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PRESS RELEASE

P&G, A*STAR and NTU set to disrupt skincare industry with Singapore's first wearable sensor that measures skin feel

Showcased to mark 10th Anniversary of the P&G Singapore Innovation Centre

Singapore, 17 April 2024 – To mark the 10th Anniversary of **Procter & Gamble** (NYSE: PG) **Singapore Innovation Centre (SgIC)**, a new innovative wearable skin sensor with the potential to disrupt the skincare industry was featured as the innovation highlight at the event.

Known as “HapSense”, the patent-pending device allows scientists to speed up their analysis of skincare cosmetic products by up to 10 times and yet cost just a fraction of the existing expensive skin-testing panels. Typical skin-test panels consist of skincare product reviewers who represent a defined user demographics depending on the nature of the study. Unlike conventional methods that rely on subjective assessments like consumer surveys, HapSense offers precise, objective and quantifiable measurements of tactile sensations, enabling a more accurate understanding of the human sense of touch.

Made possible through the advanced field of soft electronics, HapSense was developed through almost a decade of research & development collaboration between **P&G SgIC, Nanyang Technological University, Singapore (NTU Singapore)** and the Agency for **Science, Technology and Research (A*STAR)**.

Shaped like a signet ring and worn on the fingertip, the sensor component of HapSense is attached to a smartwatch-like module, creating a portable, lightweight device that could be used for skin analysis even in consumers' homes. As the sensor glides along the skin or any surface, HapSense captures real time data on friction and pressure that is independent of the consumer's perceptions. This multidimensional sensing and tracking with high sensitivity provides objective and deep insights into the effects of a skincare product on the skin. The development of the HapSense device is truly a huge step forward in removing the guesswork from skincare product development, allowing rigorous assessment of the touch sensory experience.

By further harnessing advanced algorithms, scientists can then perform big data analysis using consistent data across the effects of different products over the years, unlocking insights that can accurately guide the formulation of skincare products or personalisation of skincare



regimes for different skin types and demographics. HapSense also has the potential to expand its applications to testing surfaces and products in categories beyond skincare, e.g. fabric care, hair care, baby care, or feminine care.

The development of HapSense was one of many successful outcomes funded by a long-standing partnership between P&G and A*STAR. Since 2013, this collaborative partnership has been governed under a Master Research Collaboration Agreement (MRCA) between P&G, A*STAR, and various Institutes of Higher Learning and Healthcare groups in Singapore. Under the MRCA, the joint efforts have yielded more than 30 impactful publications in areas spanning computer vision, neuroscience, and skin biology, as well as ten patents and two new licensed technologies. Recognising the power of collaboration and the need to further strengthen innovation capabilities, P&G, A*STAR, and their partners have renewed a 5-year MRCA in 2023, amounting to S\$20 million of joint funding for collaborative research projects. #

Since its inception in 2014, the P&G SgIC has been at the forefront of pioneering research and development. SgIC is where the next generation of products are born for some of the world's most loved brands such as Pantene, Olay, SK-II etc. Today, the P&G SgIC is one of Singapore's largest private research facilities, with close to 500 R&D talents from 27 nations who represent a breath-taking range of expertise, from consumer understanding to chemistry, robotics to virtual reality, and microbiology to big data. Thanks to this world-class talent pool and its state-of-the-art facilities, the SgIC has achieved end-to-end capability to deliver breakthrough innovation and award-winning consumer products all across the region.

Minister of State for Trade and Industry Alvin Tan graced the occasion as Guest-of-Honor. [\[Media to quote from Minister Alvin Tan's event speech which will be distributed by MTI via SG Press Centre\]](#)

Opening the celebrations, Standa Vecera, President, P&G Asia Pacific, Middles East and Africa said: "Collaboration and innovation is at the core of our mission to deeply understand and meet consumer needs, propelling us to the forefront of creating irresistibly superior brands. Our strategic partnerships with leading institutions like NTU and A*STAR have helped to form a bedrock essential for harnessing cutting-edge technologies and research to develop meaningful products that delight our consumers globally."

Professor Yeo Yee Chia, Assistant Chief Executive, Innovation & Enterprise Group, A*STAR remarked: "Building upon the success of HapSense, and our renewed research collaboration with P&G, we look forward to co-innovating more impactful technological solutions that enhance economic growth and societal well-being. This exemplifies the power of public-



private partnerships in driving cutting-edge research and developing novel solutions. Through this modality, we aim to anchor more R&D activities in Singapore by multinational enterprises, to position the nation as a global innovation hub and uplift the local Research, Innovation and Enterprise (RIE) ecosystem.”

Professor Louis Phee, Vice President (Innovation and Entrepreneurship), NTU Singapore

said: "Our close partnerships with world-leading industry partners such as P&G and A*STAR enabled us to harness each other’s strengths and expertise, including NTU’s fundamental knowledge of material sciences and precision engineering. This resulted in an innovative product that showcased the significant potential of soft electronics in real-life applications, useful for many industries. Our next steps will be advancing the commercialisation of the technology and establishing manufacturing standards for soft electronics, an emerging field where Singapore has strong potential to lead globally."

At the 10th anniversary celebration of the Singapore Innovation Centre, P&G looks back on the strides made possible through collective effort and shared vision. The unveiling of Singapore's first-of-a-kind technology marks not only a significant milestone in that journey but also paves the way for a future where innovation continues to drive positive change in the consumer goods industry and beyond.

[For more details of the ceremony and HapSense can be found here \[client input: insert link\]](#)

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About Procter & Gamble

P&G serves consumers around the world with one of the strongest portfolios of trusted, quality, leadership brands, including Always®, Ambi Pur®, Ariel®, Bounty®, Charmin®, Crest®, Dawn®, Downy®, Fairy®, Febreze®, Gain®, Gillette®, Head & Shoulders®, Lenor®, Olay®, Oral-B®, Pampers®, Pantene®, SK-II®, Tide®, Vicks®, and Whisper®. The P&G community includes operations in approximately 70 countries worldwide. Please visit <https://www.pg.com> for the latest news and information about P&G and its brands.

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 R&D agency. Through open innovation, we collaborate with our partners in both the public and private sectors to benefit the economy and 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 improving societal outcomes in healthcare, urban living, and sustainability. A*STAR plays a key role in nurturing scientific talent and leaders for the wider



research community and industry. A*STAR’s R&D activities span biomedical sciences to physical sciences and engineering, with research entities primarily located in Biopolis and Fusionopolis. For ongoing news, visit www.a-star.edu.sg.

About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Earth Observatory of Singapore, Nanyang Environment & Water Research Institute and Energy Research Institute @ NTU (ERI@N).

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

Ranked amongst the world’s top universities, the University’s main campus is also frequently listed among the world’s most beautiful. Known for its sustainability, NTU has achieved 100% Green Mark Platinum certification for all its eligible building projects. Apart from its main campus, NTU also has a medical campus in Novena, Singapore’s healthcare district.

For more information, visit www.ntu.edu.sg

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