

## Singapore Science and Engineering Fair 2025

### Results of Final Judging

Project Code	Project Title	Project Award	Video Contest Award
<b>Junior Scientist Category</b>			
JBI002	The Effect Of N-Acetyl-Cysteine Supplementation On The Locomotion And Cognition Of Drosophila Melanogaster	Participation	Participation
JBI003	Lactobacillus As An Effective Treatment To Break Down Linoleic Acid In Drosophila Melanogaster Model Of Alzheimer'S Disease	Participation	Participation
JBI004	Increased Duration Of Heat Treatment Of Vegetable Oils Worsens Alzheimer'S Disease In Drosophila	Participation	Merit
JBI006	Haste Makes Waste: Investigating The Antimicrobial And Antioxidant Properties Of Fruit Peels For Preservation Of Food	Participation	Distinction
JBI008	Investigating The Potential Of Superworms And Bacteria On The Biodegradation Of Plastic	Distinction	Participation
JBI010	Evaluating The Impact Of Nut Shells And Fruit Peels On Scindapsus Aureus Growth	Participation	Participation
JBI011	Rna Therapeutics For Wound Healing In The Treatment Of Diabetic Foot Ulcers	Participation	Participation
JBI017	Investigation Of The Amount Of Liquid Sourdough Starter Bacteria On The Time Taken For The Bread To Mold.	Participation	Participation
JBI018	Investigation Of The Effects Of Different Amounts Of Caffeine On The Number Of Leg Flaps Per Minute Of Brine Shrimp.	Participation	Participation
JBI028	Investigation Of The Effectiveness Of Different Liquid Soaps On The Growth Of E.Coli	Merit	Participation
JBI038	Evaluating Effectiveness Of Aqueous Hand Sanitizers	Participation	Merit
JBI040	Evaluation Of Antibacterial Properties Of Spices	Participation	Participation
JBI041	Saying Bye To Pesticides: Investigating Impacts Of Different Washing Agents Have On Residual Pesticides For Food Safety	Participation	Distinction
JBI043	Investigating Effectiveness Of Eco Enzymes From Fruit Peels Against Commercial Detergent In Stain Removal.	Participation	Participation
JCH002	Using Food Waste To Create An Alternative To Regular Plastic	Distinction	Merit

JCH012	Investigation Of The Effect Of The Brewing Temperature Of Coffee On The Ph Variance	Participation	Participation
JCH013	The Effect Of Flour Type Used On Spread Of Cookies, As Well As Effect Of Cooling Cookie Dough And Addition Of Solids Into Dough On Brittleness Of Cookies	Participation	Participation
JCH017	Efficiency And Efficacy Of Different Nutshell-Derived Activated Carbon In Cleaning Up Oil Spills	Merit	Participation
JCH019	Chasing The Perfect Scoop	Participation	Participation
JCH022	Investigating How Different Types Of Starch Content In Bioplastic Made From Food Waste Affects Properties Of Bioplastic	Merit	Participation
JCH024	Eco-Shield Zero Waste Sunscreen	Participation	Participation
JPH005	Investigation Of The Effect Of Different Types Of Materials On The Shielding Of Alpha Particles Released By Americium-241	Participation	Participation
JPH012	How To Solar Cook While Camping?	Participation	Participation
JPH014	Investigation Of The Effect Of The Length Of The Dipole Antenna On The Signal-To-Noise Ratio (Snr) Of 145 Mhz (Vhf) And 433 Mhz (Uhf) Received Radio Waves.	Participation	Participation
JPH015	Investigation On The Effects Of Design On The Breaking Stress Of A Popsicle Bridge	Participation	Participation
JPH018	Investigating The Effectiveness Of Sound-Absorbing Tiles Made From Textile Waste	Participation	Participation
JPH019	Transforming Banana Plant Waste Into Sustainable Materials For Waste Reduction	Participation	Participation
JPH020	Making More Sustainable Fishing Nets From Kombucha Scoby	Participation	Participation

### Main Category

Project Code	Project Title	Project Award	Special Award
AS001	Birds Of A Feather: Plumage Colour Analysis For Subspecies Assessment Of Locally-Threatened Songbirds	Gold ISEF	
AS002	The Use Of Lion'S Mane Mushroom Extract And Hericenone Is Effective In Ameliorating The Paralysis And Cognitive Disabilities Of Alzheimer'S Disease In Fruit Flies	Participation	
AS004	Co-Culture Of C2C12 Muscle And 3T3-L1 Fat Cells For Realistic Cultured Meat	Silver	
AS007	Importance Of Dead Barnacle Shells As A Habitat In The Upper Intertidal Zone Of The Johor Strait	Participation	SAAS
BE001	Antibacterial Cu-Coated Bone Scaffolds To Reduce Risks Of Implant Failure	Bronze	
BE002	Posture Detection For Geriatric Physiotherapy Application	Silver	
BE003	Smart Stents! 4D-Printing Nitinol With Two-Way Shape Memory Effect For Biomedical Applications	Participation	
BE004	Organ-On-Chip Technologies To Study Vascular Dysfunction In Cardiometabolic Diseases	Silver	
BE005	Posture Detection For Physiotherapy Application	Silver	SAAS
BE008	Enhancing Acl Rehabilitation: Integrated Motivational Dynamics With Multimodal Gamified	Silver	

	Feedback And Cognitive Behavioral Mechanisms		
BE009	Development Of New Programmable Rna Editing Tools	Participation	
BE012	Hollow Shells To Solid Bones: Sustainable 3D-Printed Bioactive Ha & B-Tcp Scaffolds For Enhanced Bone Regeneration	Silver	SUTD (Healthcare)
BE019	Reducing The Toxicity Of Silver Nanoparticles Used In Photodynamic Therapy	Participation	
BE021	Development Of 3D-Printed Millifluidic Bioreactor For The Fabrication Of Personalised Gum (Gingival) Tissue Grafts	Gold	SUTD (Multi-disciplinary)
BI004	Biological And Physical Characterisation Of A Chitosan Hydrogel For Healing Pressure Sores	Bronze	SAAS
BI005	Acetylcholinesterase-Based Detection Of Malathion: A Review Of Optimum Analytical Conditions	Silver	
BI017	Investigating The Mechanisms Behind The Gelation Of Bovine Serum Albumin Hydrogels	Participation	
BM001	High-Throughput Transcriptome Profiling Of Angiosarcoma For Discovery Of Novel Gene Expression Signature Associated With Chemoresistance	Gold	SUTD (Healthcare)
BM002	Investigating The Cytotoxic Properties Of Citrus Fruit Flavonoids	Participation	
BM004	Investigating The Cytotoxic And Antibacterial Properties	Participation	

	Of Soursop (Annona Muricata)		
BM009	Investigating The Role Of Neutrophils And Macrophages In Bronchopulmonary Dysplasia Using Mouse Models	Silver	
BM010	Analysis On The Protein Nutritional Content Of Different Types Of Beancurd Via Kjeldahl Method	Participation	
BM015	Spike Protein Of Sars-Cov-2 Kills Cells By Targeting Fumarase	Gold	
BM017	Enabling Prediction Of Recurrent Acute Coronary Syndrome Using Polygenic Risk Scores	Participation	
BM018	Examining The Effectiveness Of Novel Bdk Inhibitors In Reducing Hcc Proliferation	Participation	
BM021	Interferon Treatment Attenuates The Heightened Procoagulant Platelet Response In Jak2 V617F Mutated Mpns	Participation	
BM023	Generating A Neutrophil Activation Map For Population Health Tracking And Disease Susceptibility Prediction	Merit	
BM024	Ambulatory Blood Pressure Control And Cognition In Patients With Obstructive Sleep Apnea	Silver	SAAS
BM026	Developing An Injury Model For Age-Related Macular Degenerative Disease Using Photodynamic Therapy On Compound 1	Participation	Amgen
BM028	Role Of Nk Cells In Asian Atopic Dermatitis	Participation	

BM029	Revolutionizing Food Safety: Immediate, Direct Identification Of Probiotic Microbes Using Maldi-Tof Ms	Merit	
BM030	Development Of Calcium Supplementation Through Pickering Emulsion	Participation	
BM032	Exploring Food Wastes As A Sustainable Source For Natural Hair Dye Extraction	Participation	
CB001	Characterizing The Differential Glycosylation Pattern Of Leucine-Rich Alpha-2-Glycoprotein 1 (Lrg1) In Various Mouse Models And Cell Lines	Participation	
CB002	Novel Room Temperature Protein Storage Method In Beads To Enable Human-Free Automation In Research And Diagnostics	Participation	
CB003	In Silico Screening For Eukaryotic Rna-Guided Endonuclease Homologues	Participation	
CB004	Exploiting Microbial Genes To Increase Tumour Immunogenicity	Merit	
CB005	Substrate Stiffness As A Modulator Of G-Protein Signalling And Adipocyte Health	Participation	
CB012	Characterisation Of Arctigenin In Chronic Myeloid Leukaemia	Participation	
CB013	Alien: Covenant - Cytoneme Biology Of Polyaneuploid Cancer Cells To Confer Chemotherapy Resistance	Gold	SAAS
CB015	Metabolic Reprogramming By Spike Causes Methyl-Glycation Of Actin	Merit	

CB019	Characterizing Cd200R As A Novel Marker Of Heterogeneous Lyve1 Immune Cell Populations In Mammary Gland Remodelling	Participation	
CB021	Characterization Of Gene Expression Differences In A Model Of Vascular Dementia	Participation	
CB022	Investigating Candidate Germline Factors Expressed In Cancer For Therapeutic Target Discovery	Merit	
CB023	Investigating The Regulation Of Adar2 Editing	Participation	
CH001	Evaluating The Efficacy Of Mixed Metal Hydroxides As Adsorbent For Congo Red Azo Dye	Participation	
CH002	Unravelling Cation Effects On Hydrogel Formation, Characteristics, And Hydrophilicity	Participation	
CH003	Investigation On The Strength And Effectiveness Of Biodegradable Edible Packaging	Participation	
CH005	Synthesis And Dna Binding Properties Of Ruthenium Arene-Amino Acid Reduced Schiff Base Complexes	Participation	
CH007	Development And Characterisation Of Bioplastics Derived From Fermented Rice And Rice Husk: A Sustainable Alternative To Conventional Plastics	Participation	
CH010	Investigation On Uv Absorption Rate Of Plant-Based Dyes And Their Effects On Sunscreen	Participation	

CH013	Economic And Environmental Assessment Of Green Ammonia	Participation	
CH014	Soy Simple Yet Soy Complex: A Multimodal Study Of Interfacial Dynamics And Droplet Morphology In Protein-Based Emulsions	Participation	NUS Chemistry
CH015	Stereocontrolled Synthesis Of Functional Cavitands	Silver	NUS Chemistry
CH016	Enthalpy Change Of Metal-Ethanol Reactions.	Participation	
CH018	Homogeneous Catalysis For Ethanol Conversion To Higher Alcohols	Participation	
CH019	Study Of Enhancing Moringa Oleifera Lam Seeds As Coagulants Using Turmeric	Participation	
CH021	Investigating The Properties Of Magnetised Biochar Derived From Pandanus Amaryllifolius	Bronze	
CH023	An Investigation Comparing The Dust Repellency Of A Natural Compound-Based Coating With Hydrophobic And Oleophobic Properties To A Synthetic Coating	Participation	
CH024	Stability Of Single Oil-In-Water Emulsions Comprising Natural Emulsifiers	Participation	
CH026	Development Of Films Using Carboxymethyl Cellulose And Anthocyanin As A Freshness Indicator In Food Packaging	Participation	
CH027	Simulating The Adsorption Of Signalling Gas	Participation	

	Molecule Using Metal Organic Frameworks.		
CH029	Evaluation Of The Propensity Of Common Vegetable Oils To Self-Heat	Participation	
CH030	Investigation Of Equilibrium Dynamics Of Polysulfide Anions Under Visible Light Irradiation	Participation	
CH033	Investigating Antioxidant Properties Of Different Banana Cultivar Peels At Various Levels Of Ripeness	Participation	
CH034	Entropy-Driven Molecular Feature Selection: A Novel Information-Theoretic Framework For Predictive Solubility Modeling	Merit	SAAS
CH039	Synthesis And Characterisation Of Novel Tetraphenylene-Containing Carbon Nanobelts	Participation	NUS Chemistry
CH042	Investigation Of Varied Silane Coatings' Hydrophobicity Best For The Production Of Vehicle Windows	Participation	
CH044	Co-Doping Of Nickel And Oxygen Onto Polymeric Carbon Nitride For Catalytic Applications	Participation	NUS Chemistry
CH045	Formulation Of A Clear Toner Incorporating Weakly Water-Soluble Actives	Participation	
CH046	The Effect Of Saturated Fatty Acid Content Of Cooking Oil On Quality Of Biodiesel Produced By Transesterification	Participation	
CH048	Enhancing Transdermal Delivery Of Hydrophobic	Bronze	Loreal Dermatology/Cosmetology

	Actives With Lipid-Based Nanocarriers		
CH049	Fabrication And Validation Of A Pani Coated Miniaturised Solid – State Ion Sensitive Ph Sensor	Participation	
CH051	Optimisation Of Ionic Conductivity Of Salt-Based Chitosan-Polyvinyl Alcohol Hydrogels For Biosensor Attachment	Participation	
CH052	High Throughput Experimentation For Multi-Factor Optimisation Of Pharmaceutically Relevant Site-Selective Suzuki-Miyaura Couplings	Bronze	
CH054	Development Of A Novel Portable Reactor For Hydrogen Production Using Gallium And Upcycled Aluminium With Spent Coffee Grounds And Tea Leaves In Seawater	Silver	NUS Chemistry SUTD (Sustainability)
CH055	Enhancing Banknote Security Using Thermochromic Pigmentation And Digital Authentication	Merit	
CO004	Network Clustering Of Drug-Drug Interactions	Participation	SAAS
CO005	Development Of A Novel Diagnostic Tool For Antibody Responses To Vaccines	Gold	
CO007	Innovative Strategies For Emotion Regulation: Integrating Bci And System Dynamics	Silver	
CO008	From Protein To Promise: Design Of Stapled Peptides To Disrupt The Keap1-Nrf2 Protein-Protein Interaction	Bronze	

CO009	Optimus: Exploring A Novel Transformer-Based Approach For Predicting Disordered Protein Conformational Properties From Sequence	Participation	
CO010	(Panda) Protein Analysis For Novel Disorder Prediction Using Attention-Based Architectures	Participation	
CO012	Reviewing The Functionality Of Cryogenic Electron Microscopy With Apoferritin As A Case Study	Participation	
CO014	Examining Mathematical Literacy Determinants: A Machine Learning Approach Using Xgboost And Shap Analysis	Merit	
CO016	Radiomics Extraction And Classification For Neuroblastoma	Participation	
CO017	Boosting The Accuracy Of Cell Type Annotation Predictions Through Deep Learning Multi-Model Ensemble Using Weighted And Soft Voting Approaches	Merit	
CO018	Neuroscience In Math Learning	Participation	
CO020	Pan Flavivirus Antibody Engineering Of Fab Domain In Human C10 Antibody	Participation	
CO021	Enhancing Scrna-Seq Foundation Models With Bayesian Optimization: A Path To Precision In Multi-Omic Integration	Participation	
CO027	Using Ai Prediction Tools To Predict Pam Specificity Of Spcas9 Variants	Participation	

CO029	Predictive Modelling For Growth Of E. Coli Based On Environmental Conditions Of Ph And Temperature	Participation	
CO030	Deephepatoscope: An Ai-Powered Interactive Toolkit For Cell Type Annotation And Spatial Analysis Of Hepatocellular Carcinoma Rna-Seq Data	Gold	
CO032	Machine Learning Identification Of Morphology-Driven Tumour-Infiltrating Lymphocyte Subtypes With Prognostic Relevance In Colorectal Cancer	Participation	
EA001	Discovering Sustainable Methods To Effectively Filter Out Copper From Water Bodies	Merit	
EA003	Investigation Of Varying Fruit Peel Porosity On Activated Carbon'S Oil Absorption Ability	Participation	
EA004	Forever Chemicals Then And Now: Comparative Toxicity Assessment Of Emerging Versus Legacy Pfas On Synechocystis Growth.	Bronze	
EA006	Walkable Southeast Asia: A Comparative Study Between Phnom Penh And Ho Chi Minh City	Silver	SAAS
EA007	Pond Water Analysis Using Precision Ellipsometry	Bronze	
EA009	Investigation On The Effectiveness Of Using A DC Fans Setup To Reduce Classroom Ambient Temperature	Participation	

EA010	Evaluation And Prediction Of Flood Impacts On Urban Traffic Condition Using Full Stack Simulation	Participation	
EA014	Quantification Of Deforestation In Singapore From 2017 To 2024 Based On Sentinel-2 Satellite	Participation	
EE004	Electrochemical Strategies For Effective Algae Growth Control	Participation	Loreal Sustainability
EE009	Use Of Sugar Cane Bagasse Activated Carbon To Treat Azo Dye Polluted Water	Participation	
EE010	Effect Of Electrocoagulation Voltage On Zinc Hydroxides On Absorption Efficacy Of Azo Dyes	Participation	
EE011	Synthesis Of Zn-Doped Tio <sub>2</sub> Photocatalyst With Citrus Peel Extract For Degradation Of Malachite Green Dye	Participation	Amgen
EE014	Effect Of Cu <sup>2+</sup> On The Removal Of Tetracycline And Ofloxacin Via Electrocoagulation	Participation	Amgen
EE015	Synthesising And Comparing The Microplastic Degradation Efficiencies Of Magnetically Removable Bismuth Based Microswimmers	Silver	
EE017	Investigation On The Effectiveness Of A Sponge Comprising Of Spent Coffee Grounds Compared To A Polyurethane Sponge For Dishwashing	Participation	
EE018	Biofluorescence Of Mussel Shells And Its	Bronze	Amgen

	Applications In Water Purification		
EE021	Effects Of Chemical Catalysts On The Conversion Of Co2 And Epoxides Into Cyclic Carbonate	Participation	
EE022	Treatment Of Coconut And Hair Wastes For Applications In Dye And/Or Metal Remediation	Participation	
EE023	Investigating Potential Of Ac Electrocoagulation For Removal Of Microplastics	Merit	
EE024	Scale Model Investigation On The Shape Of Tree Crowns And Layout Of Trees On The Effectiveness For Noise Attenuation	Participation	
EE027	Enhanced Wastewater Treatment And Hydrogen Recovery Via Electrochemical Advanced Oxidation Processes	Participation	
EE029	Developing A Novel Detergent Filter Using Carbon-Based Adsorbents	Participation	
EE030	Plastic Bags As Excellent Oil Adsorbents	Participation	Amgen
EE032	Immobilising Laccase Onto Moringa Oleifera Seeds And Husks As Novel Bioadsorbents For Acetaminophen Removal	Participation	SAAS
EE034	Green Enzyme Engineering: Bioremediation Of Methylene Blue-Contaminated Wastewater Using Hydrogel-Immobilised Enzyme Extract	Merit	

	Synthesised From Spent Mushroom Compost		
EE036	Enhancing The Mechanical And Physical Properties Of Recycled Paper: Effects Of Acetic Acid Pretreatment, Blending Time And Additional Substrates	Participation	
EE037	Glued To Sustainability With Ur-Dad (Used And Recycled Diaper Based Adhesive)	Silver	SUTD (Sustainability)
EE040	Renzycle: Enzyme Based Cleaning System For Recyclable Plastic Food Packaging	Participation	
ES003	Cool Classrooms, Clear Minds: Reducing Heat For Better Focus	Participation	
ES011	Forward Scatter Aircraft Detection With Amateur Radio Network Wsprnet	Participation	
ES012	Performance Study Of Rotated Quadrature Amplitude Modulation (Qam) Signals Over Fading Channels	Participation	
ES014	Deep Reinforcement Learning Ai For Multi-User Allocation In Massive Multiple-Input Multiple-Output (Mimo) Communication Systems	Merit	
ES017	Multiple Transmitter Single Receiver Wifi Sensing Array System For Real-Time Gesture Recognition	Participation	
ES018	Energy Analysis For Data Compression Of Wearable Cardiac Monitoring Systems	Participation	
ES019	Meta-Gramai: Paving The Future For Holographic Metalens Design With Ai Optimisation	Bronze	

ES020	Design And Fabrication Of Low-Profile Low Cost 3D Printed Risley Prism In The X-Band	Silver	
ES021	Adjoint Optimisation Of Multi-Angle Achromatic Metalenses	Silver	
ES023	Flexible Capacitive Touch Sensor Using Kirigami-Inspired Transparent Film Design	Gold	
ES025	Wireless Power Transfer To Aid Energy Harvesting	Participation	
ES026	Research And Development Of Spectrum-Adaptive Light	Participation	
ES027	Exploring The Use Of Matlab To Operate Fpga For Control Of Ultrasonic Transducer Array	Participation	
ES030	Studies Of Gallium Nitride (Gan) Based High Electron Mobility Transistors (Hemts)	Participation	
ES031	Optimisation Of Continuous Development From Flatsat To 3D Cubesat – A Novel Over-The-Air (Ota) Solution	Bronze	
ES035	Deep Learning Based Algorithm For Frequency Estimation From Noisy Signals	Participation	
ES037	Generative Ai For Optical Metasurface Lenses: Optimizing Light Manipulation Through A Fully Ai-Driven Design Framework	Gold ISEF	SAAS
ES040	Symptom Spotter: Using Machine Learning And Robotics For Outbreak Intervention	Participation	
ET002	Optimising Low Frequency Hydrophone Calibration System	Participation	

ET006	Design Of Reconfigurable Intelligent Surfaces For 6G Communication Networks	Participation	
ET011	Design & Development Of Delta Wing With Loitering Capabilities	Participation	SUTD (Aviation)
ET013	Optimizing Laboratory Efficiency And Safety Through Cross-Domain Integration Of Healthcare And Industrial Engineering	Participation	
ET014	Autogenous Healing Of Concrete Using Recycled Cementitious Materials	Participation	JDF
ET017	A Comparative Study Of Cruciform And Annular Parachutes: Evaluating Drag And Stability Performances	Merit	
ET019	Cfd Analysis On The Effects Of Helicopter Downwash On A Payload	Participation	
ET020	Geometric Optimisation Of Lcat Resonators To Aid The Development Of 6G High-Speed Network	Merit	JDF
ET021	Parametric Studies On The Aerodynamics Of A Cruciform Parachute	Participation	SUTD (Aviation)
ET022	Exploring The Potential Of Chatgpt For Predicting Aerodynamic Characteristics Of 2D Airfoils	Participation	
ET024	Developing & Evaluating Optimal Configurations Of Vr Equipment For Tracking And Defence Applications	Participation	JDF
ET025	Seawalls With Retrofitted Rock Pools To Mitigate Wave Overtopping And Seabed Scouring	Bronze	
ET026	Investigating Basic Chemical Reactions Using Acoustic Levitation	Participation	

ET028	Artificial Intelligence-Based Power Demand Forecasting	Participation	SAAS, JDF
ET029	Student Developed Nanosatellite And Its Integration	Bronze	
ET030	Artificial Intelligence Based Power Demand Forecasting	Participation	
ET031	Simulation Of Vortex Rings Colliding With Round Convex Cylinders	Participation	
EY002	Novel Synthesis And Doping Of Mos2/Mil-53 (Fe) Composite For Hydrogen Generation And Storage	Silver	MPA
EY003	Ai-Driven Mosfet Bypass Systems And Computer Vision For Mitigating Partial Shading Losses In Photovoltaic Systems	Participation	IChemE
EY008	Techno-Economic Analysis Of Electrolyser Systems For Low-Carbon Energy Solutions: Modelling, Life Cycle Cost Analysis And Graphical User Interface For Sustainable Hydrogen Production	Participation	IChemE, ECS
EY012	Investigation Of The Effect Of Different Types Of Food Waste On The Energy Produced By A Microbial Fuel Cell	Participation	ECS
EY013	Ecobounce (Energy-Efficient, Clean, Optimised) Trampoline Energy Generator	Gold	SUTD (Cities)
EY016	Development Of Vermicompost-Based Batteries For Sustainable Energy Solutions	Participation	ECS, SAAS
EY019	Generating Sustainable Energy From Food Waste	Participation	

	In Singaporean Households		
EY020	Advanced Photoluminescence Imaging For Tandem Solar Cells (Apitsc)	Gold	
MA001	Square Concatenation	Bronze	SMS
MA003	Canteen Queuemasters: Analysing The Dynamics Of Queue Movement	Participation	
MA004	Behind The Rhythm	Participation	
MA005	Geometric Median	Participation	
MA006	Hexagonal Flow Free	Gold	SMS, SAAS
MA016	Novel Proofs And Algorithms For Range Searchable Encryption	Participation	
MA018	Paper Folding: Extensions Of Gallivan'S Formula	Silver	
MA019	The Investigation Of Epidemic Propagation In Interconnected Communities Using Complex Network Theory	Participation	
MA020	Investigation On The Convergence Properties Of A Markov Chain	Participation	SMS
MA021	Analyzing Convex Plane Curves With Support Function	Gold	SMS
MA022	Queueing Theory: Optimisation Of Queue Times At Grocery Stores	Participation	
MA023	Exploring The Weak Steinberg'S Conjecture	Participation	
MA024	Minimal Gap Between Arithmetic Means Of Sampled Data	Participation	
MA025	Probabilistic Analysis Of The Chromatic Polynomial	Participation	SMS
MA026	Make24: Elegant Elementary Bounds For A Numbers Game	Gold ISEF	SMS
MA029	Investigating The Maximum Volume Of 3D	Participation	

	Shapes Inscribed In A Sphere		
MA033	Modelling The Rc4 Cipher As An Integer Quadratic Programming Problem	Bronze	
MA035	Almost-Regular Hamiltonian Graphs	Participation	
MA037	Solving N-Tuple Inverse Pythagorean Equations	Participation	SMS
MA038	Effect Of Sg Green Plan 2030 On Singapore'S Carbon Emission	Participation	
MA040	Generalizing The Equation Of The Steiner Inellipse In The Complex Plane Plane With Marden'S Theorem	Participation	
MA041	Generalising Partial Fractions Of Certain Types Of Rational Functions And Cyclotomic Factors	Participation	
MI003	Optimising Antibiotic Efficacy: Investigating Synergistic Enhancement With Edible Wild Mushroom Extracts	Participation	
MI007	Comparing The Antibacterial Properties Of Plant Extracts For Wound Healing	Participation	
MI012	Novel Thermostable Phage-Nanoparticles Delivered By Hydrogel: Small But Mighty Weapons Against Multi-Drug Resistant Staphylococcus Aureus	Gold	SSMB
MI016	Assessment Of Commercially Available Hand Sanitisers And Their Efficacies In Inhibiting Bacterial Growth	Participation	
MI017	Functional Characterization Of N-Terminal And C-Terminal Domains Of Sars-Cov-2 Nucleocapsid With	Participation	

	Specific Monoclonal Antibodies		
MI020	Investigation Into The Antibacterial Properties Of Essential Oils Containing Monoterpenes And Top 2 Synergies Against B. Subtilis As Possible Treatment For P. Acnes	Participation	
MI024	The Antimicrobial Power Of Herbal Plants: An Investigation On A Possible Solution To Antibiotic Resistant Escherichia Coli (E.Coli)	Participation	SAAS
MS004	Mycelium As A Potential Sustainable Construction Material	Participation	
MS005	Investigating Biobased Cellulose Waste Materials As Sustainable Oil Absorbents	Participation	
MS006	Influence Of Nh3 Annealing On The Structural And Optical Properties Of Mos2	Participation	
MS007	In-House Production And Modification Of Biocellulose	Bronze	
MS012	3D Printing Sustainable And Self-Healing Wearable Electronics From Green Materials	Gold	
MS014	Recycling Titanium Metal For Sustainable Additive Manufacturing	Participation	NUS Chemistry
MS016	Development Of A Novel Method For Synthesizing Pectin Hydrogels	Silver	
MS020	Increasing Durability Of Sustainable Fungal-Based Materials Using Polyphenols From Black Tea	Participation	
MS021	Microwave-Assisted Synthesis,	Participation	

	Characterizations And Variations Of La-Doped Camno3		
MS022	Luminasand: Harnessing The Optical Potential Of Silicon Dioxide With Focused Laser Beam	Gold ISEF	SAAS
MS027	Riceballs: Multi-Purposed Sustainable Carbon-Silica Composites Synthesised From Laser-Annealed Rice Husk Ash	Silver	
MS028	Development Of Swnt-Based Ergosterol Nanosensors For Early Fungal Infection Detection In Plants	Participation	
MS031	Dinoflagellate-Based Biohybrid Mechanolumiscent Transducer For Photonic Communication	Participation	
MS033	Nanolithography Based On Scanning Probes	Participation	NUS Chemistry
MS034	Green Synthesis Of Ferromagnetic Metal-Doped Tio2 Nanoparticles Using Spent-Coffee-Grounds For Efficient Degradation Of Methylene Blue Dye	Bronze	
MS035	Synthesis And Characterization Of Polystyrene Coated Magnetic Nanobeads For Wastewater Purification	Participation	
MS036	Chemically Controlled Opto-Electronic Artificial Neural Networks	Participation	NUS Chemistry
MS038	Shell Shock: Harnessing Crab Shells And Graphene Oxide For Sustainable Energy And Breath Sensing Applications	Bronze	
MS039	Assessing And Recycling Nitinol Powders For	Participation	

	Sustainable Additive Manufacturing		
MS041	Sustainable And Economical Tactile Sensor For Parkinson'S Disease Diagnosis	Merit	
MS042	A Stretchable And Conductive Pan-Ag Material For Soft Electronic Applications	Silver	
MS043	Investigating The Physical Characteristics Of Carboxymethyl Cellulose Hydrogel Using Eichhornia Crassipes Extract	Participation	
MS045	Detergents As Cleaners And Surface Protectors	Participation	
MS050	3-In-1 Functionalities Of Recycled Polystyrene For Safer Pedestrian Walkways	Silver	SUTD (Cities)
MS051	Lumiteng: A Novel Self-Powered Mechanoluminescent Triboelectric Nanogenerator For Dynamic Multidirectional Pressure And Strain Sensing	Silver	
MS055	Manufacturing Gecko-Foot Based Nanostructures	Participation	
MS056	Organic Integrated Passive Cooling Paint For Energy-Free Temperature Regulation	Bronze	
PH005	Investigation On The Effect Of Acoustic Waves On Behaviour Of Fires	Participation	
PH007	Evaluation Of Running Shoes Using Plantar Insole Sensors And Mechanical Tests	Participation	
PH009	Electric Field-Induced Strain Tuneable Spiking	Participation	

	Spin Hall Nano Oscillators		
PH011	Investigating The Hyperuniform State By The Scaling Of Structure Factor In Spinodal Decomposition	Silver	
PH014	The Dynamics Of A Paul Trap	Participation	
PH015	Tailoring 3D Curvature At Micron Scale Using Optical Lithography	Merit	
PH016	Anisotropic Elastohydrodynamics Of Paper Due To Moisture Absorption	Silver	
PH020	Characterization Of Fluidic Jet Refraction Through An Inclined Mesh	Bronze	
PH023	Metasurfaces Detecting Orbital Angular Momentum And Polarizations	Participation	
PH024	Novel Neutron-Driven Cyclic Reaction In The Formation Of Polonium-210	Bronze	
PH026	Determining Rubidium Number Density By Measuring Faraday Rotation Near Resonance	Participation	
PH029	Blow To Spin! : An Analysis Of A Wind-Powered Top	Participation	
PH030	Genetic Algorithm Optimization Of Space-Time Metasurfaces For Harmonic Beam Steering And Backscattering Reduction	Participation	
PH032	Digital Analysis Spectrometer	Participation	
PH035	Molecular Multilayers Studied By Two-Beam Precision Ellipsometry	Gold	
PH037	Designing More Effective Sound Barriers	Participation	

PH038	Experimental Investigation Of Factors Affecting Acceleration Of Water Bottle Rocket At Lift-Off	Participation	
PH041	Magneto-Optical Effects In Solutions Of Nanoparticles	Participation	
PH042	Magnonic Nano Ring Resonator For Neuromorphic Computing	Participation	SAAS
PH044	Modelling The Hydrogen Molecule (H <sub>2</sub> ) With Quantum Circuits	Participation	
PH046	Magneto-Impedance Spectrometer For Rotating Magnetic Nanoparticles	Silver	
PH048	Investigation Of Ph-Dependent Variations In Ovalbumin In Vitro Using A Custom-Built Dynamic Light Scattering System	Participation	
PH049	Investigation Of Multistate Polarisation In Aluminium Scandium Nitride (Al <sub>0.7</sub> Sc <sub>0.3</sub> N) For High-Density Ferroelectric Memory Devices	Bronze	
PH050	Enabling 3D Nano-Printing With An Upcycled Blue-Ray Optical Pickup Unit	Participation	
PH051	Investigation On Diamagnetic Levitation Of Graphite Sheets	Participation	
PH055	Magneto-Optical Absorption Of Hot Sodium Vapor	Bronze	
PH057	Optimization Of Space Solar Power Satellite Constellation For Electric Air Transportation	Participation	
PS001	Effects Of Seed Priming With Different Concentrations Of Calcium Chloride On The Germination Of Ipomoea	Participation	

	Aquatica (Kang Kong) And Brassica Rapa Ssp. Chinensis (Nai Bai) And Brassica Rapa Var. Parachinensis (Choy Sum)		
PS003	Investigating The Effects Of Vermicompost And Bokashi Compost On Beta-Carotene Content Of Basil	Participation	
PS006	Investigating Optimum Condition For Spirodela Polyrhiza To Yield Highest Nutrient Content	Silver	SAAS
PS007	Effects Of Rb Intensity Ratio On Growth Parameters	Bronze	
PS008	The Study Of The Development Of A Lettuce Floating Platform	Participation	
PS012	Nvestigation On The Effects Of Different Wavelengths Of Led Light On Growth Of Nai Bai	Participation	
PS013	Investigating The Effects Of Environmental Conditions On The Physiological Stress Experienced By Two Urban Tree Species, Flacourtia Inermis And Syzygium Myrtifolium, Using Chlorophyll Fluorescence	Participation	
PS014	Investigating The Effects Of Different Surface Structures On Growth Of Algae Biofilm	Merit	
PS015	Characterising Root Architecture Responses To Phosphate Deficiency In Arabidopsis	Silver	
PS017	Increasing Concentration Of Butyrates In Microgreens	Merit	
PS018	Evaluation Of Growth Traits In Choy Sum And	Participation	

	Kailan Exposed To Cosmic Radiation		
PS020	Urban Glow: Investigating Leaf Fluorescence Under The Stress Of City Life	Silver	
PS022	Evaluating Vitrification Methods In Cryopreservation Of Lepisanthes Amoena Embryos	Participation	
PS023	Harnessing Non-Destructive Edna Detection Methods For Understanding Plant-Pollinator Relationships	Silver	
PS024	Investigating The Effect Of Black Soldier Fly Frass On Nutritional Content Of Red Spinach	Participation	
PS026	Investigating The Effects Of Spent Coffee Grounds And Used Black Tea Leaves On The Nutrition Content Of Microgreens	Participation	
PS028	Investigating The Effects Of Copper And Lead Stress On The Growth Rate And Photosynthetic Efficiency Of Aquatic Species Pontederia Crassipes.	Participation	
PS030	Assessing The Allelopathic Effects Of Lemongrass (Cymbopogon Citratus) Extract On The Germination And Post-Germination Growth Of Mung Bean (Vigna Radiata) Seeds	Silver	
PS031	Investigating How Indigenous Microorganisms (Imos) Taken From The Rhizospheres Of Different Plants Affect The Rate Of Crop Plant Growth	Participation	

PS032	Cost-Effective Microalgae Cultivation For Aquaculture: Evaluating Plant Fertilizers As Alternative Culture Media	Participation	
RO001	Ai+Robot: Intelligent Robot For Smart Cities And Smart Homes With Deep Learning And Sensor Fusion	Silver	SUTD (AI)
RO005	Hear Me Out (& Think): Maestro, A Multimodal Agentic Model With Efficient, Synergistic Text-Reasoning Optimisation Framework	Gold ISEF	
RO007	Using Multimodal Language Models To Analyse The Demographics Of Users Who Engage With Fake News Of Different Contexts On Instagram	Participation	
RO008	Development Of A Low-Cost Unmanned Ground Vehicle For Campus Security	Participation	SUTD (AI)
RO010	Ai-Care: Ai-Powered Educational Games For At-Risk Learners: Promoting Cognitive And Affective Well-Being	Participation	
RO013	An Observation Is Worth 4 Words: Image Patching For Efficient Subgoal Navigation In Partially Observable Environments	Silver	SAAS
RO014	Intelligent Camera For Queue Analysis In Local Food Centres	Participation	
RO016	Theoretical Modelling And Experimental Construction Of A 3D Passive Dynamic Quadruped Walker	Bronze	
RO018	Think Outside The Bot: Automating Evaluation Of	Gold	

	Creativity In Llms For Physical Reasoning With Semantic Entropy And Efficient Multi-Agent Judge		
RO020	Audio Analysis Of Body-Worn Camera Footage To Distinguish Between Firearm And Taser Discharges	Participation	
RO022	Improving Semantic Segmentation Performance On Occlusions Using Attention Mechanisms And Synthetic Datasets	Participation	
RO023	Deep Generative Models For Conditioned Molecule Generation	Participation	
RO024	Using Machine Learning To Conduct Eda On Cancer Survival	Participation	
RO025	Reinforcement Learning Model For The Tracking Of Unmanned Aerial Vehicles	Participation	
RO026	Clod-Pcb: Clustering For Low Label Object Detection In Automating Printed Circuit Board Analysis	Participation	
RO027	Analysis Of Sentiment In Adolescent Text Messages Using Machine Learning	Participation	
RO028	Feature Guided Activation Additions For Improved Model Steering Vectors	Bronze	
RO036	Modular Multi-Mission Aerial Assistant For National Security	Participation	
RO039	Computer Vision For Analysis Of Scanning Electron Microscope (Sem) Of Integrated Circuits	Participation	

RO040	A Graph Convolutional Model With Skip Connections For Passenger Volume Prediction At Bus Stops	Participation	
RO042	Personalised Learning: Leveraging Machine Learning To Assist Junior College Students In Learning Mathematics	Participation	
RO045	Solving The Green-Heterogeneous Vehicle Routing Problem	Merit	
RO046	Si4Au: A New Ai Based Noise Cancellation Solution	Participation	
RO047	From Pixels To Profile: Automated Multi-View 3D Head And Neck Reconstruction For Remote Medical Diagnostics From Selfie Images	Silver	SUTD (Multi-disciplinary)
RO048	Query Me Maybe: Optimizing Sql Injection Detection Methods With Machine Learning And Ai Solutions	Participation	
RO049	Automated Detection Of Unknown Drone Rf Signals Using Cnns For Spectrogram Analysis	Participation	
RO050	Sharing Is All You Need: Novel Orientation-Sharing Algorithm For Enhanced Image Reconstruction In Single-Particle Imaging	Silver	
SS001	Fooling Facial Recognition Systems And Mitigation	Participation	
SS002	Investigating The Impact Of Varying Base Case Values On The Computational Efficiency Of Strassen'S Matrix Multiplication Algorithm	Participation	
SS005	From Data To Rules: Applying Machine	Bronze	

	Learning To Cellular Automata		
SS007	What'S Under The Hood? A Novel Vulnerability Scanner For Kernel Drivers	Merit	
SS008	Depth, Thermal & Rgb-Segmented Silhouette Imaging In Human Pose Estimation For Activity Monitoring	Merit	
SS011	Comparing Effectiveness Of Note-Taking In Mixed Reality Against Digital And Physical Note-Taking During Educational Excursions	Participation	
SS012	Novel Approaches To Content Moderation Of End-To-End Encrypted Images Using Perceptual Hashes	Participation	
SS014	Alfredo: Agentic Llm Framework For Code Deobfuscation	Participation	
SS015	New Frameworks For Analysing Security-Efficiency Tradeoffs In Range Searchable Encryption	Merit	SAAS
SS016	App Development To Facilitate Communication For The Hard Of Hearing	Participation	
SS017	Uncertainty Quantification In Large Language Models In Math Question-Answering	Participation	
SS019	Lidernet: A Lightweight Inertial Dead Reckoning Network	Gold ISEF	
SS020	Creation Of A Rhyming Dictionary Based On Standard Southern British English Pronunciation	Participation	
SS022	Leveraging Bayes Theorem For Enhanced Automated Red-Team	Participation	

	Operations Using Mitre Caldera		
SS025	Key Recovery In Password-Based Aes-Gcm With Partitioning Oracle Attacks	Participation	
SS027	Evaluating The Effectiveness Of Acoustic Features On Accent Differentiation	Participation	
SS028	Hybrid Quantum Computing And Machine Learning Algorithm To Predict Drug Bioavailability Based On Drug-Microbiota Interactions	Participation	
TA001	Automated Low-Fidelity 3D Neck Reconstruction From Selfie Images For Medical Examinations	Participation	
TA005	Chordiff: Choir Vocal Synthesis Via Diffusion Model	Participation	
TM006	Synthesis Of Moringa Oleifera Silver Nanoparticles For Anticancer Properties	Participation	SAAS
TM007	Harnessing Mir-138 Modulating Agents To Combat Glioblastoma Multiforme (Gbm)	Participation	
TM008	Investigating The Application Of Metabolic Labelling In Immunoassay Detection Of Staphylococcus Aureus	Bronze	
TM009	Beyond The Usual Suspects: Identifying Causal Variants Underlying Neuropathic Pain Outside Of The Scn Genes	Gold	
TM010	Optimisation Of Machine Learning Models For Early Diabetes Detection Using	Participation	

	Accessible Health Indicators		
TM012	Explainable Diagnosis Of Migraine Via Deep Learning Through The Use Of Eeg Data	Bronze	
TM016	Investigating Surface-Enhanced Raman Spectroscopy (Sers) For Rapid Liquid Analyte And Pathogen Analysis	Participation	