List of Awarded CRP Projects

S/N	Title	Principal Investigator	Host Institute
CRP 1			
1	Artificial Mesoscopic Structures for Next Generation Electronic and Photonic Technology	A/Prof. Zhang Dao Hua	NTU
2	Graphene related Materials and Devices	Prof. Loh Kian Ping	NUS
3	Lipidomics: Novel Tools and Applications	A/Prof. Markus Wenk	NUS
4	Multi-functional Spintronic Materials and Devices	A/Prof. Ding Jun	NUS
5	Molecular Engineering of Membrane Materials Research and Technology for Energy Development: Hydrogen, Natural Gas and Syngas	Prof. Neal Chung Tai-shung	NUS
CRP2			
6	Biodegradable Cardiovascular Implants	Prof. Freddy Boey	NTU
7	Towards Manufacturability of Carbon Nanotube-based Printed Electronics	Prof. Mary Chan	NTU
8	Theory and Practice of Coding and Cryptography	Prof. Ling San	NTU
9	Biologically-inspired Design, Nano-fabrication and Nano-lubrication of MEMS, NEMS and Micro-mechanical Devices	A/Prof. Sujeet Sinha	NUS
CRP3			
10	Autologous Cell Therapy for the Aging Heart Using Reprogrammed Cells	Dr. Winston Shim	National Heart Centre
CRP4			
11	Adult and Induced Pluripotent Stem cells for Neurological Disorders and CNS Repair	Prof. George Augustine	Duke-NUS Medical School
12	Membrane Protein Sciences – Tools for Rational Discovery of Novel Therapeutics and Diagnostic Targeting Integral Membrane Proteins	A/Prof. Jaume Torres	NTU
13	Nanonets: New Materials, Devices for Integrated Energy Harnessing & Storage	Prof. Subodh Mhaisalkar	NTU
14	Interface Science and Technology	A/Prof. Christos Panagopoulos	NTU
15	Tailoring Oxide Electronics by Atomic Control	Prof. Thirumalai Venkatesan	NUS
16	Frontiers in Magnetic Recording Research: Vision for 10 Terabits per square inch	Prof. Charanjit Bhatia	NUS
CRP5			
17	Underwater Infrastructure and Underwater City of the Future	A/Prof. Tan Soon Keat	NTU

S/N	Title	Principal Investigator	Host Institute
18	Sustainable Urban Waste Management for 2020	A/Prof. Ng Wun Jern	NTU
19	Engineering Biology for Valuable Fuels	A/Prof. Matthew Chang	NTU
20	Toward Efficient Sunlight Harvesting	Dr. Zhao Yang	NTU
21	New Biotechnology for Processing Metropolitan Organic Wastes into Value-Added Products	A/Prof. He Jian Zhong	NUS
CRP6			
22	Advanced FO Membranes and Membrane Systems for Wastewater Treatment, Water Reuse and Seawater Desalination	Prof. Neal Chung Tai-shung	NUS
23	Excitonics Science and Technology toward Revolutionary Semiconductor Lighting: Ultra-Efficiency Excitonic Energy Transfer for Next-Generation Lighting and Displays	Prof. Hilmi Volkan Demir	NTU
24	Enabling Technologies for Large-scale Urban Subterranean Space Exploitation in Soft Soil Conditions	Prof. Lee Fook Hou	NUS
25	Enabling the Next Wave of Ultra Low Power Nano-systems: Heterogenous Integration of Low Power Electronics with High Performance Photonics	Prof. Yoon Soon Fatt	NTU
26	Novel 2D Materials with Tailored Properties: Beyond Graphene	Prof. Antonio Castro-Neto	NUS
CRP7			
27	AQMARINOME2016: Increasing Singapore's food fish production through aquaculture genomics R&D	Prof. Laszlo Orban	TLL
28	Rice for the future: Novel strategies to develop elite and improved varieties for sustainable rice production.	Prof. Prakash Kumar	NUS
29	Development of Virus-Controlling Biotechnologies for Cost-Efficient & Sustainable Aquaculture	A/Prof. Ge Ruowen	NUS
CRP8			
30	Self-Powered Body Sensor Network for Disease Management and Prevention Oriented Healthcare	A/Prof. Heng Chun Huat	NUS
31	Green factories for Essential Oil Production-Develop Plant System and Microbial Systems for the Sustainable Production of Valuable Chemicals from Plants	Dr. Ji Lianghui	TLL
32	New Generation Heating, Ventilation and Air Conditioning Systems - Total Energy Efficiency Solutions	A/Prof. Cai Wenjian	NTU
33	Redox Flow Lithium Batteries as a New Concept and Implementable Solution for Large Scale Energy Storage	A/Prof. Wang Qing	NUS
34	Herbalomic: Novel Approach for Fingerprinting and Authentication of Herbal Products	Prof. James Tam	NTU
35	Control of Exotic Quantum Phenomena at Strategic Interfaces and Surfaces for Novel Functionality by in-situ Synchrotron Radiation	Prof. Mark Breese	NUS
36	Plasmonic-Electronics: New Generation of Devices to Bypass Fundamental Limitations	A/Prof. Christian Nijhuis	NUS

S/N	Title	Principal Investigator	Host Institute
37	Design and Development of a Comprehensive Information Technology Infrastructure for Data-Intensive Applications and Analysis	Prof. Ooi Beng Chin	NUS
CRP9			
38	Non-volatile Magnetic Logic and Memory Integrated Circuit Devices	Dr. Lew Wen Siang	NTU
39	Toward Commercialization of Graphene Technologies	Prof. Barbaros Özyilmaz	NUS
40	Research and Development of Novel Interfacial Water Technologies	Prof. Paul Matsudaira	NUS
41	Artificial Liver Platform for Next-Generation Drug Discovery and Development	A/Prof. Cho Nam-joon	NTU
CRP10			
42	Learning from Bats: From Genomics to Controlling Viral Infection and Combating Cancer	Prof. Wang Linfa	Duke-NUS
43	Peripheral Nerve Protheses-Paradigm Shift in Restoring Dexterous Limb Function	Prof. Nitish Thakor	NUS
44	New Approach to Low Power Information Storage Electric-Field Controlled Magnetic Memories	A/Prof. Chen Jingsheng	NUS
45	Development of Super-resolution and High-sensitivity Optical Nanoscopes	Prof. Hong Minghui	NUS
46	Pure Spin Current and Spin Wave Devices	Prof. Adeyeye Adekunle	NUS
47	Rechargeable High Power Aqueous Lithium-Air Batteries	Prof. Adams Stefan	NUS
48	Controlling Cell-cell Signalling using Synthetic Biomimetic Interfaces	A/Prof. Virgile Viasnoff	NUS
CRP11			
49	Doped Contacts and Heterostructures for Solution-processable Plastic Electronics	A/Prof. Peter Ho	NUS
50	Towards the Reality of 3D Imaging and Display: Development of the World's First Viable Glasses-free Television System	A/Prof. Zheng Yuanjin	NTU
51	A Cutting-edge Silicon based Mid-IR Photonics Platform for Emerging Communications and Sensing Applications	A/Prof. Wang Hong	NTU
CRP12			
52	Next Generation SpinTorque Memories: from Fundamental Physics to applications	A/Prof. Yang Hyunsoo	NUS
53	Space Based Quantum Key Distribution	Dr. Alexander Ling	NUS
54	Hybrid Quantum Technologies	Prof. Christian Kurtsiefer	NUS
CRP13			

S/N	Title	Principal Investigator	Host Institute
55	Optofluidic Nano-cytometer for Virus Purification, Sorting and Quantification as an Assistive Toolkit for Virus Diagnosis	Prof. Liu Aiqun	NTU
56	Next Generation High Performance Transparent conductors for flexible interactive touch devices	Prof. Lee Pooi See	NTU
57	Nanofluidics with Two-dimensional Materials	Dr. Garaj Slaven	NUS
58	Micro-fabricated Ring Carbon Nanotube Electron/ion sources	Prof. Anjam Khurseed	NUS
59	Fiber Medical Devices for Diagnosis of Coronary Artery Disease	Dr. Liu Linbo	NTU
CRP14			
60	Development of Solvent Resistant Nanofiltration membranes for Sustainable Pharmaceutical and Petrochemical Manufacture	Prof. Neal Chung Tai-Shung	NUS
61	"QSYNC": Theory and Experiments of Quantum Synchronization in Trapped Ions and Nano-mechanical Resonators	Prof. Vlatko Vedral	NUS
62	Perovskite Optoelectronics: Multidimensional Perovskites for high performance solution-processed Light Emitting Devices	Prof. Subodh Mhaisalkar	NTU
63	Engineering of a Scalable Photonics Platform for quantum enabled technologies	Dr. Leonid Krivitsky	IMRE, A*STAR
CRP15			
64	Oxide Electronics Beyond Moore	Prof. Thirumalai Venkatesan	NUS
65	Piezoelectric Photonics Using CMOS Compatible AlN Technology for Enabling The Next Generation Photonics ICs and Nanosensors	A/Prof. Lee Chengkuo Vincent	NUS
66	Multi-level and High-fidelity Prints at the Nanoscale	A/Prof. Qiu Cheng Wei	NUS
67	Surgical PhotoAcoustic Nanotechnology (SPAN)	Prof. Liu Bin	NUS
CRP16			
68	High Performance Ceramic Materials and Components by Innovation One-step Forming-sintering Process	Prof. Ding Jun	NUS
69	Two-dimensional Covalent Organic Framework: Synthesis and Applications	Prof. Loh Kian Ping	NUS
70	Novel Integrated Agrotechnologies, Plant Nutrients and Microbials for Improved Production of Green Leafy Vegetables in Singapore	A/Prof. Sanjay Swarup	NUS
71	Imaging-enabled Development for 3D Microelectronics Nanofabrication	Prof. Paul Matsudaira	NUS
CRP17			
72	Green and Sustainable Pharmaceutical Manufacturing via Biocatalysis	A/Prof. Li Zhi	NUS
73	Engineering the Next Generation Ceramic Membranes for Water and Wastewater Treatment	Prof. John Wang	NUS
74	Understanding TERT Promoter Reactivation: Key for Making Cancer Cell Specific Telomerase Inhibitors	Dr. Vinay Tergaonkar	IMCB, A*STAR

S/N	Title	Principal Investigator	Host Institute
75	Studying Zika Virus Pathogenesis and the Development of Therapeutics, In Vitro Cell Culture Model and Mouse Model that Display Various Diseases Phenotypes	A/Prof. Lok Shee Mei	Duke-NUS Medical School
76	Radiobiology Investigations into Cancer Therapy using High Energy Protons	Prof. Soo Khee Chee	NCCS
77	Combinatorial Strategies to Enhance Immunotherapy of Viral Associated Tumours	Prof. Antonio Bertoletti	Duke-NUS Medical School
78	Development of Mosquito-Borne Infectious Disease Diagnostic Devices with New Antibody	Dr. Ichiro Hirao	IBN, A*STAR
79	Integration of Electrically Driven Plasmonic Components in High Speed Electronics	A/Prof. Christian Nijhuis	NUS
CRP18			
80	Targeting Oxidative Phosphorylation for the Rational Development of Sterilizing Drug Combination for Drug-resistant Tuberculosis	Prof. Gerhard Grüber	NTU
81	Low Cost, Low Power, Multi-Wavelength WDM Sources Leveraging Highly Nonlinear Ultra-Silicon-Rich Nitride Devices	Dr. Dawn Tan	SUTD
82	Next Generation Broadband, Compact, Ultra-Sensitive, Real-Time, Tunable Laser Spectroscopy Analyzer	A/Prof. Wang Qijie	NTU
CRP19			
83	Germanium-Based Materials for Silicon-compatible Near-IR and Mid-IR Light Source	A/Prof. Tan Chuan Seng	NTU
84	Nanostructured Bactericidal Metal Oxides for Consumer Care and Self-Disinfecting Surface Applications	Dr. Zhang Yugen	IBN, A*STAR
85	Epitope Dynamics during Flaviviral Entry for Targeted Antibody Discovery	A/Prof. Anand Ganesh	NUS
86	Singapore Initiative in Next Generation T-cell Decoding for Immunotherapy (SiTDecode)	Prof. Nicholas Gascoigne	NUS
87	An Integrative Approach to Build a Microbial Alkaloid Production Platform for Biotechnology	Dr. Ang Ee Lui	ICES/ MERL, A*STAR
CRP20			
88	High-throughput Reprogramming of Regulatory Networks for Cell Conversions and Treating Complex Diseases	Dr Owen Rackham	Duke-NUS Medical School
89	From Genes to Products: Study and Application of Insect Structural Colours for Biomimetic Manufacture	A/Prof. Antonia Monteiro	NUS
90	CogniVision – Energy-Autonomous Cognitive and Attentive Cameras for Distributed Real-time Vision with Milliwatt Power Consumption	Prof. Massimo Alioto	NUS
CRP21			
91	Integrated On-Chip Planar Coherent Light Sources	Prof. Yu Ting	NTU

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92	Spin Orbit Coupling based IntelligencE TechnologY (SOCIETY)	A/Prof. Piramanayagam	NTU
93	Towards On-Chip Topological Quantum Devices	Dr. Bent Weber	NTU
94	A Versatile Singapore-based Proprietary Transgenesis Platform for the Biopharmaceutical and Soft Commodity Sector	A/Prof. Peter Dröge	NTU
95	Deciphering the Molecular Pathogenesis of Enterovirus 71: Towards Effective Treatment Options to Fight Hand, Foot and Mouth Disease	A/Prof. Sylvie Alonso	NUS
96	Unlocking the Secrets of Microbially Influenced Corrosion: From Detection to Control Mechanisms	A/Prof. Scott Rice	NTU
97	Human Umbilical Cord-Lining Derived Induced Pluripotent Stem Cells (CLiPS) as a Universal Source of Cells for Regenerative Therapy for Neurosensory Disorders	Prof. Lim Kah Leong	NTU
98	Recovery and Microbial Synthesis of High-value Aquaculture Feed Additives from Food-processing Wastewater	Prof. Stefan Wuertz	NTU
CRP22			
99	Towards Carbon-Neutral Plastic Bio-Upcycling	A/Prof. Sierin Lim	NTU
100	Differentiating the Fine Reactivity Difference of Functional Saccharides	Prof. Robin Chi	NTU
101	Beyond MOORE – Negative Capacitance Field-effect Transistor for Ultra-low-power Electronics	A/Prof. Liu Zheng	NTU
102	The Next Generation of Spintronics with 2D Heterostructures	A/Prof. Gao Weibo	NTU
103	Deciphering the Mechanisms of RNA Modifications in Plants	Prof. Yu Hao	NUS
104	Geometric Interface Optics: A Synthetic Platform for High-capacity & Low-dimensional Metaphotonics	A/Prof. Qiu Cheng Wei	NUS
105	A Protein Biophysical Strategy for Discovering and Targeting Key Protein Nodes in Cancer	Dr. Tam Wai Leong	GIS, A*STAR
106	Large Area Synthesis and Applications of Atomically Thin Amorphous Materials	Prof. Barbaros Oezyilmaz	NUS
CRP23			
107	Disruptive Fabrication Processes for Scalable Interconnects	A/Prof. Utkur Mirsaidov	NUS
108	Solution-Processed Perovskite Materials for Next-Generation Integrated X-Ray Sensors	Prof. Liu Xiaogang	NUS
109	PACE: Next-Generation IoT Edge Computing through Efficient Software Programmable Accelerators	Prof. Tulika Mitra	NUS
110	Integrating Magnetic Resonance Spectroscopy Imaging Modalities with Metabolic Drug Therapy for Cancer Precision Medicine	Prof. Han Weiping	SBIC, A*STAR
111	On-chip Terahertz Topological Photonics for 6G Communication (TERACOMM)	A/Prof. Ranjan Singh	NTU
112	Deeply Subwavelength Superoscillatory Imaging (DSSI)	Prof. Nikolay Zheludev	NTU
113	Active Topological Photonics towards Robust Lasers and Efficient Sensors	A/Prof. Zhang Baile	NTU

S/N	Title	Principal Investigator	Host Institute
CRP24			
1	Developing hyperspectral OCT as a clinical test to detect neural dysfunction in degenerative diseases of the optic nerve and retina	Prof. Leopold Schmetterer	SERI
2	In-memory Computing based on Multiterminal Memtransistors for Cognitive Internet-of-Things (C-IoT)	Prof. Ang Kah Wee	NUS
3	Non-traditional Computing Enabled Through the Ising Model	Prof. Danner Aaron James	NUS
4	Enhancement of Regenerative Stem Cell Therapy with Extracellular Matrix Proteins and Novel Small Molecules	Prof. William Hwang	NCCS
5	Discovering New Target Space for the Development of Drugs against Malaria Parasites	Prof. Peter Rainer Preiser	NTU
6	Organic Thin-film Energy Sources for Highly Distributed Nanopower Generation	Prof. Peter Ho	NUS