The NRF Investigatorship provides opportunities for established, innovative and active scientists and researchers, in their mid-career, to pursue ground-breaking, high-risk research. It is designed to support a small number of excellent Principal Investigators who have a track record of research achievements that identify them as leaders in their respective field(s) of research.

CLASS OF 2015

**Prof LOH Kian Ping**  
*National University of Singapore*  
*Department of Chemistry*

Research Title: Graphene Oxide: a New Class of Catalytic, Ionic and Molecular Sieving Material  
Homepage: [https://www.chemistry.nus.edu.sg/people/academic_staff/lohp.htm](https://www.chemistry.nus.edu.sg/people/academic_staff/lohp.htm)

**A/P LIU Bin**  
*National University of Singapore*  
*Department of Chemical and Biomolecular Engineering*

Research Title: Aggregation Induced Emission: A Revolutionary Path to Molecular Probes and Theranostic Nanoplatforms  
Homepage: [http://www.chbe.nus.edu.sg/faculty/cheliub](http://www.chbe.nus.edu.sg/faculty/cheliub)

**A/P XIONG Qi Hua**  
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Research Title: Expanding the toolbox of laser cooling towards the next-generation optical refrigeration  
Homepage: [http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=QIHUA](http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=QIHUA)

**Prof Christos PANAGOPoulos**  
*Nanyang Technological University*  
*School of Physical & Mathematical Sciences*

Research Title: Magnetic Interactions for Spin Topology  
Homepage: [http://www.spms.ntu.edu.sg/pap/Home/Faculty/Panagopoulos_Christos.html](http://www.spms.ntu.edu.sg/pap/Home/Faculty/Panagopoulos_Christos.html)
A/P Markus WENK  
*National University of Singapore*  
*Department of Biochemistry and Department of Biological Sciences*

Research Title: Defining Natural Boundaries of Lipidomic Variations  
Homepage: [http://www.dbs.nus.edu.sg/staff/wenk.htm](http://www.dbs.nus.edu.sg/staff/wenk.htm)

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A/P Paul MACARY  
*National University of Singapore*  
*Yong Loo Lin School of Medicine*

Research Title: Molecular Engineering of Fully Human Monoclonal Antibodies  

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Prof Kanaga SABAPATHY  
*Duke-NUS Medical School*  
*Cancer & Stem Cell Biology Program*

Research Title: Unravelling the Mechanistic Basis of Tumour Suppression vs. Tumour Promotion by p73 - a Paradigm for Cell-fate Choice by Transcription Factors  
Homepage: [http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=MSJPHEE](http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=MSJPHEE)
A/P LOK Shee Mei  
*Duke-NUS Medical School*  
*Emerging Infectious Diseases Program*

Research Title: Understanding Possible Structural Variations of Dengue Virus Particles and Their Implications in the Design of Effective Vaccine and Therapeutic Agents  
Homepage: [https://www.duke-nus.edu.sg/content/lok-shee-mei](https://www.duke-nus.edu.sg/content/lok-shee-mei)

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Prof YU Hao  
*National University of Singapore*  
*Department of Biological Sciences*

Research Title: Unravelling the Mechanism of Macromolecular Trafficking in Plants  
Homepage: [http://www.dbs.nus.edu.sg/staff/yuhao.htm](http://www.dbs.nus.edu.sg/staff/yuhao.htm)

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A/P YAN Jie  
*National University of Singapore*  
*Department of Physics*

Research Title: Understanding and Altering Mechanosensing of Cells  

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Prof LOW Xiong Wen, David  
*Nanyang Technological University*  
*School of Chemical and Biomedical Engineering*

Research Title: Metal-Organic Frameworks-Derived Functional Materials for Electrochemical Energy Storage and Conversion  
Homepage: [http://www.ntu.edu.sg/home/xwlou/](http://www.ntu.edu.sg/home/xwlou/)

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Prof LEE Pooi See  
*Nanyang Technological University*  
*School of Material Science and Engineering*

Research Title: Deformable Electronic Materials and Devices for Human Machine Interface  
Homepage: [http://www.ntu.edu.sg/home/pslee/](http://www.ntu.edu.sg/home/pslee/)
A/P CHI Yonggui, Robin  
_Nanyang Technological University_  
School of Physical and Mathematical Sciences

Research Title: Opportunities with Carbene Organocatalysis: New Activation Modes & Metal-Free Rapid Green Access to Functional Molecules  
Homepage: [http://www.ntu.edu.sg/home/robinchi/](http://www.ntu.edu.sg/home/robinchi/)

Prof PHEE Soo Jay, Louis  
_Nanyang Technological University_  
School of Mechanical and Aerospace Engineering

Research Title: Extending the Reach of Flexible Robotic Surgery  
Homepage: [http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=MSJPHEE](http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=MSJPHEE)

Prof Hilmi Volkan Demir  
_Nanyang Technological University_  
School of Electrical and Electronic Engineering

Research Title: Emerging Colloidal Quantum Optoelectronics of Solution-Processed Atomically-Flat Nanocrystals  
Homepage: [http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=HVDEMIR](http://research.ntu.edu.sg/expertise/academicprofile/Pages/StaffProfile.aspx?ST_EMAILID=HVDEMIR)
Dr Arseniy KUZNETSOV  
*Agency of Science, Technology and Research*  
*Data Storage Institute*  

Research Title: Sub-wavelength-resolution spatial light modulators based on active nanoantennas and metasurfaces  

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Dr Florent GINHOUX  
*Agency of Science, Technology and Research*  
*Singapore Immunology Network*  

Research Title: IPSC-derived tissue organoids as a platform to model and study neurodegenerative disorders  
Homepage: [https://www.a-star.edu.sg/sign/Research/Principal-Investigators/tid/5.aspx](https://www.a-star.edu.sg/sign/Research/Principal-Investigators/tid/5.aspx)

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Dr Nicholas Barker  
*Agency of Science, Technology and Research*  
*Institute of Medical Biology*  

Research Title: Identifying Novel Lgr5+ Stem Cell Populations & Evaluating their Roles in Epithelial Homeostasis, Repair and Cancer  
Homepage: [https://www.a-star.edu.sg/imb/Research/tid/7/Epithelial-Stem-Cells.aspx](https://www.a-star.edu.sg/imb/Research/tid/7/Epithelial-Stem-Cells.aspx)

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Prof Gong Jiangbin  
*National University of Singapore*  
*Department of Physics*  

Research Title: Quantum control approach to new topological phases of matter  

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Prof David SILVER  
*Duke-NUS Medical School*  
*Cardiovascular & Metabolic Disorders Programme*  

Research Title: Mechanism-based molecular lipid nutrition and therapeutics for healthy brain development and function  
Homepage: [https://www.duke-nus.edu.sg/cvmd/content/david-silver](https://www.duke-nus.edu.sg/cvmd/content/david-silver)
A/P Fidel COSTA  
_Nanyang Technological University_  
_Asian School of the Environment_

**Research Title:** Calibrating the lifetimes of magma reservoirs below active volcanoes  
**Homepage:** [http://www.earthobservatory.sg/people/fidel-costa](http://www.earthobservatory.sg/people/fidel-costa)

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Prof CHEN Xiaodong  
_Nanyang Technological University_  
_School of Materials Science and Engineering_

**Research Title:** Conformal electronic devices based on silk protein: Adding autonomy to an ancient material  
**Homepage:** [http://www.ntu.edu.sg/home/chenxd/](http://www.ntu.edu.sg/home/chenxd/)

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Prof Srinivasan MADHAVI  
_Nanyang Technological University_  
_School of Materials Science and Engineering_

**Research Title:** Water‐based rechargeable battery chemistries for new generation of safe, high energy density sustainable energy storage devices  
**Homepage:** [http://webserver.mse.ntu.edu.sg/homepages/madhavi/](http://webserver.mse.ntu.edu.sg/homepages/madhavi/)

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Prof PHAN Anh Tuan  
_Nanyang Technological University_  
_School of Physical & Mathematical Sciences_

**Research Title:** Structurally and chemically controlled G-quadruplex DNA: Understanding and application in therapeutics  
**Homepage:** [http://www.ntu.edu.sg/home/phantuan/](http://www.ntu.edu.sg/home/phantuan/)
Dr KHOR Chiea Chuen  
*Agency of Science, Technology and Research*  
*Genome Institute of Singapore*

Research Title: Deciphering the genetic architecture of age-related diseases using eye diseases as the paradigm  

Dr Jonathan Yuin-Han LOH  
*Agency of Science, Technology and Research*  
*Institute of Molecular and Cell Biology*

Research Title: Single-cell Transcriptome and Accessibility Regions (STAR) for analyzing cell fates plasticity and heterogeneity of complex tissues  

Dr Bruno REVESADE  
*Agency of Science, Technology and Research*  
*Institute of Medical Biology*

Research Title: Realize the Translational and Therapeutic Potential of the ELABELA-nergic Pathway  
Homepage: [https://www.a-star.edu.sg/imb/Research/tid/12/Human-Genetics-Embryology.aspx](https://www.a-star.edu.sg/imb/Research/tid/12/Human-Genetics-Embryology.aspx)

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*Mechanobiology Institute*

Research Title: Synthetic epithelial morphogenesis: a new perspective from mechanobiology  
Homepage: [https://mbi.nus.edu.sg/virgile-viasnoff/](https://mbi.nus.edu.sg/virgile-viasnoff/)

Prof LU Yixin  
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*Department of Chemistry*

Research Title: Phosphine Catalysis: New Heights in Asymmetric Synthesis, Applications to Medicinal Chemistry & Potentials in Green, Sustainable Production  
Homepage: [https://www.chemistry.nus.edu.sg/people/academic_staff/luyx.htm](https://www.chemistry.nus.edu.sg/people/academic_staff/luyx.htm)
**A/P WANG Qing**  
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Research Title:  "E-blood": Simultaneous Powering and Cooling of Microchips for Energy Resilient and Power Efficient Computing  
Homepage:  [www.mse.nus.edu.sg/staff/wq.php](http://www.mse.nus.edu.sg/staff/wq.php)

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Research Title:  Engineer a robust platform for topological quantum computation using 2D materials  
Homepage:  [https://www.physics.nus.edu.sg/staff/barbaros.html](https://www.physics.nus.edu.sg/staff/barbaros.html)

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Research Title:  Smart supramolecular prodrug systems for combination cancer theranostics  
Homepage:  [www.mse.ntu.edu.sg/AboutUs/Organisation/Staff/Pages/zhaoyanli.aspx](http://www.mse.ntu.edu.sg/AboutUs/Organisation/Staff/Pages/zhaoyanli.aspx)

**A/P SUM Tze Chien**  
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Research Title:  Towards >44% Perovskite Solar Cells  
Homepage:  [www.ntu.edu.sg/home/tzechien/spms/research_group.html](http://www.ntu.edu.sg/home/tzechien/spms/research_group.html)