

MEDIA FACTSHEET

18 NOVEMBER 2020

- A total of **81 scientists in Singapore** were named in the annual **Clarivate Analytics' Highly Cited Researchers (HCR) 2020 list**.
- This is an increase of more than 15 per cent from 70 scientists last year, and a 250 per cent increase from 23 scientists in 2015.
- The number of highly cited research papers in Singapore has also grown strongly, almost tripling from 188 in 2010 to 513 in 2019. Close to 62 per cent of research projects were published in top-tier journals that are ranked within the world's top 25 per cent globally by Journal Impact Factor™. According to Clarivate, this meant that Singapore's research is mostly published in journals that global scholars recognise as impactful.
- Released on 18 Nov, the HCR lists the world's most influential researchers who are ranked in the top 1 per cent in their field by citations and year, over the last decade. It includes 26 Nobel laureates, including physicist **Professor Sir Konstantin Novoselov**, who is the second Nobel-prize winner (Dr Sydney Brenner being the first) to conduct significant research work in Singapore.
- Singapore's strong showing affirms the outcomes of sustained investments in academic research over the years. The investments have enabled local Institutes of Higher Learning and Research Institutions to build a strong base of scientific capabilities, and establish a strong, internationally recognised research talent base.
- A total of six local institutions were highlighted in the HCR list:
 - Nanyang Technological University, Singapore (NTU)
 - National University of Singapore (NUS)
 - Agency for Science Technology & Research (A*STAR)
 - Singapore Management University (SMU)
 - Singapore University of Technology & Design (SUTD)
 - Ngee Ann Polytechnic (NP)
- **The National Research Foundation (NRF)** supports Singapore's pursuit of scientific excellence through various schemes, which aim to sustain a broad base of capabilities, nurture bright talents and attract top scientific minds to Singapore. Of the 81 scientists:
 - 13 researchers are NRF Investigators (NRFI), an award given to a small number of outstanding Principal Investigators with strong track record or research excellence;
 - 9 are supported by the NRF Fellowship (NRFF) scheme, a globally competitive scheme that seeks to attract early career researchers to conduct independent research in Singapore; and

- 11 are supported by the NRF Competitive Research Programme (CRP) funding scheme, which supports use-inspired research programmes.
 - One scientist in the list is **NRFI recipient Professor Lee Pooi See** from NTU who specialises in materials sciences. She had developed numerous innovations in sensors, and stretchable and flexible electronics, which opened new doors in wearable technologies.
 - Another scientist in the list is **NRFF recipient Associate Professor Thomas Yeo Boon Thye** from NUS. Recognised for his contributions to the field of human brain mapping, Assoc Prof Yeo is also the first person from Asia to receive the 2019 Organisation for Human Brain Mapping (OHBM) Early Career Investigator Award in the 25-year history of the organisation.
 - **Professor Low Teck Seng, Chief Executive Officer of NRF**, said, “Each year, it is heartening to see the increasing number of scientists in Singapore, ranked in the top 1 per cent in their respective fields by citations. This is testament to our nation’s commitment to basic science and research, which drives innovation and enterprise across multiple sectors. Science and research are integral to Singapore’s development as it helps us to stay abreast of scientific breakthroughs that will improve our lives. NRF will continue to support these efforts in basic research and groom next-generation scientists who will push the frontiers of scientific excellence and discovery.”
 - Clarivate Analytics is a global leader in providing trusted information and insights to accelerate the pace of innovation. It uses a methodology that determines the “who’s who” of influential researchers draws on the data and analysis performed by bibliometric experts and data scientists at the Institute for Scientific Information™ at Clarivate. Click [here](#) for the full 2020 Highly Cited Researchers list and executive summary.
 - The factsheets from NTU, NUS, A*STAR, SMU, SUTD, and NP, are enclosed for your reporting use.
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About the National Research Foundation, Prime Minister's Office, Singapore

The National Research Foundation (NRF) is a department within the Prime Minister's Office. The NRF sets the national direction for research, innovation and enterprise (RIE) in Singapore. It seeks to invest in science, technology and engineering, build up the technological capacity of our companies, encourage innovation by industry to exploit new opportunities that drive economic growth, and facilitate public-private partnerships to address national challenges.



NEWS RELEASE

Singapore, 18 November 2020

Largest number of highly cited researchers in Singapore comes from NTU Singapore for third successive year

Thirty-eight scientists from **Nanyang Technological University, Singapore (NTU Singapore)** have been recognised for their research influence – the highest number among institutions in Singapore. This is the third year that NTU has had the greatest number of highly cited researchers amongst institutions in Singapore.

The 38 scientists are among over 6,000 international researchers named in the **Highly Cited Researchers 2020 list by Clarivate Analytics**, a US-based data company. The annual list identifies and celebrates the world's most influential scientists in terms of their impact on the research community, as measured by the rate at which their work has been cited by others over the last decade.

The 2020 list records NTU's highest number of scientists in the ranking since it started seven years ago, after reaching a high of 33 scientists in 2019 and 2018.

NTU Senior Vice President (Research) Prof Lam Khin Yong said: "To address today's wide-ranging and complex issues in areas such as environmental sustainability and future healthcare, we need to tear down old barriers between disciplines and encourage collaboration among faculty from various fields. NTU has been driving this interdisciplinary approach to research by tapping on its Schools, labs, research centres and institutes. This will catalyse the development of breakthrough ideas and technologies out of NTU, and into the world."

The 'Who's Who' of scientists

This year's Highly Cited Researchers list continues to recognise researchers whose citation records place them in the top 1 per cent based on the number of citations for their fields and year across 21 disciplines, such as science, engineering, medicine, and social sciences.

The NTU scientists on this list focus on research in areas covering: clean and renewable energy, artificial intelligence, biomedical engineering, and environmental sciences – all areas that align with the University's commitment to deliver technologies and solutions to shape a better future for all. Of the 38 NTU scientists in the list, 16 are specifically recognised for their interdisciplinary research.

They include materials scientist **Prof Madhavi Srinivasan**, whose research is on energy storage technologies that are crucial for a clean energy landscape, for example using nanoscale materials to enhance energy storage capabilities of batteries; and **Prof Chen Peng**, who addresses biomedical problems at the interface of biology, nanomaterials and engineering. **Prof Liu Bin**'s work tackles the problem of carbon dioxide emissions, such as through upcycling PVC – a non-recyclable material – for carbon capture.

Also on the list are NTU academic leaders **Prof Subodh Mhaisalkar**, Associate Vice President (Strategy and Partnerships) and Executive Director of the Energy Research Institute @ NTU (ERIAN); **Prof Staffan Kjelleberg**, Director of the Singapore Centre for Environmental Life Sciences Engineering and **Prof Lee Pooi See**, Dean of NTU's Graduate College.

Prof Lee, whose research is in the field of nanomaterials for energy and electronics applications, said: "In my research group, we take a multidisciplinary approach that involves materials science and engineering, physics, chemistry and electrical engineering. This has allowed us to develop multidimensional insights, and spur innovative solutions. The Interdisciplinary Graduate Programme pioneered at NTU Graduate College takes the same approach, providing our graduate students with a broad yet tightly interrelated learning experience through research that spans from humanities to science and technology."

Stalwarts on the list since 2014 include **Prof David Lou** in chemistry and materials science, **Prof Huang Guang-Bin** in computing, **Prof Xie Lihua** for electrical and electronic engineering, and **Prof David Wardle** in environmental science.

The full Highly Cited Researchers 2020 list and executive summary can be found online [here](#).

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Note to Editors:

NTU Singapore scientists in the Highly Cited Researchers 2020 list:

| First Name | Last Name | Field of research |
|-----------------|-----------|------------------------------|
| Bu Yuan | Guan | Chemistry |
| Bin | Liu | Chemistry |
| Xiong Wen David | Lou | Chemistry; Materials science |
| Yanli | Zhao | Chemistry |
| Guang-Bin | Huang | Computer Science |
| Dusit | Niyato | Computer Science |
| P. N. | Suganthan | Computer Science |
| Pablo P. | Boix | Cross-field |

| | | |
|-------------|------------|-----------------------------|
| Dongliang | Chao | Cross-field |
| Bo | Chen | Cross-field |
| Peng | Chen | Cross-field |
| Zhong | Chen | Cross-field |
| Pooi See | Lee | Cross-field |
| Weisi | Lin | Cross-field |
| Nripan | Mathews | Cross-field |
| Subodh G. | Mhaisalkar | Cross-field |
| Zexiang | Shen | Cross-field |
| Madhavi | Srinivasan | Cross-field |
| Tze Chien | Sum | Cross-field |
| Qihua | Xiong | Cross-field |
| Rong | Xu | Cross-field |
| Ting | Yu | Cross-field |
| Zhiyuan | Zeng | Cross-field |
| Changyun | Wen | Engineering |
| Lihua | Xie | Engineering |
| David | Wardle | Environment and ecology |
| Xiaodong | Chen | Materials science |
| Hong Jin | Fan | Materials science |
| Zheng | Liu | Materials science |
| Kanyi | Pu | Materials science |
| Xin | Wang | Materials science |
| Zhichuan J. | Xu | Materials science |
| Qingyu | Yan | Materials science |
| Staffan | Kjelleberg | Microbiology |
| K. George | Chandy | Pharmacology and toxicology |
| Guoqing | Chang | Physics |
| Rajan | Singh | Physics |
| Dingyuan | Tang | Physics |

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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, Humanities, Arts, & Social Sciences, and Graduate colleges. It also has a medical school, the Lee Kong Chian School of Medicine, set up jointly with Imperial College London.

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

Ranked amongst the world's top universities by QS, NTU has also been named the world's top young university for the past seven years. The University's main campus is frequently listed among the Top 15 most beautiful university campuses in the world and it has 57 Green Mark-certified (equivalent to LEED-certified) building projects, of which 95% are certified Green Mark Platinum. Apart from its main campus, NTU also has a campus in Singapore's healthcare district.

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.

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



25 NUS researchers rank among the world's most cited scientists

Researchers from the National University of Singapore (NUS) have been placed among the world's most highly cited. This is according to the newly unveiled list of Highly Cited Researchers™ 2020 by Clarivate.

The hotly anticipated annual list identifies researchers who demonstrate significant influence in their chosen field by publishing several highly cited papers during the last decade. Their names are drawn from the publications that rank in the top 1 per cent by citations for field and publication year in the Web of Science™ citation index.

A total of 25 NUS researchers have been named in this year's list. These NUS researchers were recognised by their peers as outstanding in the fields of Chemistry, Clinical Medicine, Computer Science, Economics and Business, Engineering, Materials Science, Physics, Neuroscience and Behaviour and more.

This year, more than 6,000 researchers in 21 fields were selected based on the number of highly cited papers they produced over 11 years from January 2009 to December 2019.

The methodology that determines the “who's who” of researchers draws on data and analysis performed by bibliometric experts at the Institute for Scientific Information™ at Clarivate. It uses a unique compilation of science performance metrics and trend data based on scholarly paper publication counts and citation data.

NUS Deputy President (Research and Technology) Professor Chen Tsuhan said, “NUS is proud of the achievements of our highly influential researchers who are making significant contributions to their respective fields, and much of their work has a profound impact on the communities we serve. We will remain steadfast in our singular focus on recruiting, nurturing, and retaining talent, who are the catalyst for a sustainable culture of innovation that will further strengthen Singapore's position as a vibrant research hub.”

David Pendlebury, Senior Citation Analyst at the Institute for Scientific Information at Clarivate said, “In the race for knowledge, it is human capital that is fundamental and this list identifies and celebrates exceptional individual researchers at NUS who are having a great impact on the research community as measured by the rate at which their work is being cited by others.”

The 25 highly cited NUS researchers are:

| Highly Cited NUS Researcher | Scientific Area |
|--|-----------------|
| Professor Jiang Donglin Department of Chemistry NUS Faculty of Science | Chemistry |

| | |
|--|-------------------|
| Professor Liu Bin Department of Chemical and Biomolecular Engineering NUS Faculty of Engineering | Chemistry |
| Professor Liu Xiaogang Department of Chemistry NUS Faculty of Science | Chemistry |
| Associate Professor Xie Jianping Department of Chemical and Biomolecular Engineering NUS Faculty of Engineering | Chemistry |
| Associate Professor Yan Ning Department of Chemical and Biomolecular Engineering NUS Faculty of Engineering | Chemistry |
| Professor Wong Tien Yin Duke-NUS Medical School Department of Ophthalmology, NUS Yong Loo Lin School of Medicine | Clinical Medicine |
| Dr Tan Jen Hong NUS Institute of Systems Science | Computer Science |
| Associate Professor Zhang Rui Department of Electrical and Computer Engineering NUS Faculty of Engineering | Computer Science |
| Professor Jerry Chan Kok Yen Duke-NUS Medical School | Cross-Field |
| Associate Professor Goki Eda Department of Chemistry and Department of Physics NUS Faculty of Science | Cross-Field |
| Professor Derek John Hausenloy Duke-NUS Medical School | Cross-Field |
| Research Assistant Professor Alan Prem Kumar Department of Pharmacology, NUS Yong Loo Lin School of Medicine NUS Cancer Science Institute of Singapore | Cross-Field |
| Associate Professor Qiu Cheng Wei Department of Electrical and Computer Engineering NUS Faculty of Engineering | Cross-Field |
| Professor Seeram Ramakrishna Department of Mechanical Engineering NUS Faculty of Engineering | Cross-Field |
| Associate Professor Gautam Sethi Department of Pharmacology NUS Yong Loo Lin School of Medicine | Cross-Field |
| Professor John Wang Department of Materials Science and Engineering NUS Faculty of Engineering | Cross-Field |
| Associate Professor Zhao Dan Department of Chemical and Biomolecular Engineering | Cross-Field |

| | |
|--|----------------------------|
| NUS Faculty of Engineering | |
| Professor Ang Beng Wah NUS Energy Studies Institute Department of Industrial Systems Engineering and Management, NUS Faculty of Engineering | Economics and Business |
| Dr Su Bin NUS Energy Studies Institute | Economics and Business |
| Professor Ge Shuzhi Sam Department of Electrical and Computer Engineering NUS Faculty of Engineering | Engineering |
| Professor Guillermo C. Bazan Department of Chemistry Faculty of Science | Materials Science |
| Professor Loh Kian Ping Department of Chemistry NUS Faculty of Science | Materials Science, Physics |
| Professor Sir Konstantin Novoselov Department of Materials Science and Engineering NUS Faculty of Engineering | Materials Science, Physics |
| Associate Professor Thomas Yeo Boon Thye Duke-NUS Medical School Department of Electrical and Computer Engineering, Faculty of Engineering | Neuroscience and Behaviour |
| Professor Antonio Helio Castro Neto NUS Centre for Advanced 2D Materials Department of Physics, NUS Faculty of Science Department of Materials Science and Engineering, NUS Faculty of Engineering | Physics |

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2020 HIGHLY CITED RESEARCHERS LIST: PROFILES OF LOCAL A*STAR RESEARCHERS

Four local A*STAR researchers made it to the 2020 list of Highly Cited Researchers by the Web of Science Group, a Clarivate Analytics company.

1. Professor Loh Xian Jun

*Executive Director, Institute of Materials Research and Engineering (IMRE), A*STAR*

Prof Xian Jun Loh completed his basic and postgraduate studies at the National University of Singapore. A polymer chemist by training, he is currently the Executive Director at the Institute of Materials Research and Engineering (IMRE), A*STAR. He is concurrently an Adjunct Professor at the Nanyang Technological University. As a pioneer in the area of biodegradable thermogels, he is highly knowledgeable in developing these materials for various applications spanning biomedical, engineering, cosmetics, personal care and food. His scientific contributions have earned him the position of Fellowship in both Fitzwilliam College in the University of Cambridge as well as in the Royal Society of Chemistry. He is also the current Vice President and member of the Executive Committee of the Singapore National Institute of Chemistry. With his extensive experience in authoring more than 250 journal papers, 38 patents and know-hows, over 30 book chapters and 7 books, he currently sits on several editorial boards of international journals as an expert in his area. He has also successfully helped in the commercialisation of 8 different products and is always interested in the translation of science to products.

His research work in A*STAR focuses on the development of a new biodegradable thermogel, which will transform retinal detachment surgeries. This thermogel has similar characteristics to our eyes' natural vitreous. It could serve as a long-term substitute to vitreous, and helps to improve post-surgery comfort and reduce future complications for patients.

2. Dr Peter See

*Senior Research Fellow, Institute of Molecular and Cell Biology (IMCB), A*STAR*

Dr See did his PhD in Immunology with Dr Florent Ginhoux's guidance at the Singapore Immunology Network (SIgN), A*STAR, under the A*STAR Graduate Scholarship where he studied the development and ontogeny of dendritic cells and macrophages. Dendritic cells are important regulators of immune responses and manipulating these cells require an extensive knowledge of their origins. They discovered the human precursor of conventional dendritic cells (pre-DC) which opened new avenues for therapeutic targeting of DC subsets. Dr See joined A*STAR's Molecular Engineering Laboratory (MEL) in 2018 to continue his research on tissue-resident macrophages in the brain as an independent

scientist while tapping on the multidisciplinary expertise and technology development capabilities within MEL.

His current work involves understanding the role of brain tissue-resident macrophages in homeostasis and inflammation. Understanding how these tissue-resident macrophages develop and function can help us better understand how certain neurodegeneration diseases occur, as well as discover new ways to treat them.

3. Dr Seh Zhi Wei

*Senior Scientist, Institute of Materials Research and Engineering (IMRE), A*STAR*

Dr Seh Zhi Wei is a Senior Scientist at the Institute of Materials Research and Engineering (IMRE), A*STAR. He received his BS and PhD degrees in Materials Science and Engineering from Cornell University and Stanford University, respectively. Dr Seh's research interests lie in the design of new materials for energy storage and conversion, including advanced battery and electrocatalyst systems. As a Highly Cited Researcher on Web of Science, he is widely recognised for designing the first yolk-shell nanostructure in lithium-sulfur batteries. Dr Seh has published in many top journals such as Science, Nature Energy, Nature Materials, Nature Communications, Nature Catalysis, and Nature Machine Intelligence. For his research achievements, he also received numerous awards including Vebleo Fellow Award, Ten Outstanding Young Persons, Emerging Investigators, Singapore NRF Fellowship, Innovators under 35 Asia, MRS Graduate Student Award, and A*STAR National Science Scholarship.

Lithium-ion batteries today are reaching their theoretical energy limits. To overcome these limits, his team works on next-generation sodium- and magnesium-ion batteries, which can offer higher energy density and/or lower cost due to the different material chemistries. Recently, they developed the world's best-performing sodium-sulfur battery operating over 1000 cycles at room temperature, with high energy density of 500 Wh/kg (about twice that of lithium-ion batteries today). They are currently developing magnesium-sulfur batteries with even higher energy density and improved safety. These advanced batteries can be used to power both stationary and electromobile applications for a sustainable energy future.

4. Professor Zhang Yong-Wei

*Principal Scientist & Deputy Executive Director (Research), Institute of High Performance Computing (IHPC), A*STAR*

Prof Yong-Wei Zhang is Principal Scientist II and Deputy Executive Director (Research) at the Institute of High Performance Computing (IHPC), A*STAR. He is an Adjunct Professor at the National University of Singapore and Singapore University of Technology and Design. His research interests focus on employing/developing theory, modelling and simulation to investigate the structural, mechanical, electronic, thermal and chemical properties of materials for new material design, additive manufacturing, nanoelectronics, energy conversion and storage et al. He has published about 500 peer reviewed international journal papers. He is listed as Global Highly Cited Researchers in 2018 and 2019 by Web of Science Group. He is an Editorial Board Member for

Advanced Theory and Simulation (Wiley), and International Journal of Applied Mechanics (World Scientific), and Acta Mechanica Sinica (Springer).

Prof Zhang has been employing and developing theory, modelling and simulation to investigate the cross-field of mechanics, physics and chemistry of materials, with a focus on advanced materials development, additive manufacturing, nanoelectronics, and green energy.

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SMU FACTSHEET



SMU business school dean, [Professor Gerard George](#), has been named ‘Highly Cited Researcher’ in Clarivate’s [list of 2020 Highly Cited Researchers](#)TM for his impactful, multi-disciplinary research.

He is being recognised in the ‘Cross-Field’ category, which applauds researchers who exhibit research impact across multiple traditional fields – three out of four of Prof George’s Highly Cited Papers are in the field of Economics & Business, while a fourth paper is in Social Sciences.

Prof George had also received the accolade of ‘Highly Cited Researcher’ last year and was the first business professor in Singapore to have done so. This second-time acknowledgement from Clarivate is certainly a testament to the significant and global influence of his research in academia.

Highly Cited Papers

Prof George’s four Highly Cited Papers are:

| | | |
|-------------------------------|--|-----------------|
| Field of Economics & Business | <u><i>Innovation for Inclusive Growth: Towards a Theoretical Framework and a Research Agenda</i></u> | Cited 241 times |
| | <u><i>Understanding and tackling societal grand challenges through management research</i></u> | Cited 200 times |
| | <u><i>West Meets East: New Concepts and Theories</i></u> | Cited 135 times |
| Field of Social Sciences | <u><i>Are Public-Private Partnerships a Healthy Option? A Systematic Review</i></u> | Cited 145 times |

Quotes

“I am honoured to be personally recognised for impactful cross-disciplinary research. This success is really due to the genius and hard work of my co-authors and collaborators. SMU Lee Kong Chian School of Business is home to exceptional faculty who bring the latest empirical evidence to guide business theory and practice. I’m humbled to be part of this team.”

- Professor Gerard George
 Dean, SMU Lee Kong Chian School of Business
 Lee Kong Chian Chair Professor of Innovation and Entrepreneurship

“We are extremely proud of Prof George’s deserved recognition. His work exemplifies SMU’s emphasis on multi-disciplinary research, at the intersection of management sciences and technology, as a key driver for innovation. His research has also established the transformational role of university-industry collaboration, which resonates with SMU’s strengthened strategic focus on industry-oriented innovation.”

- Professor Archan Misra
Vice Provost (Research); Professor of Information Systems;
and
Director, Centre for Applied Smart-Nation Analytics

About SMU Research

Singapore Management University is a dynamic city university in the heart of Singapore. We are a specialised university focused on Management, Social Sciences and Technology, and their intersections.

We adopt an integrated research-teaching-learning-practice approach that fosters innovative learning experiences, develops influential change agents and leaders, and creates positive impact on business, government and society in Asia and beyond.

SMU continues to strengthen as a research-intensive university which generates high impact, disciplinary and cross-disciplinary research that addresses issues of regional and global relevance. This is done through our six Schools and our institutes, centres and labs. To maximise societal impact, SMU conducts both fundamental academic and use-inspired translational research, often in collaboration with public agencies and partner companies.

For more information on SMU’s research, please visit research.smu.edu.sg.

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SUTD Professor Lists as Highly Cited Researcher for the Fifth, Consecutive Year



For the fifth year running, Professor Tony Quek, has been named 2020 Clarivate Analytics Highly Cited Researcher in the field of Computer Science.

Professor Quek is Head of Pillar for the Information Systems Technology and Design at the Singapore University of Technology and Design (SUTD), as well as Program Director of Design & AI Degree programme. He focuses in the research domain of small cell networks and beyond 5G future communications.

Small cell networks, compared to conventional base stations which transmit networks over a wider span of geographical area, are able to be deployed indoors in locations such as trains, offices or residential homes. This allows for the network to be closer to users, resulting in a lower-power network and seamless coverage for quicker, reliable connectivity.

Professor Quek is currently leading an indoor network testbed of 5G small cells at SUTD. This is in partnership with M1, one of the major telecommunications service providers and is the first indoor 5G system to be deployed in Singapore.

Real-time remote operation of robots, augmented-reality content and e-scooters are some of the testbed's areas of focus. This will help translate research innovations into industry solutions while providing SUTD's students, faculty and staff invaluable access to the latest 5G technology.

He has also co-authored two books, 'Small Cell Networks' and 'Cloud Radio Access Networks', published by Cambridge University Press in 2013 and 2016 respectively. His books have provided insights to academia and industry experts into the area of small

cell solutions as well as opportunities for deep diving into technical refinements to boost efficiency and network performance.

SUTD is one of the first universities in the world to incorporate the art and science of design and technology into a transdisciplinary, human-centric curriculum. Its mission is to nurture technically grounded leaders to address the challenges of the society and better the world.

A research-intensive university, SUTD is distinguished by its unique East and West academic programmes which incorporate elements of innovation, entrepreneurship, design thinking and local and international industry collaborations. SUTD continues to invest in the growth areas of Healthcare, Cities and Aviation which are supported by capabilities in Artificial Intelligence and Data Science.

“It is my honour to be listed as a Highly Cited Researcher for the fifth consecutive year. This is only possible with the continuous support from SUTD, MOE, and NRF. With 5G being deployed, the world starts to research in 6G and I hope to make an impact together with my team in SUTD and Singapore. “

Professor Tony Quek

**Head, Information Systems Technology and Design (ISTD) Pillar
Singapore University of Technology and Design**

“SUTD continues to champion multi- and inter-disciplinary research, within which Professor Quek’s research in future communications will be instrumental in meeting the challenges that come with Singapore’s ongoing Smart Nation journey.”

Professor Yeo Kiat Seng

Associate Provost

Research and International Relations

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About Tony Quek

Tony Q.S. Quek received the Bachelor of Engineering and Master of Engineering degrees in Electrical and Electronics Engineering from Tokyo Institute of Technology. At MIT, he earned the Ph.D. in Electrical Engineering and Computer Science. Currently, he is the Cheng Tsang Man Chair Professor with the Singapore University of Technology and Design (SUTD). He also serves as the Head of ISTD Pillar, Sector Lead for SUTD AI Program, and the Deputy Director of SUTD-ZJU IDEA. His current research topics include wireless communications and networking, big data processing, network intelligence, URLLC, and IoT.

Professor Quek received the 2008 Philip Yeo Prize for Outstanding Achievement in Research, the 2012 IEEE William R. Bennett Prize, the 2016 IEEE Signal Processing Society Young Author Best Paper Award, the 2017 CTTC Early Achievement Award, the 2017 IEEE ComSoc AP Outstanding Paper Award, the 2020 IEEE Communications Society Young Author Best Paper Award, the 2020 IEEE Stephen O. Rice Prize, the 2020 Nokia Visiting Professorship, and the 2016-2020 Clarivate Analytics Highly Cited Researcher. He is a Distinguished Lecturer of the IEEE Communications Society and a Fellow of IEEE.

About SUTD

The Singapore University of Technology and Design (SUTD) is Singapore's fourth public university, and one of the first universities in the world to incorporate the art and science of design and technology into a transdisciplinary, human-centric curriculum. SUTD seeks to advance knowledge and nurture technically-grounded leaders and innovators to serve societal needs. SUTD also recently topped a list of emerging engineering schools in the world in a study conducted by MIT.

A research-intensive university, SUTD is distinguished by its unique East and West academic programmes which incorporate elements of innovation, entrepreneurship, design thinking and local and international industry collaborations. SUTD will focus in key areas – Healthcare, Cities and Aviation, supported by capabilities in Artificial Intelligence/Data Science and Digital Manufacturing. Multiple post-graduate opportunities are available. In addition, skill-based professional education and training courses are also available at SUTD Academy.

FACTSHEET

Ngee Ann Polytechnic (NP) is the first polytechnic to make the annual Highly Cited Researchers List.

Over the years, NP has collaborated with both local and international healthcare institutions and clinicians to develop Artificial Intelligence (AI) powered applications in healthcare.

Some of these projects include:

- Automated Retinal Health Screening System (ARS) using Deep Learning Technique
- Heart – Wireless Ultrasound Patch Sensor (WUS)
- Automated detection of dry eye using thermogram images
- Automated Detection of Glaucoma Using Deep Learning Technique

“Dr Rajendra Acharya has been a Senior Research Fellow with Ngee Ann Polytechnic for well over 20 years. During this time, our staff and student community has benefited tremendously through his expertise and international connections — developing new skills, acquiring new knowledge and coming up with breakthrough innovations. We are excited to see his hard work being recognized on a global scale. We are also very honoured to be the first polytechnic level institution to be ranked on this highly anticipated annual list.” – Mr. Andrew Sabaratnam, Senior Director – Technology, Innovation and Enterprise, Ngee Ann Polytechnic.

About Dr U. Rajendra Acharya

Dr U. Rajendra Acharya, MTech, PhD, DEng, DSc is a senior research fellow at Ngee Ann Polytechnic, Singapore. He is also an Adjunct Professor at University of Malaya, Malaysia, and an Associate faculty at Singapore University of Social Sciences, Singapore.

He has published more than 500 papers, in refereed international SCI-IF journals (345), international conference proceedings (42), books (17) with more than 34,500 citations in Google Scholar (with h-index of 98). He has worked on various funded projects.

He is ranked in the top 1% of the Highly Cited Researchers for the last five consecutive years (2016 to 2020) in Computer Science according to the Essential Science Indicators of Thomson. He is one among the World's Top 100,000 Scientists in 2019.

Dr Acharya is collaborating with National Heart Centre, Khoo Teck Puat Hospital, and Eagle Eye Centre in Singapore. Sankara Nethralaya Eye Hospital in Chennai, India, Kumamoto University, Japan, and Taylor's Medical University, Malaysia on various projects.

Dr Acharya is developing a retinal health screening software to classify the normal and abnormal (Diabetes retinopathy, age related macular degeneration and glaucoma) eye conditions in collaboration with Eagle Eye Centre, Singapore. He is developing an automated dry eye screening system using infrared images in collaboration with Khoo Teck Puat Hospital, Singapore.

In addition, Dr Acharya is collaborating with National Heart Centre in Singapore and Kumamoto University in Japan to develop an intelligent system to monitor the functioning of heart using wireless ultrasound patch.

He is also developing a computer assisted software to detect thyroid cancer system using ultrasound images in collaboration with Taylor's medical university, Malaysia.

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[About Ngee Ann Polytechnic](#)

Ngee Ann Polytechnic started in 1963 and is today one of Singapore's leading institutions of higher learning with over 14,000 enrolled students in over 40 disciplines. It seeks to develop students with a passion for learning, values for life, and competencies to thrive in a global workplace.

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