

Singapore Science and Engineering Fair 2023 Results of Preliminary Judging

Project Code	Project Title
Junior Scientist Category	
JBI001	Investigation of the effects of hydrogen peroxide on the growth of algae
JBI002	Investigation of the effect of time in contact with the floor on the growth of bacteria
JBI003	Investigating The Synthesis of Starch-Based Bioplastics
JBI004	Biosorption of Zinc and its effect on the growth of Chlorella
JBI005	The effect of vegetable peels as filters of water contaminated by face masks
JBI006	Lower Energy Consumption for Seawater Pre-Treatment by using Coagulation and Ceramic Membrane Filtration
JBI008	Thanaka - Nature's Sunscreen
JBI009	Comparing Effectiveness of Nutrients found in Different Home-made Compost on Plant Growth
JBI011	Investigating The Release of Methane Gas From Food Waste
JBI012	Investigation of the effect of the exposure time of corona discharge on the percentage of area of bacterial growth
JBI014	Investigation of Nitrogen-Potassium based liquid fertiliser in the growth of broccoli microgreens.
JBI015	Effect Of The Presence Of Different Metal Nitrates On Petroselinum Crispum And Tenebrio Molitor
JBI016	Evaluating the antibacterial properties found in common spices
JCH001	Chocolate for Diabetics
JCH003	Efficiency of Selected Aquatic plants in Phytoremediation of Barium-contaminated water
JCH004	Optimisation of Electrical Production in Biophotovoltaic Fuel Cells Using Household Materials
JCH005	Investigation Of The Efficacy Of Cost-Effective Soil Electrode Microbial Fuel-Cells (MFCS)
JCH006	Removal of barium ions from water using phosphate rich food products
JCH008	Rust Removers
JCH009	Effect of Different Soil Types on Voltage Generated by Soil Battery
JCH011	Investigating the effectiveness of zero waste sunscreen
JMA001	Grasshopper: A case study in vectors and number sequences
JPH001	The analysis on structural integrity of various basket weaving patterns
JPH004	Investigation of how the angle of light hitting a solar panel affects the voltage output of the solar panel
JPH005	Investigation of the effect of distance on the pressure in a pipe
JPH007	Sunny side up
JPH008	Investigation on Treatment Methods on Bio-friendly Materials for Optimal Oil Absorption
JPH009	Investigation of the effect of horizontal separators on the sheer stress of a sand tube
JPH010	Suitable Materials To Make Food Containers More Eco-Friendly
JPH012	Investigating the effectiveness of recycled materials in sound-absorbing panels

Project Code	Project Title
Main Category	
AS001	Investigating the effect of food processing on the digestibility of protein in the different types of tofu
AS003	Analysis of forebrain cellular activity in experimental neuropathic pain
AS004	Ecological footprint of industrial vs smallholder oil palm plantations
AS005	An investigation of the effectiveness of administering aspartame mixture to <i>Hermetia illucens</i> to create a viable model for Obsessive Compulsive Disorder
AS006	Investigating the effect of fermented food on the nutrient content of Black Soldier Fly Larvae
AS007	Reliability of coral species identification for traceability in the aquarium trade
AS009	Active matter cytometry for high-resolution sizing and sorting of zebrafish larvae
AS010	Anti-Inflammatory Effects of Mushroom Extracts on Gut Health in the Zebrafish Model
BE001	Ex vivo and real time mapping of gastric cancer using an image-guided Raman spectroscopy probe system
BE005	Detection of HPV 16 and HPV 18 virus using CRISPR-12a and lateral flow assay
BE007	Wireless Charger of Implanted Devices
BE008	Plasmonic Nanostructures Based Surface Enhanced Optical Sensors
BE012	Evaluation of novel ex vivo protein engineering method for therapeutic purposes: Modulation of cellular surfaces with anti-CD30 receptor
BE013	Investigating the effectiveness of treating collagen scaffold to ensure safety for advanced orthopaedic therapy
BE014	Investigating the encapsulation of N-acetylcysteine in PLGA nanoparticles and its effectiveness as an antibacterial agent
BE015	Development of an automated virtual reality eye testing system for clinical applications
BE017	Nanoparticles Are At-track-tive: A Novel Approach to Labelling Cells of Interest with Magnetic Nanoparticles for High Clarity Tracking and Imaging
BE018	Shielding-Free Signal Noise Suppression in Portable Low-Field MRI
BE019	Protein-based Biodegradable Drug Carrier for Controlled Release of Hydrophobic Compounds
BE020	Evaluation of a novel ex vivo protein engineering method to modulate cellular surface with anti-CD19 receptor, for therapeutic purposes
BE021	Evaluating the compatibility of modified ribonucleotides with automated RNA biosensor generation
BE022	Low Dose, High Accuracy: Using Deep Learning to Enhance 3D Tomography
BE023	Analysing Gait Patterns of Parkinson's Disease patients to predict Freezing of Gait (FoG) using Machine Learning Algorithms
BE024	Qualitative Cardioscopic Analysis of Tricuspid Valve Apparatus in a Semi-Pulsatile Fluid Dynamic Model
BE026	In Vitro Hemodynamic Assessment Model For Implantable Tricuspid Valve In a 3D Printed Human Heart with fluid dynamic physiology in cardio-pulmonary bypass state
BE027	Formulation of Antimicrobial Protein-based Hydrogel for Wound Healing
BE028	Gelatine-Tannic Acid Multilayer Microcapsules
BE029	An Intelligent System For Surgical Tools Checking, using Vision and Deep Learning
BH003	EEG Hyperscanning for Objective Assessment of Group Collaboration and Creativity
BH006	A comparison of the effect of goal setting and positive feedback on students aged 14-15 doing pull-ups in 30 seconds.
BH008	Cognitive Workload Assessment Using Scalp Brain Signals (EEG)
BH012	Students' Perceptions And Preferences Towards Novel Meats

Project Code	Project Title
BH013	Fighting Fake News: Defining, Determining, and Dealing with Deliberate Online Falsehoods in Singapore
BH016	CREATE: Do more creative people adapt better?
BH017	Neurocognitive Functioning and School Performance in Students With Special Education Needs
BH019	EEG-Based Evaluation of Music's Influence on Learning and Attention Performance in Students
BH021	Young people's preferences in movies: Evaluating the effectiveness of movie ratings
BH026	Games in between lessons? Investigating effects of online gaming on students productivity.
BI001	Enhancing in-house Biocellulose Production and Application
BI002	DNA-binding properties of ruthenium arene oxalato complexes with monocarbonyl analogues of curcumin
BI004	The Synthesis and Use of Animal Hair (AH) and Activated Carbon (AC) as Effective and Reusable Biosorbents for Oil Spills
BI005	Enhancing protein antimicrobial properties with benign additives
BI006	Delaying the degradation of Eruca vesicaria and tofu using Mangifera indica seeds
BI007	Sensitisation Profiles of House Dust Mite-allergic subjects using an Allergen Microarray Platform
BM003	Elucidating the mechanisms of HDAC7 in promoting glioblastoma proliferation and invasiveness
BM004	Molecular Dissection of Inflammatory Signals in Acute Lung Injury
BM005	Reduction of Cooked Rice Digestibility Using Water Soluble Fibres
BM007	Informatic Molecular Study and Evaluation Method Development of Herbal Tea
BM008	Understanding Glioblastoma Heterogeneity Through DDIT3 and CD81
BM009	Characterisation of LRRK2 mutations in Asian Parkinson Disease patients
BM012	Elucidating the function of MAMDC2 in Head and Neck Squamous Cell Carcinoma
BM015	A CRISPR-Cas12a Based Ultrasensitive Detection Assay for Human Papillomavirus (HPV)
BM016	Protein Tyrosine Phosphatase 4A2 in antiviral innate immunity
BM017	Examine the association of ABCA6 and ABCA9 lipid transporter expression with lipid profiles in the placenta
BM019	Investigating the association between antenatal mosquito-borne viral infections on pregnancy and child outcomes in Singapore
BM021	Tuning T-lymphocytes to improve wound healing
BM024	A Retrospective Colectomy Study on Post-operative Drain Use and Complications
BM030	Screening for genetic targets of immune evasion in colorectal cancer
BM031	Using mouse pancreas tissue slices for functional studies of alpha cells
BM032	Evaluation of Genetic Risk Scores for Predicting Future Coronary Artery Disease Risk in Children
BM033	Development of Small Molecules to Improve Anti-Tumour Immunity in Colorectal Cancer
BM035	Innovative Anti-Cancer Vaccine Design: A Novel Prioritisation Framework For Neoantigen Shortlisting
CB001	Investigating the effect of Branched Chain Hydroxy Acids in HCC cell growth
CB004	Characterising the Role of VHZ Phosphatase in Cancer Development
CB005	Development of New Technologies for Precision Genome Engineering
CB006	Study of Single Polymer Dynamics in an Elongational Flow and its Potential Implications on Viral DNA Ejection in T4 Bacteriophage
CB007	Co-expression of nucleocapsid (NP) and membrane (M) proteins of SARS-COV-2 in mammalian cells and probing with existing specific monoclonal antibodies.

Project Code	Project Title
CB009	Functional Characterisation of Adenylate Cyclase 3 (ADCY3) Mutations Associated with Monogenic Obesity
CB014	Design of PCR Test Kit for the Detection of E. coli, Betalactamase Gene and Bacillus Species in Water Sources
CB016	Characterization of Klebsiella Pneumonia phages for Phage Therapy
CB018	Optimization of logic gates for one-step detection of microRNAs via Split loop-mediated isothermal amplification (Split-LAMP)
CB019	How the Spike Protein of SARS-CoV-2 Reprograms Cellular Metabolism and the DNA Damage Response
CB020	Characterisation of Subcellular Localisation of Nitrated Synuclein in Killifish Brain
CB022	Developing an Optogenetic O-GlcNAc Transferase for Single Protein O-GlcNAcylation in Cells
CB026	Evaluation of Pluripotency Markers on Induced Pluripotent Stem Cell Differentiation
CH004	Converting Cl- to Bactericidal HOCl by Zn/Cu Core/Shell Particles and their applications
CH005	Interactions between polyethylene and emerging organic contaminants, and its applications: adsorption in different mediums and effect of aging
CH007	Deep Molecular Dreaming of Next-Generation COVID-19 Drugs
CH008	Investigating Photocatalytic Activity of Carbon-Doped TiO ₂ in the Treatment of Dye-Containing Wastewater
CH009	Efficacy of Organometallic Zinc Catalysts on the Conversion of
CH010	Investigating the Binding of Rhenium Complexes to Heptapeptides
CH011	Pyrolysis of Single-Use Plastics with UiO-66-M Catalysts for the Production of Fuels
CH012	Diruthenium complexes incorporating Ar-BIAN ligands and chalcones with phenyl and anthracenyl units: Synthesis and characterisation
CH013	DNA binding properties of Chromium complexes containing reduced Schiff base ligands
CH016	Protein Crystal Polymorphism
CH018	Obtaining chitin-melanin complexes from Hermetia Illucens and investigating its photoprotective and antimicrobial applications for use in sunscreens
CH020	The Effect of Phenolic Compounds in Natural Seasonings on Heterocyclic Amines in Broiled Chicken Breast
CH021	Universal Approach for Protein Crystallisation
CH023	Investigating the adsorption and antibacterial properties of a composite made up of biochar from coconut husks and copper(II) oxide nanoparticles encapsulated in calcium alginate beads
CH025	Developing a Novel Detection Method for Butyrates, a Medicinal Food to Improve Gut Health
CH028	Paper-based chemical sensors for food freshness monitoring
CH029	Synthesis of mixed ligand MIL-53(Al) for defect engineering
CH032	First principles investigation of electronic structure, ligand field and magnetism of Re(III) compounds
CH034	Purifying nanoplastic-contaminated water with functionalised cellulose extracted from lychee peels
CH035	Enantioselective Synthesis of Biaryl Atropisomers using Distal Ionic Interactions
CH036	Spatial-Aware Deep Learning for Reaction Property Prediction
CH037	Investigating Substructure Vocabulary in Block-based Molecular Generation
CH041	Competing mechanisms in the assembly of tannic acid-gelatin multilayers
CO001	Deep Learning Model for the Prediction of Antimicrobial Agents
CO003	Investigation of Different Fragmentation Methods for Fragment Database Preparation

Project Code	Project Title
CO008	A phylogenetic analysis of the 2012-15 dengue outbreak in Sri Lanka
CO010	Effects of mutating a gene encoding for stereocilia of outer hair cells on auditory startle response in adult zebrafish
CO011	Detailed analysis of swimming behaviour in larval zebrafish treated with Selective Serotonin Reuptake Inhibitors in the light/dark choice anxiety assay
CO013	Evaluation of protein-RNA docking methods
CO015	functional structural modelling of a bok choy plant
CO016	Clarification of the Water Access Pathways of the F0 Domain of Escherichia coli F-ATPase
CO017	Using machine learning to analyze RNA-seq gene expression data for cancer biomarkers
CO019	Determination of Emotional States from Electroencephalogram (EEG) Data Using Machine Learning
CO022	Machine Learning Prediction of Hepatocellular Carcinoma using Exosomal RNA Expression
CO023	Kernel-based Augmentation and Data Simulation to enhance training of Variational Super-resolution for Microscopy
EA002	Effectiveness of Lemon peel derived Pectin-Lanthanum Hydrogel in Phosphate Adsorption
EA003	Synthesis of Papaya Seed Biochar-Chitosan Hydrogel Beads for Methylene Blue Adsorption
EA004	Analysis of water using precision ellipsometry
EA007	Potential Factors influencing Local Butterfly Biodiversity in Park Connectors
EA016	Quantification of Microplastic Bioaccumulation in Clams Using the Benchtop MALDI-TOF
EE002	Application of water hyacinth as a low-cost biosorbent for dyes in textile wastewater
EE004	Biochar Derived from Chopsticks as an Effective Biosorbent for Pollutant Removal from Wastewater
EE006	Image-based vehicle traffic modelling for greenhouse gas emissions
EE009	Inducing uptake and biodegradation of BPA by <i>C. fusca</i>
EE011	An investigation into the effects of varying pyrolysis temperatures and chitosan modification on the effectiveness of a banana peel biochar in adsorbing tetracycline hydrochloride from a synthetic solution
EE013	Feasibility of Construction of a PM2.5 Air Filter using Sugarcane Bagasse
EE014	Comparing biosorption effectiveness of Copper and Zinc ions using <i>Ganoderma lucidum</i> , <i>Volvariella volvacea</i> and <i>Pleurotus ostreatus</i>
EE015	Investigating Carbon Emissions of Seawater Desalination Plant from a Life Cycle Assessment perspective
EE018	Anaerobic Digestion of Food and Horticulture Waste
EE019	HYBRID ECOBIKE
EE020	Performance Evaluation of Recycled Acyl-Modified Chitosan Filtration Membranes on Polluted Water Using Spectroscopic Techniques
EE022	Optimization of Methane Production from the Anaerobic Digestion of Food waste
EE023	Food Waste to Green Fabric
EE024	River Waste Collector
EE026	Pharmaceutical wastewater treatment by continuous adsorption and electrochemical regeneration of a three dimensional activated carbon electrode
EE029	Construction of a Low-Energy Capacitive Deionisation Device for Effective Desalination
EE030	Self-healing of concrete containing recycled concrete aggregate

Project Code	Project Title
EE031	Screening of Food Waste as Alternative Growth Media for Brazzein Protein Expression in Lactococcus Lactis
EE033	Plastic-eating worms: what can we learn from the worms to deal with plastic waste?
EE037	Rapid Detection of Faecal Indicator Bacteria Using Smartphone-Based Platform
EE038	The Feasibility of Using Waste Textile Material as an Efficient and Reusable Sorbent for Cleaning up Oil Spills in Singapore
EE040	Research and development of a spectrum adaptive table lamp
ES004	Wearable Tech
ES005	The bird in the swarm: how to detect and resolve closely-spaced targets in radar
ES007	Wideband Monopole Antenna and Methods to Enhance its Performance
ES011	Machine Learning Enabled Edge Intelligence for Monitoring Singapore's Aedes Mosquito Population
ES013	Fruit Spoilage detection using Internet of Things and Fuzzy Logic Algorithm
ES014	Investigating the efficiency of air filters in enclosed environments using a self-built low-cost Indoor Air Quality Monitoring System
ES015	Wifimu: Navigating Indoor Small-Scaled Worlds and Exploring the Intersection of RSSI and IMU for Indoor Localisation
ES016	Design Strategies for High-Performance Integrated Optical Detectors
ES020	Implementation of an Integer Factoriser by Simulating a Stochastic Computer Using Probabilistic Bits and Invertible Logic Gates
ET002	Modifying a 3D Printer to Function as a Remote Control (Scanning) Microscope
ET003	Interpretation of Electric Motor Design for Electrical Vehicles and Personal Mobility Devices
ET004	A Novel Design of Self-adaptive Morphing Wing System
ET006	Optimal Road Constituents for Reducing the Urban Heat Island Effect
ET008	Design of structures based on novel machine learning
ET009	Optimisation of the Design of an Electromagnetic Projectile Launcher
ET010	Applications of a Modified 3D Printer in Automating Laboratory Procedures
ET011	Design and Development of Delta Wing with Loitering Capability
ET012	Simulation Study and Development of Sustainable Building Optimisation
ET013	Designing And Building A Semi-Autonomous Trolley For Use In School Science Laboratories
ET015	Aerodynamic Drag and Stability Characterisation of a Rigid Parachute
ET018	Implementation of Electrical Power System on a 1U Cubesat
ET019	Use of solid mechanics simulation to evaluate and model the stress distribution within an elastomer for making force sensors and soft robots.
ET022	Design And Analysis Of An Autonomous Electric Wing In Ground-Effect Drone For Ship Chandling
ET023	Tennis Ball Tower
EY002	Comparison of Energy Output of Active and Passive Solar Trackers
EY003	Development of photoluminescence imaging of perovskite solar cells
EY005	Sustainable Hydrogen Generation by Degradation of Biomass
EY006	Extracting Biofuel from Corn Cobs
EY007	Optically and Wirelessly Re-chargeable Buffer Batteries
EY008	Data-Driven Method for Li-Ion Battery Health Monitoring
EY009	Investigating the use of photovoltaic and infrared regulating smart windows to reduce electricity consumption in classrooms
EY010	Solid State Materials for Energy Harvesting and Cooling: from Materials Synthesis, Characterization, and Analysis to Applications
EY011	Investigating for Openings in Windows that Maximise Air Flow and Minimise Light Transmission

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EY014	Investigating the Effect of Biochar on the Performance of a Microbial Fuel Cell
EY016	Reducing carbon emissions caused by non-renewable fuel powered vehicles (NRFPVs)
MA001	On the Application of Inequalities Containing Sums of Minimum/Maximum of Numbers
MA002	The Steiner Tree Problem
MA003	Kaprekar-rakerpaK An Investigation on modified Kaprekar Routines
MA004	A.I. Training and Data Labelling with Data from the Real Environment
MA005	The study of the suitability for a Dengue vaccine uptake, the relevant concerns and general awareness of Dengue preventive measures among youth in Singapore
MA007	Project Wordle
MA008	How To Accurately Guess Multiple-Choice Questions (MCQ)
MA010	The Effectiveness Of Circuit Breaker: Assessing the circuit breaker based on models
MA011	Mountains and Valleys
MA014	How Geometrical and Physical Attributes Affect How a Phone Lands Upon Dropping
MA015	Hybrid Anime Recommendation Systems using Latent Matrix Factorisation and Content-Based Filtering
MA016	A study on factors contributing to content on Tik Tok appearing on one's For You Page
MA017	Representing Royal Families using Graph Theory
MA018	On the Modification of Recursive Sequences of the form $a_n = a_{n-1} + a_{n-j}$
MA019	Dungeons and Dragons Inspired Cantrip Knockout Prediction: Error-minimising numerical investigative system
MA021	Chromatic Number of Graph Powers
MA022	The study of the views of Singapore youths on the possibility of HPV vaccine made available to young male Singaporeans
MA027	Game Theory of Tourism during the COVID-19 Pandemic
MA028	An optimized prediction model of RON loss in gasoline refining process
MA033	SSP: An Alternative Perspective to NTRU
MA034	Utilising the SEIR Model to Simulate the Implementation of a Lockdown During the COVID-19 Pandemic
MI001	Optimising in vitro production of late stage Plasmodium falciparum gametocytes for Anopheles sinensis infection
MI003	Is SDST the most effective spray in killing bacteria?
MI004	Development of antimicrobial coating for inhibition of microbial surface colonisation in marine environments
MI005	Using Next Generation Sequencing to evaluate the genetic mutation responsible for increased antimicrobial resistance in E.Coli
MI007	Investigation of Antibacterial Effect of Shell and Fruit of Attap Seed against Escherichia coli bacteria and its potential as an alternative to hand sanitiser
MI008	Metagenomic and metatranscriptomic profiling of human gut Bifidobacteria in relation to infantile atopic eczema
MI009	Nonlesional skin microbiome differs between children with atopic dermatitis (AD) and those with history of AD
MI010	Plastic-microbe interaction in marine environments
MI011	Investigating the Simplification of Microbial Fuel Cells
MI012	Detection of Antimicrobial Resistance in Aquaculture Farms in Singapore
MI013	Effect of Plant Enzymes and Extracts in Plaque Prevention and Bleaching of Enamel Substitute
MI014	Testing of Ultraviolet Light Pasteurisation Usefulness on Commercial Beverages

Project Code	Project Title
MI016	Characterisation of novel phage cocktails against multi-drug resistant Mycobacterium abscessus
MI018	Investigative Study on the Conditions for Optimal Replication and Pigment Extraction of M. Luteus
MS001	Exploring the Electrical Characteristics of 2D Semiconductors for Quantum Computing
MS003	Synthesis of α -Mangostin Silver Nanoparticle
MS006	Development of aerogel fat blockers from sugarcane bagasse and corn leaves
MS008	Impossible make possible: room temperature 3D printing of natural hydrogel
MS009	Investigation of antibacterial and wound healing properties of chitosan xerogel extracted from Hermetia Illucens, Black Soldier Fly Larvae(BSFL) for application as a wound healing inductor
MS010	Silica Nanoparticles for Structural Colorations
MS012	Computational Discovery of Highly Sustainable and Efficient Metal Organic Frameworks for SO ₂ Capture
MS014	Methodology Studies on the Encapsulation of Silver Nanoparticles using TiO ₂ -coated CeO ₂ Nanocontainers
MS015	An investigation of the different types of ice cubes and their ability to cool coffee
MS019	Electrophysiological sensors for plants
MS020	Power Supply System for Smart Contact Lens
MS021	Electrodeposition of NiMo on 3D printed electrodes for hydrogen evolution reactions
MS022	Laser Tuned Micro-fluorescence in Fish Scales for Steganography and Chemical Sensing
MS023	To Investigate the Stretching Dynamics of Knotted DNA Molecules Under an Elongational Field
MS025	Growth and Crystallographic Characterisation of Beryllium Nitride Crystals
MS026	Tunable Laser-patterned Dynamic AgO Nano-twinklers: A Comparative Study of Nano-fireworks on ZnO Nanowires and Graphene Oxide Film
MS028	Preparation of Photonics Crystals by Langmuir Blodgett Technique
MS031	The Effect of Different Storage Conditions on Fruit Peels for the Green Synthesis of Silver Nanoparticles
MS033	Laser-Transformed C-ZnTi as Luminous Photosensor
MS034	Silver based coordination complexes enabling fiber for e-textiles
MS035	ImpEMITrable: Testing Materials and Gasket Shielding Abilities in Building a Faraday's Box
MS039	Phase Change Material based Thin Film Coating for Tunable Optical Devices
MS040	Atmospheric Water Harvesting enabled by Super-hygroscopic Mn Complex Composites
MS041	Investigating the effects of hydrophilicity and heat on the exfoliation of WS ₂
MS042	Additive Manufacturing using Two-photon Lithography: Dual-Material Microstructures for Anti-Counterfeiting Applications
MS043	Sound Reduction Capabilities of Biocomposites Synthesised from Food Wastes
MS044	Investigating the effect of different alloy cathodes on the production of CNTs during a one-pot molten salt CO ₂ conversion
MS046	Interactions between soy protein and phytochemicals in vegetarian fish balls
PH002	Doubly-Resonant Photonic Crystal Nanobeam for Second Harmonic Generation
PH005	Dynamics and Steady Precession of Ring on a Vertical Smooth Rod
PH006	Micro-viscosity of Gels studied with Magneto-Impedance Spectroscopy
PH008	Satellite ground station system for small satellite testing and tracking operation
PH010	Rényi bounds on quantum information combining

Project Code	Project Title
PH011	Imaging and animating our Sun to encourage amateur astronomers to continue their interest in astronomy
PH012	Building a muon detector to study relativistic effects of cosmic particles
PH015	Reflectarray design based on rectangular phoenix cell
PH021	Marangoni Bursting of Volatile Binary Mixture on Viscous Liquid
PH023	On the Coupled Vibroacoustic Modelling of Tensioned Elastic Membranes in a Pressurised Air Cavity
PH027	Inclined Sedimentation of Suspensions: Theoretical and Experimental Investigation into the Boycott Effect
PH034	Is a misting system the most effective and efficient cooling system?
PS004	Foliar spray of potassium to mitigate the effects of high salinity water in hydroponic soybean
PS005	The Effects of the Frequency of Nitrogen Fertiliser Added on the Growth and Protein Levels of Soybeans
PS006	Growth and development of strawberry in a tropical climate
PS007	Investigating the effects of adding banana peel-infused water on the growth of Pak Choi
PS009	Heterologous Expression of <i>Avicennia officinalis</i> Cation-Chloride Cotransporter (CCC1) in <i>Arabidopsis</i> and Yeast and its Role in the Regulation of Salt Tolerance
PS011	Effects of water availability for plants growing in zero gravity
PS014	A study on the effect of protein levels in soybean when grown with peanuts as companion plants
PS015	Effects of Air on the Rootzone of Hydroponic Rice
PS019	Effect of different colours of light on GI index of rice
PS021	Varying Voltages Of Electro-Culture On The Growth And Germination Of <i>Amaranthus Dubius</i> And Its Applications In Singapore's Market
PS022	Understanding the Genetic Basis of Resistance to Combined Heat and Drought stress in <i>Arabidopsis thaliana</i> accessions
PS024	Investigative study on how water content affects protein content in soybeans
PS028	Analysis of Chemical Composition of <i>Artemisia</i> for medicinal and culinary purposes
PS031	Effects of different food wastes as organic fertilisers on <i>Spinacia oleracea</i> growth
PS032	Salinity Effects on Lacinato Kales
PS036	Comparative effects of using frases and other fertilisers on plant growth and soil pH
PS039	Novel Growth Method of Microalgae to Increase Protein Content Under Mixotrophic Conditions
PS040	Developing a cost-effective product to grow cold-weather crops in warm climates
PS041	Phytoremediation properties of common fresh water plants
PS046	An Analysis Of How DIY Hydroponics Farming Affect Plant Growth
RO001	Dataset Generation to Improve the Balance of Training Data for Meta-Learning in Algorithm Selection
RO003	Investigating Machine Learning Algorithms in Writer Identification of Handwriting of Dyslexic Learners
RO004	VisualFoReST: Visual Font Recognition in Scene Text
RO005	Multi-modal BCI based effects of different cognitive states on arousal and executive vigilance assessment
RO007	Object Re-identification for Robotics
RO008	Intelligent System To Prevent Contamination Of Recyclable
RO009	Predicting ALS prognosis using shorter clinical observation windows with machine learning
RO011	A Deep Learning Approach to Fake News Classification
RO013	Image Segmentation for Food Sustainability: A Machine Learning Approach

Project Code	Project Title
RO014	Designing an Autonomous Platform using Hobbyist Robotics Embedded Computing for Performing Geospatial 3D Mapping
RO015	Injecting Intelligence Into Drones
RO018	Optimizing Configurable Robot Usage in Warehouse Logistics Applications
RO024	Comprehensive Analysis Of Generalisation Ability In Object Recognition Across Domains
RO027	Analysis of error distribution in catalyst-adsorbate binding energies generated by GNN
RO028	Deep Equilibrium BERT
RO029	Building of Natural Language Processing Application to aid in Politeness Transfer
RO030	Explainable Video Analytics - A wide area multi-camera tracking perspective.
RO031	Sign2Speak! Synthesising Emotional Speech from Singapore Sign Language through Deep Learning
RO032	longest simple path with Machine Learning
RO033	Exploring Image and Video Search
RO035	Training a Donkey Car with Machine Learning to Model a Self Driving Vehicle for Lane Following
RO037	A Deep Learning Model for Epicardial Adipose Tissue (EAT) Volume Quantification
RO039	Contradiction Detection for Fact Checking of Fake News
RO040	Multimodal assessment and coaching feedback to improve Public Speaking performance
RO041	Deep learning model for the diagnosis of exudative pharyngitis
RO042	Experiment on Offline Handwritten Mathematical Expressions Recognition Using Deep Learning Models
RO043	Vessel Trajectory Prediction in Maritime Transportation based on deep learning
RO045	Investigation of Gear and Push-Pull Tilting Mechanisms of Drones for Tree Inspection
RO046	School Surveillance System with an Autonomous Land Vehicle
RO047	Designing and Prototyping of AI-based Real-time Mobile Detectors for Calisthenic Push-up Exercise
RO048	Reccebot
RO052	Sign Language Identification with Machine Learning
SS001	Automated scanning of software patches in compiled binaries
SS004	Cryptanalysis of SQL Joins in Encrypted Databases under Varying Leakage Profiles
SS005	Adversarial Leakage Analysis using Dynamic Programming
SS007	Statistical Analysis of Leakage in Dual-Column cryptosystem using Graph Matching
SS008	Real-World Implementation and Security Analysis of Structured Encryption on Amazon Web Services
SS010	Leakage Abuse Attacks on Encrypted Columns using Lp-optimization
SS013	Alternative Inertial Tracking Protocol for Whiteboard AirPen
SS014	Designing a User Interface of a Speech Therapy Application for Aphasia Patients
SS020	LEDA: A Lightweight Game Engine using C++ Component-Based Techniques
SS021	Real-Time Privacy Preserving Human Activity Recognition Mobile Application based on Pose Classification
SS024	Interpreting and Evading Visualization-Based Deep Learning Malware Classifiers
SS028	Detecting Malware Samples using a Novel Feature Vector and Deep Learning Methods
SS030	Evaluation of Convolutional Neural Networks for Drone Detection
TM003	Development of sensor for Hepatitis B
TM004	Novel Protocol for Peripheral Blood Hematopoietic Stem Cell (PB-HSC) Expansion in Clinical Applications

Project Code	Project Title
TM006	Effect of Animal Extract on Wound Healing in 3T3 Fibroblasts
TM007	Optimizing AAV Transduction of Peripheral Blood Hematopoietic Stem Cells (PB-HSC) for In Vivo Gene Therapy
TM008	Mounting a combat against the terminator, Glioblastoma: Using combinatorial chemotherapeutics
TM009	Development of a Novel Genotyping Assay to Investigate Genetic Determinants of Intracranial Atherosclerotic Stenosis in Singapore
TM010	Investigating the synergistic effects of combining Wnt pathway inhibitors GB1874 or AB4 together with an innate natural killer immune cell line, NK-92MI on two different commercial colorectal cancer cell lines, SW480 and HCT116