

SSEF Award Winners 2018

Congratulations to all our Winners and participants of SSEF 2018!

SSEF 2018 Gold Award

Project Code	Project Title	Names of students
BI007	Functional characterization of CRISPR/Mbcpf1 in vitro	Jovi Koh Li
BI031	Cell-Surface Engineering of Glycosaminoglycan Mimetics for Targeting Parkinson's Disease	Vicky Qu Qianqian
CB025	DNA Repair requires the eviction of the Linker Histone H1 from the site of damaged DNA	Darren Chan Shun Jie
		Swee Si Min
CH018	Affinity of Aptamers Studied by Precision ELlipsometry	Kee Jin Wen
CH023	Electrochemical Treatment of Sludge	Lim Wei Leong Bryan
		Dominic Yap Wei Ting
		Lim Hai Leong Shawn
EM034	Investigating the aerodynamic performance of biomimetic gliders for use in future urban transportation	Wang Jiwei
		Wang Yiyang
		Navin Kumar
EN002	Regeneration of High-Performance Thin Film Adsorbent for Pollutant Removal in Wastewater	Tan Yue Shuiian
EN005	Vibration of Scraper-like Spacers for Membrane Fouling Control	Mao Ziming
		Zhang Yanjun
EN011	Use of Lysozyme in Microfiltration Membranes for Control of Biofouling	Ng Song Peng, Matthew
		Jorshall Law Jin Hao
EN024	Membrane to separate oil-water emulsion effectively	Yang Qize
		Meideline Santika
MS003	Proximity Effect Induced Superconductivity in a Quintuple Layer of Bi ₂ Te ₃ on FeSe _{0.45} Te _{0.55}	Han Ruobin
MS023	Investigation of Rotating Magnetic Nanoparticles	Koo Wei De
MS038	Green Synthesis of Metallic Nanoparticles Using Beetroot Extract	Sim Ee En, Ian
		Clyve Yaow Yu Leon
		Lee Kuan Ming Feldman
MS039	Electric-field-choreographed flash mobs of silver nanosurfers	Patria Lim Yun Xuan
		Leow Yong Han Jerome

MS054	Colloidal flows through polymer brush-coated nanochannel	James Ding Sinuo
PH003	The dynamics of the Gee-Haw Whammy Diddle	Rachel Qing Pang
PH012	Investigation of fluid-filled resonating systems with surface wave excitation	Seet Yong Sheng Clive
PH034	Dynamics of Ball in Liquid-Filled Inclined Rotating Cylinder	Fu Xinghong
PH037	Topological Analysis of Circuit Laplacians and an experimental verification of Su-Schrieffer-Heeger Topoelectrical Circuit	Russell Yang Qi Xun
RO028	Using EEG-validated Music Emotion Recognition Techniques to Classify Multi-Genre Popular Music for Therapeutic Purposes	Dejoy Shastikk Kumaran
		Saravanan Yukesh Ragavendar
TM002	Novel Therapy Responsive Splicing Switch for Gene Therapy	Aleena Madathiparambil Saju
TM007	Characterization of a Novel "mitocan" for Clinical Utility in the Treatment of Triple-Negative Breast Cancer	Benjamin Paik
TM016	Efficacy of Taxoid Nanoemulsions in the Treatment of Mouse Pancreatic Cancer	Timothy Tan Zhen Xin
TM017	Development of a Robust Assay for Simultaneous Genetic Diagnosis of Fragile X Syndrome and Fragile XE Syndrome	Liu Timing

SSEF 2018 Silver Award

Project Code	Project Title	Names of students
AS005	Nuclear scaling during early mouse embryo development	Fidelia Beatrice Alvina
BE018	Novel DNA Aptamers for Diagnostic and Therapeutic Applications	Lim Yun Wei Shermane
BI012	To develop a quick test kit for the detection of pesticide residue in vegetables and fruits	Chan Zi Yin
		Lee Ley Mun
		Tasha Anna Leow
BM011	Investigating the effects of plant extracts on Alzheimer's disease	Joshua Koh Zhi Yuan
		Enoch Kwok
BM015	A humanized Hypertrophic Cardiomyopathy (HCM) model to elucidate molecular mechanism in disease pathology	Vijayakumar Ragavi
		Ethan Ho Zi En
		Maxine Hong Minxin
CB007	Regulation of T Cell Development by TLR9 in Systemic Lupus Erythematosus	Colin Chung Kai Yuan
		Ng Wei Jun Justin
		Sherwyn Koh Ki

CB026	FAT10 Haplotypes as a potential biomarker for cancer	Choy Mun Gabrielle Ho
CB029	Development of a single-tube molecular screen for five common spinocerebellar ataxias	Bay Jia Wei
		Li Yuyao
CH028	Novel Encapsulation of Cadmium Orthostannate Nanoparticles with 3-(mercaptopropyl)trimethoxysilane: Synthesis, Characterisation, and Application	Yu Youjing
		Zhou Ya Nan
		Wang Ziyang
CO006	Cellular Object Detection in Breast Cancer Cells	Puravi Panda
CO020	Assessing user cognitive workload from changes in electroencephalogram elicited during mental arithmetic	Zhang Xin
CO022	Genes associated with survival prognosis of renal cancers	Lim Tyen Siang, Timothy
		Gideon Tay Yee Chuen
		Shannon Lee Xin Ying
EA002	Sophora flavescens: Bioactive compounds in a novel filter	Lin Jiachen
		Jin Xinyang
EA006	Chemically Modified Pomelo Pith for Oil Sorption	Xiang Yang
		Roy Chenyu Luo
		Ong Sheng Hao
EM002	Comparison of Reflectarray Antennae with Different Lattices using Elements with Two Axial Symmetry	Ian Tay Rongde
		Choo Ze Xian
		Samuel Tan Ming Ying
EN003	Engineering Porous Materials for Energy-Efficient Greenhouse Gas Capture	Zeng Linlan
		Lee Jia En Grace
ES022	Multi-Static Radar Processing	Teo Por Loong, Jacob
		Dylan Toh Shan Hong
MA012	Summation of certain Fourier series and their applications to infinite series	Li Jingtao
		Chong Jing Quan
		Huang Xing Chen
MA034	Characterisation of Labeled Datasets via Cluster-based Meta-features	Teng Hongyu
		He Yu
MS011	Effect of inorganic particles on latex paint to form a VOC-free exterior water based coating	Nathaniel Chin Yi Xuan
MS022	Magnetic Interactions in Composite Thin Films	Fenna Hoi
MS042		Yap Kang Zheng

	Development of a Photothermal Ablation Agent using Prussian Blue Nanoparticles	Ooi Ren An
MS060	Wearable Energy Generator	Yao Xinyi
MS061	3D-printable Porous Polymer Membrane with TiO ₂ Nanoparticles for Malodour Removal from Polluted Air	Seah Li Ping Megan
		Kelly Yeoh Kaili
PH036	Optical Analysis of the Defocused Single Lens Pinhole Telescope	Lendermann Markus Paul Zhi-Guang
PH039	Dynamics of Oscillating Liquid Droplets during the Leidenfrost Effect	Li Kang Chen
TM004	To investigate the synergistic effect of metformin and simvastatin on lactate metabolism as a therapeutic cancer agent	Lei Zemin
		Sakshi Garg

SSEF 2018 Bronze Award

Project Code	Project Title	Names of students
BE001	Development of Polyelectrolyte Hydrogel System for 3D Cell Culture and Differentiation	Toh Jan Li, Charmaine
BE012	Chemically defined glycosaminoglycan mimetics provide a safe way to inhibit cancer metastasis	Chen Anni
BE015	Developing a Soft Robotic Wrist Device for Wrist Rehabilitation	Lusi Wu Qi
		Er Wen Han
CH003	Synthesis of Monocalcium Phosphate from Blood Cockle Shells and evaluating its potential as a plant fertilizer	Wang Rui Jie
		Jason Niow Jia Sheng
		Bryan Tan Wen Qiang
CH009	Biomimicry –making shell-like structures in vitro	Wong Hui Jie
CO001	Development of selective CK2 inhibitors by in silico fragment screening	Arnold Tan An
EA008	A Novel, One-pot Environmentally Friendly Synthesis of Reduced Graphene Oxide from Durian and Bagasse Waste for Water Filters	Johnny Xiao Hong Yu
		Caleb Liow Jia Le
		Ho Shane
EC011	A full water electrolyzer with earth abundant materials	Liu Yanxi
EC030	Investigation of different metals as a substituent in Co ₃ O ₄ for battery anodes	Lee Jia Wen
EM004	Qualitative Investigation into Factors Affecting Shearograms of Defective Carbon Fibre Reinforced Polymer Composites and Honeycomb Panels using Temporal Phase Shift Digital Shearography	Benjamin Chek Jun Kiet
		Mirza Bin Abdul Latiff

EM041	Investigation of Sensorless Technique for Control of Permanent Magnet Synchronous Motors	Yang Han
EN004	A Novel Method Of Synthesising Biodegradable Hydrogels From Pomelo Peels	Yu Lining
		Sunaga Shion
		Ong Zheng Liang, Joseph
EN025	Study of Bird Feathers to Improve Design of Absorbent Pads for Greater Efficiency of Oil Spill Removal	Daphne Chu Zhiying
		Chua Hao Shan Alicia
EN028	Synthesising Chitosan-coated Magnetic Nanoparticles for Tertiary Wastewater Treatment	Tan Yong Hong James
EP003	High Temperature Hydrophobic Membrane For Conversion Of Low Grade Heat Energy Into Useful Energy	Benita Wong Zi Xin
		Tan Yong-Jia Naaman
ES013	Image Reconstruction from Wave Fields	Ng Quan Hao
MA015	The application of Markov Chains in MOBA games	Xu Yongren
		Zhang Qi
		Tan Zhicheng
MA025	Some sharp lower bounds for the Fejer-Jackson sum	Soh Jing Ren
MI003	Evaluation of antimicrobial activity and biocompatibility of Polyethylenimine (PEI) derivatives	Lim Zhi Yi Vanessa
MI006	Enhancement of microalgae growth using natural antimicrobial agents	Eugene Chua Khye Gin
MI009	Investigating the Antimicrobial and Antioxidant Activities of Gold Nanoparticles synthesised from Fruit Peel Extracts	Sin Ming Wei
		Ng Jing Ying
MS012	Electrically Tailored Metachrosis in ZnO:C Nanowires	Bryan Sow Miaoxuan
MS037	MXene based anode materials for LiBs	Wu Qirui
MS041	Making 2D Nanolayers Visible by Optical Imaging	Zhang Xiaohu
MS058	The Power of the Microtide	Ho Su Minn Jeilene
		Nadine Wang Rei Ying
MS067	Formation of molecular multi-layers studied by precision ellipsometer	Yun Waddy Soe
MS070	3D-printed wearable fragrance	Chua Shae-Linn
		Darren Chee Zhe Liang
PH006	Topological Dynamics of Mechanical Lattices	Le Nguyen Nguyen Khoi
PH017	Design of a Faceted Reflectarray Antenna	Ker Chin Tian
		Chong En Fui, Raelene

PH043	Modelling the Liquid Capillary Bridge Between Objects	Tay Fu Wen
		Chen Yian
SY004	Identifying Phishing Sites through the Inspection of SSL Certificates	Wong Ying Yee
		Low Zi Lin
		Wong Zi Yi
TM012	Protective effects of Clinacanthus nutans against UV-B induced chromosome damage	Chai Yi Hein

SSEF 2018 Merit Award

Project Code	Project Title	Names of students
BE003	Biofabrication of Organotypic Full-Thickness Skin Constructs	Lee Abby Chelsea
BE007	Design and development of novel support surface based on smart materials for prevention of pressure ulcers in bedridden patients	Chen Yitao
BE013	Low-cost 3D Printed Prosthetic Hand	Tan Ying Lin Valeska
		Li Bozhao
BI015	Evaluation of Durian Husk as a Viable Option for Biofuel Production	Ian Lee Hwee Liang
		Koh Yu Zhen
		Tan Hui Shan
BM006	Quercetin and Anthocyanin as Potential Sunscreen Agents for Hair Photoprotection	Zheng Wentian
		Andre Lim Bu Yun
CB017	Investigation of multipolar division in FBP17 knockdown cells	Tran Nguyen Manh Dan
CB022	Identifying Molecular and Physiological Factors related to Healthspan Extension	Zhang Jing Jing
CB023	Investigating the effect of muscle and neuronal over-expression of 4EBP in relation to Parkinson's disease and aging	Ong Shi Hui
CH019	Thermodynamic and Electronic Properties of Graphene-Embedded Fe, Co and Ni Atoms and Dimers	Ratnajit Sarkar
CH048	Computational modelling of organic molecules exhibiting Thermally-Activated Delayed Florescence	Sekine Sean Yoshitatsu
		Tay Kai Jun
CH077	Optimization of C-C bond formation through bis(oxy)enamine-organometallic compound reactions	Yeo Xue En, Ivah
		Justina Tan Sue Ching
CO008	Towards 3D Image Analysis Multi-cellular Tumor Spheroids	Wang Jiefan
		Chandrasekaran Akash
		Daniel Lau Yew En

CO019	Microscopic Cellular Image Segmentation in Breast Cancer Cells	Chow Qian Yu
EA001	Zinc Content in Metal Alloys and its Relationship to the Antimicrobial Efficacy in Decontaminating Polluted Water	Goh Zhi Jie
		Seah Yuxuan
EC004	Optimising the Efficiency and Reusability of Ionic Liquids in the Extraction of Lipids from Microalgae	Vong Tin Wai Keith
		Tan Kai Xuan
EC021	Effect of limonene on the physicochemical properties of biodiesel	Pramath Krishna
EC024	The Effects of Synthesis Composition and Condition on the Electrochemical Performance of $\text{LiNi}_x\text{Mn}_{(2-x)}\text{O}_4$	Yang Hui
EM007	Absorbance/Fluorescence Spectrophotometer	Tan Wan Lin
		Kwa Minyi Samantha
		Li Xingqi
EM030	Initiation of Projectile by Fragments	Samuel Chua Jia Cong
		Ying Fangfei Anna
EM037	Miniaturisation of Microwave Modules with Artificial Transmission Lines	Tan Xiao Wei
		Koh Jin Ann, Arielle
		Nicole Zhao
EM038	Phased Array Studies for System Applications	Qin Ai Xin
EM047	Microparticle Manipulation in the Microchannel by Surface Acoustic Wave	Lim Ze Ying
EN017	Regeneration of α -Cellulose Nanofibres derived from Leftover Vegetable Pulp as Low-cost Aerosol Particulate Filtration Polymers	Leong Jing, Wesley
		Deon Lee Jie Hui
ES002	Reconstruction of a Surface Grid Using Laser Assisted Image Analysis	Si Chenglei
		Mao Yu Di
		Pang Eng Meng Wyzley
ES017	Developing a Portable Telerehabilitation System for Knee Replacement Patients	Chua Shao Cong
		Ang Ee Xien
ES028	Vision-Based Access Control System	Ang Wei Leong
		Law Song En Timothy
		Xu Daofu
MA032	To what extent can we predict airport-specific flight delays with Data Modelling?	Yu Hon Yat
MI011	Investigating the potential of Physarum Polycephalum for use as programmable bio-wires	Chew Wenxuan
		Joel Foo Tai Meng

MI020	Germination triggers of Clostridium septicum suggest a role in gastrointestinal colonisation.	Lim Ting Wei
		Ayyappan Madhumitha
		Marvin Dragon Choo
MS008	Studying interactions between polymers and inorganic particles to form VOC-free water based coatings	Faith How Yuan Xin
MS010	Inorganic Engineering of Organic Semiconductors for Thermoelectric Investigation	Sui Lulu
MS015	Chemical Tuning of 3D-printable Polymer for Sustaining Fragrance Release	Khor Kiat Siong
		Melber Ang Yu Xuan
		Ng Wen Wei Victoria
MS017	How do Atoms Bond Together?	Chia Xin Ni Nicole
MS064	Highly-efficient Membrane with Nano-pits to separate Oil-water Emulsions	Lim Zheng Feng Wayne
		Ang Kai Jun
MS065	Development and Encapsulation of Cattail Pollen Sporopollenin Exine Capsules	Tan Ying Shuang, June
		Boon Yan Man Mabel
MS066	Anti-bacterial Organic Photoinitiator Admixture for 3D-printed Polymer Applications	Jonathan Low Yi Wei
		Alexander James Loy
		Lee Shi Hao
PH010	Modulation System for Precision Ellipsometry	Cheong Yan Ling, Grace
SY001	The Knight's Trail	Yeoh Yong Jie
		Tan Chern Lin Justin
		Tin En Hao
SY010	A Novel Investigation on Optimising Parameters in Coppersmith Method on Weak RSA Keys	Chong Ka Shing
		Ivan, Feng Jun Kai
TM014	Studying the efficacy of dual Histone Deacetylase (HDAC)/ Janus-activated Kinase 2 (JAK2) inhibitors, Joy233 and Joy273, in Multiple Myeloma	Tan Jia Wen

SSEF 2018 Special Awards

Organisation	Project Code	Project Title
Institution of Chemical Engineers (IChemE)	EC004	Optimising the Efficiency and Reusability of Ionic Liquids in the Extraction of Lipids from Microalgae
Institution of Chemical Engineers (IChemE)	EC011	A full water electrolyzer with earth abundant materials
Institution of Chemical Engineers (IChemE)	EC020	Optimising a Plant (Red Flame Ivy) Microbial Fuel Cell as a Sustainable Electricity Source
Institution of Chemical Engineers (IChemE)	EC021	Effect of limonene on the physicochemical properties of biodiesel
Institution of Engineers Singapore (IES)	EC022	Harnessing Electrochemical energy from fruits and vegetables
Institution of Engineers Singapore (IES)	EM018	Animal tracking design
Institution of Engineers Singapore (IES)	EN003	Engineering Porous Materials for Energy-Efficient Greenhouse Gas Capture
Institution of Engineers Singapore (IES)	EP014	A theoretical study on the performance of an indirect evaporative cooling system
Singapore Association for the Advancement of Science (SAAS)	BE031	Deep Learning in Medical Imaging for Detection of Basal Cell Carcinoma and Age-related Macular Degeneration
Singapore Association for the Advancement of Science (SAAS)	CH020	The effect of acetate salts on growth of alpha and gamma glycine crystals
Singapore Association for the Advancement of Science (SAAS)	EN001	Nanoglued Activated Carbon Matrix for Air Pollutant Removal

Singapore Association for the Advancement of Science (SAAS)	ES016	Optimising the efficiency of a wirelessly powered implant for photodynamic therapy
Singapore Association for the Advancement of Science (SAAS)	MS066	Anti-bacterial Organic Photoinitiator Admixture for 3D-printed Polymer Applications
Singapore Association for the Advancement of Science (SAAS)	PS008	Who is Faster, 2n, or 4n, in Growth and Cell Fate Reprogramming?
Singapore Association for the Advancement of Science (SAAS)	SY029	Image Classification Via Machine Learning
Singapore Society for Microbiology and Biotechnology (SSMB)	MI003	Evaluation of antimicrobial activity and biocompatibility of Polyethylenimine (PEI) derivatives
Yale-NUS	BI015	Evaluation of Durian Husk as a Viable Option for Biofuel Production
Yale-NUS	BM011	Investigating the effects of plant extracts on Alzheimer's disease
Yale-NUS	CH058	Comparative study of efficacy of chemical activators in activated carbon production through characterisation through iodine and methylene blue adsorption
Yale-NUS	EA001	Zinc Content in Metal Alloys and its Relationship to the Antimicrobial Efficacy in Decontaminating Polluted Water
Yale-NUS	EA002	Sophora flavescens: Bioactive compounds in a novel filter
Yale-NUS	EA008	A Novel, One-pot Environmentally Friendly Synthesis of Reduced Graphene Oxide from Durian and Bagasse Waste for Water Filters
Yale-NUS	EC023	Dye-Sensitised Solar Cells Using Flora Extract
Yale-NUS	EM001	Simulation-based Analysis of a Network Model for Autonomous Vehicles with Vehicle-to-Vehicle Communication
Yale-NUS	EM042	Investigating the Effectiveness of Wind Tunneling at Reducing the Urban Heat Island Effect
Yale-NUS	MA032	To what extent can we predict airport-specific flight delays with Data Modelling?

Intel ISEF 2018

Project Code	Project Title	Names of students
BI031	Cell-Surface Engineering of Glycosaminoglycan Mimetics for Targeting Parkinson's Disease	Vicky Qu Qianqian
CH018	Affinity of Aptamers Studied by Precision ELlipsometry	Kee Jin Wen
CH023	Electrochemical Treatment of Sludge	Lim Wei Leong Bryan
		Dominic Yap Wei Ting
		Lim Hai Leong Shawn
MS023	Investigation of Rotating Magnetic Nanoparticles	Koo Wei De
MS039	Electric-field-choreographed flash mobs of silver nanosurfers	Patria Lim Yun Xuan
		Leow Yong Han Jerome
PH037	Topological Analysis of Circuit Laplacians and an experimental verification of Su-Schrieffer-Heeger Topoelectrical Circuit	Russell Yang Qi Xun

Junior Scientist Award 2018

Project Code	Project Title	Names of students
JCH006	Microbial Fuel Cells: Food Waste as a Sugar Source	Emma Tan Xiu Wen
		Ho Jia Yi Jenevieve
JCO002	Auto watering system	Michael Lee Kang Rui
		Goh Sang Yee Celine
		Melody Tham
JCO003	Smart Disruption of Text Conversations via Sentiment Analysis	Eugene Lek Wing Chung

Broadcom Masters International 2018

Project Code	Project Title
JCH006	Microbial Fuel Cells: Food Waste as a Sugar Source