

PRESS RELEASE

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[FOR IMMEDIATE REPORTING]

EMINENT SCIENTIST RECEIVES HONORARY CITIZEN AWARD FOR ROLE IN ADVANCING SINGAPORE'S R&D INTERESTS

Singapore will be honouring Professor Ulrich Werner Suter, Emeritus Professor of the Swiss Federal Institute of Technology (ETH¹) Zurich, with the Honorary Citizen Award for his valuable contributions to the development of Singapore into a vibrant and globally-recognised R&D hub. President Tony Tan Keng Yam will confer the award to Professor Suter at a ceremony held at the Istana on 14 August 2017.

2 The Honorary Citizen Award is the highest form of recognition from the Singapore Government for outstanding contributions by individuals to the country's growth and development. It is conferred to those who have made a significant impact in the areas of business, science and technology, information communications, education, health, arts and culture, sports, tourism, community services or security. See **Annex A** for more information on the Honorary Citizen Award.

3 Deputy Prime Minister Teo Chee Hean, who is also Chairman of the National Research Foundation (NRF), said: "Professor Suter has contributed his knowledge and time generously over more than a decade to develop Singapore's science and research landscape. Professor Suter has become a close friend of Singapore. I thank Professor Suter for his commitment and valuable contributions."

4 NRF CEO Professor Low Teck Seng, said: "Professor Suter has contributed significantly to the National Research Foundation in various capacities, including as Advisor to NRF, where he provided insights in new emerging R&D areas and global research trends that informed Singapore's research strategy. I congratulate him on being conferred this prestigious award and look forward to our continued partnership to further research excellence in our universities and research institutions."

5 On being conferred the Honorary Citizen Award, Professor Suter said: "I am moved and honoured to receive this prestigious award from Singapore. I am grateful for the opportunity to play a modest role in Singapore's transformation into a vibrant R&D hub with its world-class research infrastructure and talent. I am excited by the many new possibilities that Singapore can pursue with the strong R&D capabilities it has so vigorously built up over the years."

¹ ETH: Eidgenössische Technische Hochschule

About Professor Ulrich Werner Suter

6 Professor Suter is a distinguished academic and leader in the field of materials science. He was the former Vice-President of Research and Head of Department of Materials at ETH Zurich and is currently the President of the Swiss Academy of Engineering. He also serves on the boards of several companies and foundations. See **Annex B** for Professor Suter's biography.

7 Professor Suter has played an instrumental role in laying the foundation for research excellence in Singapore. His longstanding and valuable contributions to Singapore's research landscape span more than a decade.

8 In 2004, Professor Suter served on an international panel commissioned by the Ministry of Education to study the establishment of a research intensive science and technology institution in Singapore. The panel recommended steps to develop Singapore to become a global centre of research excellence in Asia. The panel's recommendations played a pivotal role in seeding the establishment of NRF in 2006. Professor Suter then went on to contribute significantly to NRF in various capacities.

9 Professor Suter took on the role of Co-Chairman of the NRF Scientific Advisory Board (SAB) from 2006 to 2011, where he led a team of multi-disciplinary international experts to formulate strategies for Singapore to improve our competitiveness and standing in the global R&D landscape. He was instrumental in conceptualising the Research Centres of Excellence to spur research in areas of long-term strategic benefit to Singapore. Today, the five Research Centres of Excellence, which have become part of the National University of Singapore and the Nanyang Technological University, are globally recognised for leading research in quantum technology, cancer science, earth science, mechanobiology and environmental life sciences.

10 Under Professor Suter's guidance, the NRF SAB also provided valuable advice on the development of the Campus for Research Excellence and Technological Enterprise (CREATE) to attract highly-regarded R&D institutions from all over the world to conduct research in Singapore. Through CREATE, institutions such as MIT, ETH, Cambridge, Shanghai Jia Tong University, Hebrew University of Jerusalem, etc. have grown a strong institutional presence in Singapore. Professor Suter also led the NRF SAB to evaluate the first group of researchers who were to be awarded the inaugural NRF Research Fellowship, which was set up to attract selected promising young scientists drawn from applicants from all over the world to conduct independent research in Singapore.

11 Professor Suter is currently the Chairman of the NRF Competitive Research Programme (CRP) International Evaluation Panel, a position he has held since 2011. In this role, he has contributed his leadership and experience to a panel of international scientific experts that evaluate the relevance, impact and excellence of use-inspired R&D proposals submitted by our researchers, and recommend whether Singapore should invest in R&D in the areas proposed. The panel also took on an additional role of reviewing the scientific progress of ongoing projects and provided advice to pro-actively shape the outcomes of the projects. The active management

of CRP projects has enabled the seeding of several national-level initiatives in emerging technology areas that could create value for Singapore, such as in synthetic biology, spintronics and photonics. See **Annex C** for a write-up on the CRP and examples of projects which had delivered impactful outcomes.

12 Professor Suter has also been Advisor to NRF since 2012, where he plays a key role in advising NRF on Singapore's R&D strategy. This included the formulation of Singapore's Research, Innovation and Enterprise 2020 Plan, to devise strategies for our R&D investments to be translated into economic growth for Singapore and better lives for Singaporeans. He has also actively persuaded prominent Singaporean scientists based overseas to relocate their research to Singapore and return home under NRF's Returning Singaporean Scientists Scheme.

13 An expert in materials science, Professor Suter also contributes as a member of the Governing Board of the Singapore Centre for 3D Printing, which looks to deepen capabilities in novel printing processes for different manufacturing sectors, such as in aerospace, building and marine industries.

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About the Honorary Citizen Award

The title of Honorary Citizen is a national award conferred by the Singapore Government since 2003 to recognise and acknowledge the contributions of foreigners who have rendered extensive and valuable services to Singapore and its people, or who have made a significant impact in the areas of business, science and technology, information communications, education, health, arts and culture, sports, tourism and community services or security.

The Honorary Citizen Award is the highest form of national recognition for a non-Singaporean and ranks ahead of existing awards – the Public Service Star (Distinguished Friends of Singapore) Award and the Public Service Medal (Friends of Singapore) Award.

The title of Honorary Citizen is conferred for life.

Past Honorary Citizen Award Recipients

2003	<p>Dr. Sydney Brenner (UK) Scientific Advisor to Ministers / Senior Fellow, A*STAR</p> <p>Dr Pasquale Pistorio (Italy) President & Chief Executive, STMicroelectronics</p>
2004	<p>Sir Richard Brook Sykes (UK) Chairman, GlaxoSmith Kline PLC (2000-2002)</p> <p>Mr. Lodewijk Christiaan Van Wachem (Netherlands) Chairman of the Supervisory Board of the Royal Dutch Petroleum Company (Shell) (1992-2002)</p>
2005	<p>Dr Tsutomu Kanai (Japan) Chairman of the Board & Director of Hitachi Ltd</p> <p>Professor Robert A Brown (US) Provost, Massachusetts Institute of Technology (MIT) (1998-2005)</p>
2006	<p>Mr Lee R. Raymond (US) Chairman and CEO, ExxonMobil (1999-2006)</p>
2007	<p>Dr Heinrich von Peirer (German) Chairman, Supervisory Board of Siemens AG</p>
2008	<p>Mr Ratan Tata (India) Chairman, Tata Group</p> <p>Tan Sri Frank Tsao Wen-King (Malaysia) Senior Chairman, IMC Group Chairman, Suntec City Development</p>

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2010	Mr Jeroen van der Veer (Netherlands) Chief Executive, Royal Dutch Shell (2004-2009) Vice-Chairman, Supervisory Board of ING
2011	Professor Edward Holmes (US) Deputy Chairman, Translational and Clinical Science Group, Biomedical Research Council, A*STAR Executive Chairman of the National Medical Research Council, MOH
2012	Lord Ronald Oxburgh (UK) Co-chairman of A*STAR Science & Technology Advisory Committee (2011) Deputy Chairman, Board of the A*STAR Science and Engineering Research Council (SERC)
2014	Mr Hiromasa Yonekura (Japan) Chairman, Sumitomo Chemical Member, International Advisory Council, A*Star (2007-2011)
2015	Professor Sir George Radda (UK) Chairman of Biomedical Research Council (BMRC), Agency for Science, Technology and Research (A*STAR) Emeritus Professor of Molecular Cardiology, University of Oxford Dr Joan Bray Rose (US) Chairperson, PUB External Audit Panel Homer Nowlin Chair in Water Research and Co-Director, Center for Water Sciences and Center for Advancing Microbial Risk Assessment, Department of Fisheries and Wildlife at Michigan State University, USA
2016	Dr Tadataka Yamada (US) Venture Partner, Frazier Healthcare Partners Member, Biomedical Sciences International Advisory Council (BMS IAC)

Biography of Professor Ulrich Werner Suter



Professor Ulrich Werner Suter

Emeritus Professor
Swiss Federal Institute of Technology Zurich

Ulrich Werner Suter, born in Zurich in 1944, earned a PhD in Chemistry from ETH Zurich, was postdoctoral scholar at Stanford and ETH Zurich, and researcher at the IBM Research Center in San Jose, California. In 1981 he became Professor of Chemical Engineering at MIT, a position he held until 1990. He moved to ETH Zurich as Professor of Macromolecular Chemistry and also served as Vice President of Research of this institution. He retired in 2008. Suter was Visiting Professor at universities in the USA, England, Korea, Singapore and France. He received several prizes, served in learned organisations and international editorial boards and was President of the Swiss Academy of Engineering from 2011 to 2017. He was and is member of the boards of scientific journals and is active on international scientific panels. He is a consultant to industry and governments and serves on the boards of several companies and foundations.

About the Competitive Research Programme (CRP)

The Competitive Research Programme (CRP) seeks to foster the formation of multi-disciplinary teams in Singapore to conduct cutting-edge and use-inspired research of relevance to Singapore. Since its inception, 81 CRP projects have been awarded over 17 calls. Some examples of CRP projects that have achieved both world-class science and generated technology know-how, with engagements in joint research projects with industry partnerships are listed below:

- a) “Novel Strategies to Develop Elite and Improve Varieties for Sustainable Rice Production”, led by Prof Prakash Kumar and Dr Naweed Naqvi, from NUS and Temasek Life Sciences Laboratory (TLL) respectively. The project developed several elite rice lines and tester lines with improved agronomic traits such as stress tolerance, increased yield, or disease resistance, etc. These tester lines will be further validated in rice field trials. Some of these traits were incorporated in the commercially available “Temasek Rice”. The research findings, coupled with their collaboration with Philippines-based International Rice Research Institute (IRRI), contributed to global efforts in rice food security with hope for beneficial outcomes to farmers and consumers. These findings can also be potentially translated to other crops such as wheat, barley and millets as well as in general crop-related fields such as fungicide and agricultural chemicals.
- b) “Enabling the Next Wave of Ultra Low Power Nano-systems: Heterogenous Integration of Low Power Electronics with High Performance Photonics”, led by Professor Yoon Soon Fatt, NTU. The project delivered significant advances in the field of micro-electronics. Several major breakthroughs, including achieving the world’s first junctionless III-V n-MOS nanowire transistor, the world’s smallest III-V nMOSFET, the world’s first co-integrated III-V laser and transistor on Ge substrate, had placed Singapore on the world map for breakthrough III-V Semiconductor-on-Silicon technology. The personnel trained in this CRP and the knowledge gathered will benefit the local semiconductor industry, as it starts to adopt the idea of III-V and Silicon co-existing on the same production line. More recently, the team is also in the process of securing relevant intellectual properties of strategic value in its epitaxial lift-off technology.
- c) “Advanced FO Membranes and Membrane Systems for Wastewater Treatment, Water Reuse and Seawater Desalination”, led by Professor Neal Chung, NUS. The project has developed innovative materials (membranes and draw solutes) as well as possible associated systems in the field of Forward Osmosis (FO) Membranes. Various novel FO membranes for oil water separation have been invented and patented. This attracted several companies to develop collaborations with the NUS team. It has also enabled Ngee Ann Polytechnic to develop a FO system integrated with draw solute regeneration based on Prof Chung’s work for concentration of food and pharmaceutical liquids.