Microsystems**
- Mr Jameson Low, **Kim Ann Engineering**
- Mr Christopher Leong, **Pmax One Technologies**
- Mr Francis Arul, **SDDA**
- Mr David Loke, **Tru-Marine**
- Mr Alex Choong, **Wilhelm SEA**

List of Green Packaging Initiatives

- Mr David Chia, **Beckhoff Automation**
- Dr Ramadoss Balaji, **BD**
- Mr See Tuck Fay, **ETH Enterprise**
- Mr Michael Loh, **Fagerdala Global Packaging Singapore**
- Ms Susan Chong, **Greenpac Pte Ltd**
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- Ms May Yap, **LHT Holding**
- Mr George Lee, **Racer Technology**
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