

## WiSE My Story template

<p>Name, including job title and any qualifications and memberships</p> 	<p><b>Associate Professor Yen Nee Tan</b>          Chemical Engineering and Advanced Materials          Faculty of Science, Agriculture and Engineering</p> <p><b>Qualifications:</b>          PhD and MSc in Molecular Engineering of Biological and Chemical Systems, Singapore-MIT Alliance (<u>SMA Fellow</u>) Joint degree from National University of Singapore and Massachusetts Institute of Technology, 2008          BEng in Chemical and Biomolecular Engineering (<u>ASEAN Scholar</u>), National University of Singapore, 2004</p> <p><b>Memberships:</b>          Material Research Society, Singapore (MRS-S)          Material Research Society, Japan (MRS-J)          American Chemical Society (ACS), USA          International Association of Advanced Materials (IAAM), Sweden          Asia Pacific Society for Materials Research (APSMR), China          Editorial Board Member, Austin Journal of Biosensors and Bioelectronics          Editorial Board Member, American Journal of Materials and Applied Science</p> <p><b>Editorships:</b>          Associate Editor, Sensors International, Elsevier          Guest Editor of Special Issue on “<i>Materials Engineering for Batteries and Nanobiosensors</i>”, Material Science for Energy Technologies (MSET), Elsevier and KeAi Publishing          Book Editor of “<i>Next Generation Point-of-Care Biomedical Sensors Technologies for Cancer Diagnosis</i>”, Springer Nature Publishing          Guest Editor of Special Issue on “<i>Molecular Engineering of Bioinspired Materials and Applications</i>”, Journal of Molecular and Engineering Materials (JMEM), World Scientific</p>
<p>Where do you currently work?</p>	<p>All Singapore based:</p> <ul style="list-style-type: none"> <li>• Newcastle University</li> <li>• Newcastle Research &amp; Innovation Institute / Institute of Materials Research and Engineering, A*STAR, Singapore (PI, Joint Appointment)</li> <li>• National University of Singapore (Adjunct Faculty)</li> </ul>
<p>Where do you live?</p>	<p>I live in Singapore and love travelling around the world for scientific conferences and knowledge exchange back to our UK campus.</p>

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<p>What is your field of study / work?</p>	<p>My research is inspired by the ingenious abilities of living organisms to synthesise, recognise and assemble precise, intricate nanostructures using simple nano-machineries for the development of de-novo bio-hybrid nanomaterials. Different from the conventional approaches, I employ the nature's biomolecular tools, such as DNA and peptides, with synthetic chemistry and material by design strategies to engineer next generation metal nanoparticles (NPs) and carbon-based materials (biodots) with physiochemical properties such as optical, electronic and catalytic, which are not seen in their bulk form. These nanoproboscopes can be easily conjugated with and/or synthesized directly using biomolecules, allowing their properties to be conveniently tuned for a wide range of applications such as medicine, energy, food and environment.</p> <p>For more details, kindly refer to my research webpage (see the link provided at the end)</p>
<p>How did you get interested in science and engineering? What interests you the most about the field?</p>	<p>I always had a fascination with science and technology and this has developed into my interest in engineering which require the knowledge of physic, chemistry and biology since young. I always wonder how the world works, and how could I make an impact to the world through my scientific curiosity.</p> <p>What interest me the most is the amazing creation of Life, e.g. How DNA works to distinguish each individual so precisely. I believe Science is all about process of discovery and Nature is always the greatest source of scientific inspiration. It makes you think of the impossible and think out of the box to find innovative solutions that will ameliorate the world. That's why I love it – my research on bioinspired engineering solutions.</p>
<p>If you are undertaking research, what impact do you hope your research will have?</p>	<p>"I am happy to do research that can be translated into something beneficial for our society"</p> <p>My passion in research is driven by the innate desire to help people and to improve the quality of life. I hope my research on nanotechnology and bioinspired materials can provide green and sustainable solutions to solve interdisciplinary problems such as global warming, water pollution, energy shortage and overloaded healthcare issues. I am currently working on the discovery of biomimetic nanoproboscopes and their application as bio-smart nanotheranostics which could one day enable faster diseases diagnosis with targeted (non-invasive) treatment. The fundamental understanding on the intertwined relationships of biological processes and nanotechnology could contribute towards 'personalisation' of materials and smart nanodevices that can</p>

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	greatly benefit mankind with monumental advances in healthcare and sustainability.
What would you say to someone who is interested in entering your field of research or area of study?	<p>My research is multidisciplinary at the crossroad of biology, chemistry, materials and engineering. I talk to people from different fields, understand the problems, and we work together to come out with incredible solutions through research collaborations.</p> <p>Most importantly: work on those fields that you are really passionate about and inspire those will follow your footsteps one day to create the propagating effects in science.</p> <p>To my fellow ladies, believe in yourself, it can be difficult sometime to juggle between family and work, but as women, we can endure and embrace the challenges.</p>
What is one major goal you have for your life or your career?	My career goal is to become a full Professor eventually who can teach and do research over my lifetime. Now, I want to make sure that my work has impact and my teaching is useful to unleash the potential of my students, as well as become as role model to empower women in science for the betterment of our society.
Have you had any mentors? How do they inform what you do now?	There are many respectful and inspiring people who have given me advice and help to shape who I am today. They include my family, friends and colleagues. In particular, my PhD thesis advisors (Prof Jim Yang Lee from NUS and Prof Daniel IC Wang from MIT) who always believe in me for my work and inspire me to pursue academia as my outmost career goal.
Do you have a favourite quote?	<p>My favourite quote is:</p> <p style="text-align: center;"><b>“The world needs science and science needs women”</b> (Alexandra Palt, Executive Vice President, L'Oréal Foundation).</p>

### Research Webpage (Yen Nee Tan)

<https://www.ncl.ac.uk/singapore/about/staff/profile/yenneetan.html#research>