	Awarded Projects for 2024 MTC IRG Grant Call		
S/N	**Title of project**	**Principal**	**Grantee**
1	Metal-Organic Framework-Coated Bacteria for Selective Catalytic Hydrogenation	Prof Yanli Zhao	NTU
2	High-performing Germanium Fibers for Infrared Optoelectronics	Assoc Prof Wei Lei	NTU
3	Metasurface integrated optical skyrmion generator for high-density topological information transfer	Asst. Prof Yijie Shen	NTU
4	Thermal photonics with symmetry-breaking heterogeneous nanostructures for semiconductor thermal transformer	Asst. Prof Guangwei Hu	NTU
5	Additive manufacturing to recycle metal wastes into high performance oxide dispersion-strengthened (ODS) alloys	Yan	NUS
6	Multidimensional hotspot nanoengineering for deterministic plexcitonic strong coupling at single-emitter level	Assoc. Prof Lin Wu	SUTD
7	Photo-Patternable Nanocrystals for Electronic Color Displays	Assoc. Prof. Tan Zhi Kuang	NUS
8	High performance amorphous TeOx based p-FET for oxide CMOS demonstration	Prof Aaron Voon-Yew Thean	NUS
9	Altermagnets: An Alternative Computing Platform for a Sustainable Digital Future	Dr Ho Pin	IMRE
10	Loading Singular Nanostructures with Monolayer Semiconductors for Nonlinear Structured Light Generation	Dr Liu Hong	IMRE
11	Production of modified RNA with novel engineered T7 RNA polymerases	Dr Chew Wei Leong	GIS
12	Stable, Smart, and Recyclable (SSR) Membranes for Sustainable Industrial Separations	Dr Li Bofan	ISCE2
13	Microbial Engineering for Sustainable Furan-Based Polymers	Dr WEI Yifeng	SIFBI
14	Towards “smart uphill walk”: AI powered next-gen enzyme engineering for bioactive ingredient biosynthesis	Dr Chen Xixian	SIFBI
15	Photon Avalanche Nanoparticles with Giant Nonlinearity for Imaging and Precision 3D Printing	Prof Liu Xiaogang	NUS
16	Quantum-polaron nano-thermistor for next-generation IR detections	Prof Liu Zheng	NTU
17	Wide field-of-view and high gain fluorescent-lens system for simultaneous optical tracking and communications	Dr Teo Ee Jin	IMRE
18	Many-Body Interactions in Non-Linear Optics: Quantum Geometry and Beyond	Assoc. Prof Quek Su Ying	NUS

	Awarded Projects for 2024 MTC YIRG Grant Call		
S/N	**Title of project**	**Principal**	**Grantee**
1	Architecture Design and Control Techniques for Transformer-Less Large-Scale Solar Photovoltaic Power Plants	Dr Liang Gaowen	NTU
2	Design and synthesis of two-dimensional materials with strong nonlinear optical properties	Dr DUAN Ruihuan	NTU
3	Decarbonisation of harbour tugboats using big data and artificial intelligence: Operational, tactical, and strategic measures	Asst. Prof YAN Ran	NTU
4	Hybrid Photoacoustic-Ultrasound Imaging System Development for Breast Tumor Diagnosis based on Haemoglobin, Collagen and Lipid Distribution	Dr Zhang Ruochong	A*SRL
5	A facile microwave process for valorising starch waste into value added polyglycitol syrup	Asst. Prof YU Ka Ming, Iris	NUS
6	Non-contact tunable GHz Acoustic Waves for ultrafast microscale Imaging	Dr Santhakumar Sampath	IMRE

7	Tailoring percolated filler networks of 3D printed polymer composites for more effective radio frequency heating and Joule heating	Dr Tran Quyet Thang	SIMTech
8	Leveraging Foundation Models for Aircraft Surface Inspection in Open Environments	Dr Pang Guansong	SMU
9	Tailoring ferroelectric and multiferroic of alloy engineering van der Waals materials towards to multi-functional	Dr. Cai Weifan	IMRE
10	Exploiting the gate-opening effect of 2D switching coordination networks for efficient xylene separation	Dr Shiqiang Wang	IMRE
11	Additive manufacturing of in situ Aluminum-based composites for aerospace applications	Dr Wei Siyuan	IMRE
12	Driving Down Recombinant Protein Production Costs: A Two-Pronged Approach	Dr Prashant Mainali	BTI
13	Accelerating the Development of the Grain Boundary/Interface of the Next-Generation Solid-State Electrolytes using AI-Assisted Computational Modelling	Asst Prof DENG Zeyu	NUS
14	Electrification of the modular catalytic reactor using high entropy materials for biomass valorisation.	Quan	ISCE2
15	Towards high-performance and scalable quantum memories by phonon engineering	Dr Soh Jian Rui	Q.INC
16	Self-Powered Pacemaker-Integrated Transcatheter Aortic Valves for Managing Cardiac Conduction Disturbances Post Valve Replacement	Asst. Prof Yamin Zhang	NUS

	Awarded Projects for 2023 MTC IRG Grant Call		
S/N	**Title of project**	**Principal Investigator**	**Grantee**
1	Multi-Functional Three-Phase Plasmonic Nanoarchitectures for Efficient Photosynthesis of Green Ammonia Fuel from Ambient Air	Asst Prof Hiang Kwee LEE	NTU
2	Development of “All GaN” logic integrated circuits via a 3D integration of AlGaN/GaN HEMTs	Asst Prof Munho KIM	NTU
3	Interlayer exciton Coulomb drag for high-performance transistors	Asst Prof Guoqing CHANG	NTU
4	Energy Efficient Antiferromagnetic Tunnel Junction for Next Generation Green Computing	Dr Pin HO	IMRE
5	Computational Design of AC electrical contact for 2D electronics at THz frequency	Prof Ricky ANG	SUTD
6	Developing a 2D Oxide Material Library for Sustainable Next-Generation Nanoelectronics	Dr. Chit Siong Aaron LAU	IMRE
7	mmWave Photodetectors with high mobility Dirac semimetals	Dr. James LOUREMBAM	IMRE
8	Rational Design and Manufacturing of Photothermal Catalytic Membranes for Water-Energy Nexus	Asst Prof Sergey KOZLOV	NUS
9	Large-Area Self-Powered Smart Window with Enhanced Stability, Safety, and Efficiency	Prof Zhiqun LIN	NUS
10	Composite Thermoelectric Converters with Giant Seebeck Coefficient for Efficient Waste Heat Harvesting	Assoc Prof Chaobin HE	NUS
11	Scalable Manufacturing of Efficient Perovskite-Organic Tandem Solar Module for Urban Integrated Photovoltaic	Asst Prof Yi HOU	NUS
12	On-chip Mode-Locked Lasers using Heterogeneous Integration of Graphene for Scalable Manufacturing	Asst Prof Sanghoon CHAE	NTU

13	Bioinspired synergizing molecular assembly and 3D printing to fabricate nature-like regenerative tissues scaffolds for mandibular reconstruction	Dr FuKe WANG	IMRE
14	Cost-effective production of engineered growth factors for cultivated meat applications: A Phase II Study	Asst Prof Chester Lee DRUM	NUS
15	Chiral Spin-Textured Resonances for Sustainable GHz Nano-Electronics (ChiRes)	Asst Prof Anjan SOUMYANARAYANAN	NUS
16	Transforming Job-Shop Scheduling for Large-Scale and Complex Industrial Manufacturing Applications: A Data-Driven Approach with Graph Transformer and Multi-agent Reinforcement Learning	Asst Prof Wei ZHANG	SIT
17	Material-informed Dual Digital-Twins: Virtual Li-ion Batteries for Wireless Charging in Circular Economy	Asst Prof Hung Dinh NGUYEN	NTU

Awarded Projects for 2023 MTC YIRG Grant Call

S/N	Title of project	Principal Investigator	Grantee
1	Development of Low-Frequency Metamaterials with Negative Magnetic Resistances	Asst Prof Yun YANG	NTU
2	Exploring the properties of quasiparticles in 2D materials via enhanced excitonic resonance for advanced 2D optoelectronics	Dr Zeng WANG	IMRE
3	Engineering sulfonated porous solids for proton conductive membrane	Dr Xiaofei ZHANG	IMRE
4	Covalent/Metal Organic Nanotubes with Well-Defined Channels and Tunable Sizes	Dr Jun ZHU	IMRE
5	Harnessing Momentum-Space Topology in Heterogeneous Nanostructures to Generate Optical Polarization Möbius Strips	Asst Prof Guangwei HU	NTU
6	Unfolding the Future: Harnessing Origami-inspired Shape-Changing Autonomous Robots (OSCAR) for Unprecedented Flexibility in	Dr Hongying ZHANG	NUS
7	Translating on-surface synthesis to non-metallic surfaces for technological applications	Dr James LAWRENCE	NUS
8	Pioneering the Nonvolatile Memory Devices Towards the Limit of Miniaturization through Ferroelectric Graphene Heterostructures	Dr Zihao WANG	NUS
9	A Shark-Inspired Self-Assembly Strategy Towards Size-Scalable Nanolattices for Advanced Materials	Dr Rubayn Zhi Rong GOH	IMRE

10	Towards robust, stable and high-sensitivity magnetic field sensor based on the quantum critical regime of graphene	Dr Junxiong HU	NUS
11	CMOS-compatible monolithically integrated SiC quantum chips	Dr Xiaodong SHI	IMRE
12	Novel high-mobility semimetals for the next generation of magnetic field sensors	Asst Prof Alexey BERDYUGIN	NUS
13	Understanding plasma turbulence in stellarators with the Doppler backscattering diagnostic	Dr Valerian Hongjie HALL-CHEN	IHPC
14	Unlocking the third dimension to create maximally chiral metasurfaces	Dr Eugene SOH	IMRE
15	On-chip angle twistable and gap tunable (ATGT) bi-layer metasurfaces for chirality-sensitive Light Detection and Ranging (LiDAR) beam scanning system	Dr Xuezhi MA	IMRE

Awarded Projects for 2022 MTC IRG Grant Call

S/N	Title of project	Principal Investigator	Grantee
1	Circularly Polarized Ultralong Room Temperature Phosphorescence Based on Amorphous Polymers	Zhao Yanli	NTU
2	An integrated decentralized on-demand on-site hydrogen peroxide production technology	Xu Zhichuan, Jason	NTU
3	Towards human-like autonomy: driver-style-oriented motion control using deep neural networks for personalized	Chen Lyu	NTU
4	Exploring surface phonon polaritons in advanced semiconductors	Wang Qijie	NTU
5	Programmable Additive Filamentation and Layering (FiLa) Manufacturing of Polymorphic Hydrogel Fibers for Soft Ionotronics	Ho Ghim Wei	NUS
6	Sustainable manufacture of valuable chemicals and pharmaceutical compounds through heterogeneous germinal atom catalysis	Lu Jiong	NUS
7	Twisted carbon nanobelts with persistent chiroptical properties for photonics and electronics	Wu Jishan	NUS
8	Strain and orientation engineering of nanopillars for enhanced electromechanical coupling in perovskite oxide thin	Liu Huajun	IMRE
9	3D printing of lignocellulosic materials via natural deep eutectic solvents	Kai Dan	$ISCE^2$
10	Reversing natural selectivity to design more efficient synthetic routes – Enzymatic chemoselective secondary alcohol oxidation	Lim Yee Hwee	$ISCE^2$
11	Economical manufacturing of amino sugars and degradable polymers enabled by catalytic redox cascade	Zhao Yu	NUS
12	On-Chip Electrical Detection of Optical Angular Momentum with Mixed Topological Orders	Dong Zhaogang	IMRE
13	Deep ultraviolet laser fluorescence imaging as a compact microscopy and endoscopy platform for point-of-care clinical insights	Liang Kaicheng	IBB

14	Multielement optomechanical resonators based on chains of silicon nanoantennas for high precision acoustic detection	Ding Lu	IMRE

Awarded Projects for 2022 MTC YIRG Grant Call

S/N	Title of project	Principal Investigator	Grantee
1	Pushing the Limits of Pd-catalysed C–H Functionalisation via Mechanistic Insights from Combined Experimental and Computational Studies For Sustainable Synthesis	Zhang Xinglong	IHPC
2	Cloud-facilitated battery thermal management for connected electric vehicles	Song Ziyou	NUS
3	Physics-informed machine learning modelling and predictive control of nonlinear chemical processes	Wu Zhe	NUS
4	On-surface synthesis of graphene nanoribbons with designer quantum properties for next-generation spintronic applications	Song Shaotang	NUS
5	Solution-processed nanographenes-based triplet–triplet annihilation upconversion materials for optoelectronic applications	Zou Ya	NUS
6	Additive manufacturing of precipitation-strengthened nickel-based superalloys for aerospace applications	Sun Zhongji	IMRE
7	Coaxial wire laser-directed energy deposition of particle-reinforced high-strength aluminum alloy	Tan Chaolin	SIMTech
8	Electrode Design for Chemical Manufacturing from Flue Gas	Tan Ying Chuan	$ISCE^2$
9	Light–driven cascade radical cyclization catalyzed by vitamin B12 for sustainable access to polycyclic scaffolds	Liu Zhennan	$ISCE^2$
10	Dehydrogenation of lignin in a CO2 electrolyzer for anode valorization	Wu Tianze	NTU
11	Sustainable, 3D-printable and Reprogrammable Hydroplastics	Koh Junqiang Justin	IMRE
12	Vat Photopolymerization of Hierarchical Porous Complex Thermoelectrics for IoT applications	Zhang Danwei	IMRE
13	Adaptable Lego-like membranes for expansive organic solvent separations	Li Bofan	$ISCE^2$
14	Bioproduction of High-Value Compounds from Food Waste via Waste Integrated Polymer Extraction and Recovery (WIPER)	Benedict Ryan Lukito	SIFBI
15	Scalable architecture for realising ultrastrong light-matter couplings with superconducting transmon qubits	Huang Ding	IMRE

16	Steep-slope transistors as a platform for fast millimeter-wave and sub-THz detectors	Denis Bandurin	NUS
17	Scalable quantum memories in diamond using defect spins embedded in micrometre-scale beams	Cleaven Chia	IMRE

	Awarded Projects for 2021 MTC IRG Grant Call		
S/N	**Title of project**	**Principal**	**Grantee**
1	Wireless Power Transfer: The Next Generation	Shu Yuen Ron Hui	NTU
2	Surface-Clean Cu2O Nanocrystals with Various Morphologies for CO Electroreduction	Zhao Yanli	NTU
3	Origami AlGaN/GaN optoelectronics for ultraviolet hemispherical electronic eye systems	Kim Munho	NTU
4	All-fibre approach for multi-photon imaging ultrafast laser development	Yoo Seongwoo	NTU
5	Development of more robust and recyclable thermoset polymers	Loh Teck Peng	NTU
6	Phase-Change Optical Nanoantenna Enhanced Single Photon Emitters with Tunability and Chirality	Zhaogang Dong	IMRE
7	Silicon photonic dispersion management systems for error-free transceiver (data center) communication	Dawn Tan	SUTD
8	Fabrication of large size composite structure dysprosium-doped yttria laser ceramics and high-power mid-infrared ceramic laser development	Tang Dingyuan	NTU
9	Untethered Jammable Robotic Structures Driven by Electrochemical Pneumatic Batteries	Wang Yifan	NTU
10	Room-temperature quantum emitters from hexagonal boron nitride	Lu Jiong	NUS
11	Manufacturing radiopharmaceuticals using a selective C-F activation approach	Rowan Young	NUS
12	Additive manufacturing of advanced microtissue-encapsulating device for cellular therapy	Dang Thuy Tram	NTU
13	Development of Sustainable Main-Group Element Catalysts for Industrial Processes	So Cheuk Wai	NTU
14	Revealing Nanoscale Photocatalytic Heterogeneity on 2D and its Composite Materials using Super-Resolution	Zhang Zhengyang	NTU
15	3D Printed Functional Bio-Laser System for Multiscale Neural Cell Therapy	Chen Yu-Cheng	NTU

Awarded Projects for 2021 MTC YIRG Grant Call

S/N	Title of project	Principal	Grantee
1	Pioneering inverse nonlinear metasurfaces for quantum information processing	Xiao XIONG	IHPC
2	Atomically Precise Synthesis of Single-Wall Carbon Nanotube Fragments	Han Yi	NUS
3	Modular bioreactor with nano-needle magneto-transfection technology for end-to-end CAR-T cell manufacturing	Andy Tay Kah Ping	NUS
4	Enhancing Infrared-to-Visible Upconversion by Controlling Exciton Flow in Sensitizer and Annihilator	Wu Mengfei	IMRE
5	ParcelDrone – A Modular, Self-powered Multirotor Approach to Aerial Parcel Delivery	Mir Feroskhan	NTU
6	The Computational Design of Catalysts by Balancing Stability, Efficiency, and Cost-Effectiveness: A Case Study using Fuel Cells	Tej S Choksi	NTU
7	2D Dielectrics for 2D Semiconductors	Lau Chit Siong Aaron	IMRE
8	Freeform Liquid 4D-Printing	Theo Victor Calais	SUTD
9	Improving 3D recognition performance with minimum extra costs for vision guided robotics	Liu Fayao	I2R
10	Direct Laser Writing of Phase-change Semiconductor Microstructures	Lay Chee Leng	IMRE
11	Multi-compositional heterogeneous electrocatalysts for thermoelectric driven hydrogen production	Ice Tee Si Yin	IMRE

Awarded Projects for 2021 AME YIRG Grant Call			
S/N	**Title of Project**	**Principal**	**Grantee**
1	Deep-Learning-Based Digital Twin Method for Personalized Optimization and Health Monitoring of Electric Vehicles	Lyu Chen	NTU
2	Dissecting the Role of Interleukin-11 in Marfan Syndrome	Lim Wei Wen	NHCS
3	Three-Phase Plasmonic Catalysis for Solar Powered Transformations of Air into Commodity Chemicals at Ideal Ambient Conditions	Lee Hiang Kwee	NTU
4	Engineering IgM Antibodies Through Multiscale Modelling and Simulations for Cancer Therapeutics and Detection	Firdaus Samsudin	BII
5	Engineering Effective Flavivirus Like Particles – A Novel Vaccination Approach	Jan Marzinek	BII
6	3D Spatial Transcriptomics with Oblique Plane Lightsheet Microscopy, Adaptive Optics, and 3D Image Analysis	Maurice Lee	GIS
7	Tunable Structured Fabrics for Wearable Assistive Applications	Wang Yifan	NTU
8	Design and Manufacturing of Versatile Soft Electronics with Self-healing Materials	Tan Yu Jun	NUS
9	2D/3D Organic Radical Frameworks	Wu Shaofei	NUS
10	Engineering Block Copolymers via Precipitation-Driven Heterocoupling	Wang Chen-Gang	IMRE
11	Humidity-Resistant Reprocessible Elastomeric “Thermosets”	Goh Simin, Shermin	IMRE

12	Deep Model Compression for Time Series Data Analytics via Knowledge Distillation	Chen Zhenghua	I2R
13	Vitrimers from Waste Plastics (V-WASP)	Li Zibiao	IMRE
14	Multifunctional, Edible Microgels for Industrially Scalable Cell-based Fat Production and Modular Integration into Meat Products	Ng Shengyong	IBB
15	Understanding Excitonic Transport towards Dissipationless Electronics	Wu Jing	IMRE
16	Single-molecule Spin Manipulation towards Next-Generation Quantum Device	Su Jie	NUS
17	Inverse-Designed, Mass-Producible On-Chip Router of Photonic Vortex Quantum Bits with Low-Dimensional Nanomaterials	Hu Guangwei	NUS
18	Machine Learning Techniques for Multi-Objective Electromagnetic Optimization	Zeng Yunjia	I2R
19	Metal-Oxo Clusters as Potent Anti-SARS-CoV-2 Coating Precursors on High-Touch Surface with Rapid Killing Kinetics	Li Ning	IBB
20	Designing Swimming Medical Microrobots Based on Machine Learning	Zhu Lailai	NUS
21	A New Data Communication Paradigm for AI-Orientated Visual Analysis	Chen Zhuo	I2R
22	Polariton Light-Emitting Devices for Optical Communication and Quantum Technologies	Ha Son Tung	IMRE
23	Fiberized Quantum Interferometer for Greenhouse Gas Sensing	Anna Paterova	IMRE
24	Spin Polarized Charge Injection and Detection in Transition Metal Dichalcogenides for Valleytronics Application	Calvin Wong	IMRE
25	Battery-Analogue Electrolyzers for Simultaneous Upstream CO2 Reduction to Feed Stocks and Downstream Upgrading to High-Value Chemicals	Leow Wan Ru	IMRE

	Awarded Projects for 2020 AME IRG Grant Call		
S/N	**Title of Project**	**Principal**	**Grantee**
1	Engineering Single-Atom Catalysts for Wastewater Treatment via Fenton-like Reaction	Liu Bin	NTU
2	Near Infrared Hybrid Systems for Deep Tissue Photoacoustic Imaging	Zhao Yanli	NTU
3	Sniffing-SERS Platform That Recognizes Disease-Related Breath Volatile Organic Compounds	Ling Xing Yi	NTU
4	Heavy Metal-free Sulfur Nano Dots for Luminescence based Applications	Sun Handong	NTU
5	Mid-Far IR Photodetectors by Synthetic 2D Structures	Teng Jinghua	IMRE
6	Exosome Laser Biochip: Nanolasers for Multiplexed Cancer Analysis	Chen Yu-Cheng	NTU

7	Niobium-based Lead-free Piezoelectric Materials with Mobile Lattice Defects and Outstanding Electromechanical Coupling Effects	Yao Kui	IMRE
8	A Simple and Scalable Synthesis of Homogenous N-Glycopeptide and N-Glycoprotein Drugs	Liu Xewei	NTU
9	High-Stability Perovskite Nanocrystals for MicroLED and Electroluminescent Displays	Tan Zhi Kuang	NUS
10	Solution-processed Nanographene Based Distributed Feedback Lasers	Wu Jishan	NUS
11	Engineering of Gut Bacteria Exosome Vesicles for Diet-guided Gastrointestinal Theranostics	Xing Bengang	NTU
12	Simulation-assisted additive manufacturing of gradient high entropy alloys	Yan Wentao	NUS
13	Machine Learning-Based Membrane Development for Solvent Recovery	Jiang Jianwen	NUS
14	Nanoscale Plasmonic Thermoelectric Devices	Joel Yang	SUTD
15	Developing flexible synapse network towards future brain-inspired wearable applications	Wang Xiao	NTU
16	Mass-producible mid-IR metasurfaces for wide-field super-resolution hyperspectral imaging	Luo Yu	NTU
17	Development of Advanced Polymeric Carbon Nitrides as Heterogeneous Photocatalysts for Clean and Sustainable Fine Chemical Manufacturing	Wu Jie	NUS
18	Copper-Catalyzed Asymmetric Aminomethylation of Unsaturated Hydrocarbons to Access Chiral ß-Stereogenic Amines	Ge Shaozhong	NUS

	Awarded Projects for 2020 AME YIRG Grant Call		
S/N	**Title of Project**	**Principal**	**Grantee**
1	Fast-Adapted Neural Networks for Advanced AI Systems	Sun Qianru	SMU
2	Novel sound-absorbing metallic foams with heterogeneous structure via template replication processing	Zhai Wei	NUS
3	Development of an adaptive hybrid particle-continuum molecular mechanics simulation approach for polyelectrolytes in solution	Zhuang Bilin	NUS
4	Atomically precise graphene quantum dots for single photon quantum emission	Mykola Telychko	NUS

	Awarded Projects for 2019 AME IRG Grant Call		
S/N	**Title of Project**	**Principal**	**Grantee**

1	Development of high-throughput membrane technology for the purification of chiral active pharmaceutical ingredients	Chew Jia Wei	NTU
2	High-Throughput Screening of Perovskites for Catalysis by Mechanochemistry and Machine Learning	Soo Han Sen	NTU
3	Artificial Low-Dimensional Germanium Nanolaser Enabled by On-Demand Quantum Strain Engineering	Nam Donguk	NTU
4	2D Photonsieve for DUV Lithography	Teng Jinghua	IMRE
5	Beyond Boltzmann Switching in Ferroelectric FET for Energy-Efficient Computing	Ang Kah Wee	NUS
6	All-aberration-corrected ultrathin lensing system mass-produced by wafer-level photolithography	Qiu Cheng-Wei	NUS
7	Manufacturing of sustainable thermoreversible anisotropic nanocomposite gel (STANG)	Ho Ghim Wei	NUS
8	Photoexcited hot carriers for van der Waals heterostructures	Ricky Ang	SUTD
9	Divergent Synthesis of Enol Ethers and Enolates from Non-Carbonyl Feedstock	Naohiko Yoshikai	NTU
10	Negative capacitance transistor for flexible and wearable electronics	Liu Zheng	NTU
11	Chemistry-Independent, Fluid-Instability-Mediated and Scalable In-Fiber Manufacturing of Multi-Material Structured Particles	Wei Lei	NTU
12	Towards efficient spin-to-charge conversion based on room-temperature-processed oxide interfaces	Ariando	NUS
13	A Universal Approach to Manufacturing Proteins In Vitro	Chester Lee Drum	NUS
14	Big-Data and Quantum Chemical Calculations Aided Design and Manufacturing of Organic Fluorophores for Wash-Free Bioimaging	Liu Xiaogang	SUTD

Awarded Projects for 2019 AME YIRG Grant Call

S/N	Title of Project	Principal	Grantee
1	Developing an integrated bioprocess for microbial production of natural products	Zhang Congqiang, Simon	SIBFI
2	Smart Cellular Laser Array: Towards High-throughput 3D-Phenotyping and Drug Screening	Chen Yu-Cheng	NTU

3	Development of wafer scale abrupt semiconductor hetero-junctions with defect-free interfaces for next generation electronic and photonic applications	Kim Munho	NTU
4	Spectrally-resolved super-resolution microscopy to probe reactivity patterns and catalytic dynamics on single nanocatalysts	Zhang Zhengyang	NTU

	Awarded Projects for 2018 AME IRG Grant Call		
S/N	**Title of Project**	**Principal**	**Grantee**
1	Large-scale and Low-cost Synthesis of Graphene Quantum Dots from Small Polyaromatic Molecules and Applications Thereof	Chen Peng	NTU
2	Magnetic-field assisted one-pot synthesis of Nickle-based nanowire arrays and membranes for high performance electro-catalysts	Fan Hongjin	NTU
3	Mechanical-Electric Power Conversion Based on Chemical Potential Difference	Zhang Qing	NTU
4	Intelligent Photonic Tunable Nanophosphors: Recomposition and Storage of Sunlight for Enhanced Photosynthesis	Xing Bengang	NTU
5	Hybrid Electrolysis for Biomass Refinery and Hydrogen Generation	Li Hong	NTU
6	Hybrid Acoustic Metamaterials for Sustainable Noise Control and Super-resolution Imaging	Fan Zheng	NTU
7	Advanced Manufacturing of wearable microneedle skin patch platforms with 3D printing for transdermal drug delivery	Song Juha	NTU
8	Atomic Layer Deposition of High-Entropy Alloy 2D and 3D Coatings for Multifunctional Applications	Alfred Tok	NTU
9	Waste refrigerants for the generation of fluoroploymers	Rowan Young	NUS
10	Tailoring Magnetic Order at Nonmagnetic Metal-Ferroelectric Interfaces for Low Switching Energy Devices	Ariando	NUS
11	Scalable Growth of Ultrathin Ferroelectric Materials for Memory Technologies	Loh Kian Ping	NUS
12	Spin-orbit torque enhancement with multiferroics for low power magnetic memory	Chen Jingsheng	NUS
13	Next generation ultra-broadband THz spectrometers	Yang Hyunsoo	NUS
14	Photon Upconversion Amplification through Dielectric Microlensing for Improved Photovoltaics	Xiaogang Liu	NUS

15	3D Printing by Continuous Phase Inversion	Michinao Hashimoto	SUTD

	Awarded Projects for 2018 AME YIRG Grant Call		
S/N	**Title of Project**	**Principal**	**Grantee**
1	Tailor-designed synthetic pathway with engineered biocatalysts for biomanufacturing natural ingredient	Chen Xixian	BioTrans
2	Additive Manufacturing for the Fabrication of Immunomodulatory Interface Layers for Medical Implants	Cyrus Beh	MEL
3	Microbial surveillance of “plant factories” in Singapore and the associated mechanisms of human pathogen occurrence on leafy green vegetables	Li Dan	NUS
4	Enabling nanophotonic X-ray free electron lasers based on novel electron-polariton physics	Wong Liang Jie	SIMTech

	Awarded Projects for 2017 AME IRG Grant Call		
S/N	**Title of Project**	**Principal**	**Grantee**
1	MICROPROCESSOR-BASED METHODS OF COMPOSITE CURING	Terry Steele	NTU
2	High-Gain Nanostructured Photonic Composites for On-Chip Waveguide Amplifiers	Tan Mei Chee	SUTD
3	Hybrid and Cold Laser Manufacturing of Functional Micro/nanostructures on High-hardness Transparent Substrates	Hong Minghui	NUS
4	Uncooled two-dimensional focal plane array mid-wave infrared imaging system	Zhang Dao-Hua	NTU
5	Development of High Efficiency Ytterbium Doped Sesquioxide Laser Ceramics and High Power Ultrafast Ceramic Lasers	Tang Dingyuan	NTU
6	Air-Stable Perovskite Quantum Dots: New Synthesis and Wavelength-Tuneable Lasing	Fan Hongjin	NTU
7	Self-Assembled Organic Nanoparticles for Efficient Three-Photon Imaging	Zhao Yanli	NTU
8	Development of a New Family of Electron Acceptor Materials Based on the Buckybowl Motif	Mihaiela Stuparu	NTU

9	Flexible Scintillators for X-Ray Metrology in Advanced Manufacturing	Liu Xiaogang	NUS
10	Soft Modular Adaptive Gripper Capable of Fast Response and Large Force	Zhu Jian	NUS
11	Development of cutting-edge DNA Nanogels for Pharmaceutical and Medical Applications	Li Tianhu	NTU
12	Towards Robotic Dexterous and Bimanual Manipulation in Micro-world	Cheah Chien Chern	NTU
13	3D Printing of Transparent Ceramics by Stereolithography Method Assisted with Hot Isostatic Press Process	Gan Chee Lip	NTU
14	3D-Printed Conductive Polymeric Scaffolds and Cell-Laden Hydrogel Constructs for Neuronal Tissue Regeneration	Lu Wen Feng	NUS
15	DEVELEPMENT OF E-BAND GAN-ON-SI TRANSISTORS	Liu Zhihong	SMART

Awarded Projects for 2017 AME YIRG Grant Call

S/N	Title of Project	Principal	Grantee
1	Ultra-stretchable Graphene-Based Molecular Barriers for Smart Protective Clothing	Chen Po-Yen	NUS
2	Line-scan spectral domain Optical Coherence Tomography at 1.7 µm for ultrahigh speed and resolution in-line coating assessments of pharmaceutical tablets	Chong Shau Poh	NUS
3	Predicting Structure-Property Relationships of High-Entropy Materials via Machine Learning Techniques	Tan Teck Leong	IHPC
4	Enabling Non-Equilibrium Phonon Control at The Nanoscale	Ding Ding	SIMTech
5	ELIMINATE STATIC: NON-CHARGING MATERIALS FOR POWDER PROCESSING & PAT	Wong Shin Yee	SIT
6	Development of a Novel Bioink with 3D Pore-Lattice Microstructures using Microfluidic DrOpleTs (MicroDOTs Bioinks)	Christopher Tostado	NUS

Awarded Projects for 2016 AME IRG Grant Call

S/N	Title of Project	Principal	Grantee
1	Synthesis of Metal and Odor-Free Capsules for Personal Care Applications via Iodide-Mediated Controlled Radical Polymerization	Atsushi Goto	NTU

2	C-C Bond Activation with Photoredox Vanadium Catalysts under Batch and Flow Conditions Towards Advanced Fine Chemicals and Pharmaceutical Manufacturing	Han Sen Soo	NTU
3	MECHANOCHEMICAL APPROACHES TO MAIN GROUP SOLID-STATE PHOTOREDOX SYSTEMS	Felipe Garcia	NTU
4	Through Substrate Via with Embedded Capacitor for 3D Packaging	Tan Chuan Seng	NTU
5	Advanced Autonomous Functional Nanorobots	Richard Webster	NTU
6	Controllable Wetting and Drying of a Sessile Droplet of Solutions and Suspensions	Duan Fei	NTU
7	Novel Porous Materials for High-Efficient CO2 Capture and Catalytic Conversion	Zhao Yanli	NTU
8	Carbene-Catalyzed Selective Protection and Functionalization of Saccharides	Chi Yonggui Robin	NTU
9	Preparation of Renewable Composite Filters for Simultaneous Removal of NOx and Soot Particulate from Marine Diesel Exhaust	Zhang Hua	NTU
10	A New Generation of Hydrogenation Catalysts for Manufacturing of Chiral Drugs: Nickel Catalysts with 10,000 Turnovers	Chi Yonggui Robin	NTU
11	Physic and Scaling laws of electric contact using 2D materials	Ricky ANG	SUTD
12	Contouring-fitting, high thermal conductivity and light weight hybrid fabrics for hypothermia treatment through a hybrid manufacturing process	He Wei	SIMTech
13	Solid-Phase-Based Continuous-Flow Synthesis to Enable On-Demand Active Pharmaceutical Ingredient Manufacturing	Wu Jie	NUS
14	Bioproduction of high-value chemicals from renewable feedstock	Li Zhi	NUS
15	Scaled-Up Production of Valuable Metal-Organic Frameworks	Zhao Dan	NUS
16	Advanced Catalytic Membrane Reactor to Co-produce Propylene & Methane from Propane & CO2	Sibudjing Kawi	NUS

Awarded Projects for 2016 AME YIRG Grant Call

S/N	Title of Project	Principal	Grantee
1	Controlling reactivity through solvents in carboxylic acid hydrogenation	Chia Mei	ICES
2	Hierarchical assembly of colloidal super crystals	Ni Ran	NTU
3	Self-healable semiconductors for next generation wearable sensors	Leong Wei Lin	NTU
4	Plasma based novel radiation sources	Ding Wenjun	IHPC
5	Predicting crystalline interfacial structures in a complex oxide using a genetic algorithm	Cheah Wei Li	IHPC