

# 學生壁報競賽得獎名單

## A. 生化與生醫工程

### 優勝

報告編號	作者	單位	題目
A-TP-070	陳羿綸	國立成功大學	Tacrolimus-loaded $\gamma$ -PGA/PLGA Microneedles for Ameliorating Atopic Dermatitis Symptoms in Nc/Nga Mice
A-TP-084	陳彥丞	元智大學	To Prepare an Elastomer Scaffold by Using Poly (Glycerol Sebacate) to Culture Mesenchymal Stromal Cells
A-TP-012	張倫豪	國立清華大學	Development of Self-replicating mRNA Vaccine Against Porcine Reproductive and Respiratory Syndrome Virus
A-TP-047	盧廷瑜	臺灣大學	Systemic tumor-targeted and nitric oxide generated keratin based nanoparticle enhanced photodynamic therapy of breast cancer
A-TP-078	Saitong Muneekaew	國立臺灣科技大學	Modulated Transdermal Delivery Of Nonsteroidal Anti-Inflammatory Drug By Macroporous Poly(Vinyl Alcohol)-Graphene Oxide Nanocomposite Films
A-TP-082	林廷翰	長庚大學	Solar-triggered Silver Doped Titanium Oxide Nanofibers with Efficient Photothermal Therapy for Tumor Ablation

### 佳作

報告編號	作者	單位	題目
A-TP-105	李蘭軒	國立清華大學	Continuous cell encapsulation in liquid core hydrogel droplet for drug development and cell therapy
A-TP-006	朱昱如	國立中央大學	Human Pluripotent Stem Cell Differentiation into RPE Progenitors on ECM-coated dishes
A-TP-026	Thi Kieu Nuong Nguyen	國立清華大學	CRISPR Activation of Long Non-coding RNA Dancr Promotes Chondrogenic Differentiation and Bone Regeneration by Upregulating Smad3 via Sponging miR-203-3p and miR-214-3p
A-TP-064	江子庠	國立清華大學	Rapid Formation of Hanging drop Arrays for Culturing 3D Spheroids
A-TP-088	施淳彥	國立成功大學	Ascorbic Acid-assisted Graphene Oxide Dots for Photodynamic Cancer Therapy
A-TP-100	余祐慈	國立清華大學	Phase-Changeable Nanoemulsions for Oral Delivery of a Therapeutic Peptide Directly Targeting Pancreas via Lymphatic Transport for Glycemic Control in Diabetes
A-TP-009	盧韋帆	國立臺灣大學	Fabrication of keratin-based scaffolds for hemostasis and antimicrobial photodynamic therapy on wound healing
A-TP-015	許哲瑜	國立中央大學	Hypoimmunogenic human induced pluripotent stem cells prepared from amniotic fluid stem cells

A-TP-016	余紫瑄	國立成功大學	Deciphering 5-aminolevulinic acid production in Escherichia coli from the aspect of codon shuffling and Timer
A-TP-022	劉冠霆 Liu Kuan Ting	國立臺灣大學	A precise dual-targeting/modality photo-driven hyperthermia nanocarrier system through P-selectin/acidic microenvironment for effective thrombolytic therapy
A-TP-089	邱鈺洋	國立臺北科技大學	Effects of different proportions of human hair proteins on the nanoparticle properties and drug delivery at different pH values
A-TP-125	陳怡螢	元智大學	The Evaluation of Single-Chamber Electro-Fermentation to Enhance Echinenone Production
A-TP-014	朱昱如	國立中央大學	Differentiation of Human Pluripotent Stem Cells into Retinal Pigmented Epithelium Progenitors Cultured on ECM-coated Surface
A-TP-019	王君閣	國立中央大學	Effects of different xeno-free biomaterial for mesenchymal stem cells derived from human pluripotent stem cells
A-TP-025	譚世一	國立成功大學	CRISPRi-mediated programming essential gene can as a Direct Enzymatic Performance Evaluation & Determination (DEPEND) system
A-TP-033	盧昶竹	中原大學	Technology for rapid detection of anammox bacteria in wastewater treatment system
A-TP-099	洪慧珍	中原大學	Surface zwitterionization of polypropylene substrates for reduced blood cell adhesion
A-TP-117	張恆睿	國立清華大學	Optimization of violacein and deoxyviolacein production by tuning gene expression using RBS library

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## B. 輸送現象與分離程序

### 優勝

報告編號	作者	單位	題目
B-TP-001	汪佳樺	國立中央大學	Isolation of Primary Human Colon Tumor Cells from Surgical Tissues by Membrane Filtration Method
B-TP-032	廖翊淳	國立臺灣大學	Absorption of Hydrophilic and Hydrophobic Volatile Organic Compounds Simultaneously in a Rotating Packed Bed

### 佳作

報告編號	作者	單位	題目
B-TP-025	辜鴻威	國立臺灣大學	A Biomimetic Single-pore Ionic Circuit Enabled by Subnanochannel Metal-Organic Frameworks
B-TP-037	胡立人	國立宜蘭大學	Piperazine-Based Polyamide Composite Nanofiltration Membranes for efficient dye/salt separation
B-TP-044	陳彥齊	國立臺灣大學	Bio-inspired Sweat Collector for Real-time Health Monitoring
B-TP-042	李雪菱	國立臺灣大學	Fabrication of Mussel-inspired tannin coated PVDF membrane for oil-in-water emulsion separation
B-TP-017	陳佳筠	國立成功大學	Atypical AC Electrokinetic Flows caused by STM Probe
B-TP-046	葉祖豪	國立宜蘭大學	3D Printing: Micro-Factory of Ceramic Separation Membranes in the Future
B-TP-020	Chih-Ting Liao	逢甲大學	Product Recover on a Centrifugal Platform

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## C. 熱力及界面工程

### 優勝

報告編號	作者	單位	題目
C-TP-004	鄭庭宇	國立臺灣大學	Enhancement of Liquid Mixing in Porous Media Composed of Particles with Contradictory Hydrophilicity
C-TP-005	邱子恆	國立成功大學	Development of Coarse Grain Model for Charged Amphiphiles with Distance-dependent Dielectric Constant

### 佳作

報告編號	作者	單位	題目
C-TP-024	黃昱銘	國立中央大學	Interactions of self-propelled droplets with immiscible liquid droplets
C-TP-031	林韋澄	國立清華大學	Explore the effect of introducing cyclopentadithiophene derivative into the D-A type polymer photocatalyst for visible-light-driven hydrogen evolution
C-TP-036	陳怡廷	國立成功大學	Physical properties of the complexes fabricated from positively charged catanionic vesicles with hyaluronic acid
C-TP-007	陳建良	國立中央大學	Computational Investigation of Gas Transport Behavior in UiO-66-Based Mixed Matrix Membranes
C-TP-032	Afifah Nur Ubaidillah	國立臺灣科技大學	Composition Design of Self-healing Polymer Binder for Silicone Anode in Lithium Ion Batteries

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### D. 材料在化工的應用

#### 優勝

報告編號	作者	單位	題目
D-TP-028	張桂憶	國立台灣科技大學	Atmospheric-pressure microplasma-assisted one step synthesis of photoluminescent silicon quantum dots for detection of dopamine
D-TP-082	林育詩	國立清華大學	Spherical Porous Nanoclusters of NiO and CeO <sub>2</sub> Nanoparticles as Catalysts for Syngas Production
D-TP-012	馮喬	國立成功大學	3D printing of polyimide aerogels and zirconia ceramics
D-TP-080	陳以燈	國立中央大學	Fabrication of flexible well-ordered polymer nanostructure with the combination of the nanosphere lithography, anodization and pore-filling processes
D-TP-099	陳怡君	國立台灣大學	Full atom-efficiency transformation of wasted polycarbonates into epoxy thermosets and the catalyst-free degradation of the thermosets for environmental sustainability
D-TP-039	葉博森	國立中央大學	Graphene oxide membranes prepared by spray coating method as barrier film

#### 佳作

報告編號	作者	單位	題目
D-TP-015	羅子軒	國立成功大學	3D Printing of Porous Materials by RAFT Mediated Emulsion Polymerization and Alumina Ceramics
D-TP-073	李展毅	國立台灣科技大學	Synthesis interpenetrating polymer network hydrogel from calcium alginate and zwitterionic polymer for microneedle patch as transdermal drug carrier
D-TP-106	Hoang-Linh Bui	國立中央大學	Dopamine-assisted photo-polymerization for the fabrication of multi-functional hydrogel
D-TP-026	林珈琪	國立中央大學	Dithioalkyl Dithienothiophene (DSDTT) Based Small Molecule and its Blends for High Performance p-type Organic Field Effect Transistors by Solution-Sheared process
D-TP-053	陳喜兒	國立高雄科技大學	Spent coffee grounds as photothermal materials
D-TP-083	Wei-Liang Jhang	國立成功大學	Fabrication of multilayer nanocrystal arrays in a homogeneous polymer matrix
D-TP-029	蔡宜庭	國立成功大學	Kinetics of depsiptide formation promoted by deep eutectic solvents
D-TP-045	陳宜庭	中原大學	Electrical conductivity, electrochromism and reversible contraction of functional composite spider fibers

D-TP-065	楊舜翔	國立中央大學	Control morphology and passivate defects via vacuum-assisted and additive engineering process for perovskite solar cell
D-TP-079	徐瑋	國立中央大學	Fabrication and Characteristics of Vertical-aligned Nanopore Arrays on Flexible Silicon
D-TP-035	王建閔	國立台灣科技大學	Bioinspired Covalent Organic Framework Heterogeneous Membranes with Sub-2-nm Nanochannels for High-Performance Osmotic Energy Generation
D-TP-056	楊知政	國立清華大學	Dendrimer-mediated Columnar Mesophase of Surfactant
D-TP-104	劉家鐸	國立台灣科技大學	Preparation of SiO <sub>x</sub> Thin Films as the Barrier Layer By Atmospheric Pressure Plasma Deposition
D-TP-105	Teng-Hsuan Pan	國立台灣科技大學	Enhancement of Sound Transmission on Electroless Copper Plated Plastic Mouthpiece Applied for Brass Instruments
D-TP-004	陳泰宇	國立高雄科技大學	Incorporating catechol group in to SBMA/HEMA hydrogels to form multifunctional biomaterials
D-TP-009	丁郁軒	元智大學	Synthesis and stimuli-responsive properties of tetraphenylethene (TPE)-based block copolymers through RAFT living polymerization
D-TP-052	林廷翰	長庚大學	Highly Efficient Solar-Driven Photodegradation on Antibiotics by Self-Precipitated Ag NPs/TiO <sub>2</sub> Nanofiber Photocatalyst
D-TP-098	葉侖叡	國立台灣大學	Microplasma-Engineered Nanoassembly of Core-Shell Plasmonic Nanoparticles for Ultrasensitive Flexible Surface-Enhanced Raman Scattering Substrates
D-TP-094	楊晴樺	國立台北科技大學	In-situ synthesis of co-metal organic framework in carbon nanofibers by electrospinning for flexible supercapacitors
D-TP-093	楊東霖	國立中正大學	Ligand Effects on the CsPbBr <sub>3</sub> Quantum dot/Poly(3-hexylthiophene) Based Photomemory
D-TP-103	董聿軒	國立交通大學	Mechanochemically Triggered Fluorescence "Turn on" of an Anthracene Carboximide Diels-Alder Adduct for Stress-Sensing
D-TP-006	楊巧詣	國立台灣科技大學	Surface Finish Layer Effect on Solder-Joint Microstructure
D-TP-031	陳秉旭	國立中央大學	Influences of Defect Degree in Zirconium Metal-Organic Framework on Mixed Matrix Membrane Performance
D-TP-040	張雅筑	國立雲林科技大學	Fabrication of Highly Efficient Perovskite Solar Cells at High Humidity Atmosphere
D-TP-041	潘緯辰	國立雲林科技大學	Contact lenses with high oxygen permeability
D-TP-070	郭家銘	國立台灣科技大學	Preparation of Copper Oxides Composite Fibers by Microwave Plasma for Antibacterial and Photocatalytic Applications
D-TP-107	Gavin Sison	國立台灣大學	Nucleation and Crystal Growth of Bulk Si <sub>1-x</sub> Ge <sub>x</sub> Alloy for Use as a Thermoelectric Material

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## E. 電化學技術

### 優勝

報告編號	作者	單位	題目
E-TP-076	姜羽柔	國立臺灣科技大學	Highly Transparent Poly+A2:D77aniline/rGO Composite Film as an Electrocatalytic Layer in Photoelectrochromic Devices
E-TP-069	劉勛盛	國立成功大學	Ion Transport Mechanisms of Solid Polymer Electrolyte with Silsesquioxane Crosslinking Polyethylene Glycol Framework for Lithium-Ion Battery: A Molecular Simulation Study
E-TP-073	Sofiannisa Aulia	國立臺灣科技大學	Designing Oxygen Plasma Activated NiFe Prussian Blue Analogues Interconnected with N-CNTs as Bifunctional Electrocatalyst for Rechargeable Zinc-air Battery
E-TP-074	Mia Rinawati	國立臺灣科技大學	Integration of heteroatom-doped Graphene Quantum Dots into MOF-derived NiFe LDH for Electrocatalytic Water Splitting

### 佳作

報告編號	作者	單位	題目
E-TP-070	陳鈺穎	國立清華大學	A Novel Three-step Approach for the fabrication of All-inorganic CsPbI <sub>2</sub> Br Perovskite Film
E-TP-030	Jen-Yu Lee	國立台灣大學	A spiro-twisted benzoxazine as crosslinkable modifier in polyethylene oxide (PEO) for all solid lithium ion batteries
E-TP-044	郭家宜	國立清華大學	Highly Adhesive Wet Metallization Using Micro Surface Roughening on Photo-Imageable Dielectric Material
E-TP-067	Shih-Hao Lin	國立清華大學	Characterization of a Ni(OH) <sub>2</sub> nanoparticle based lactic acid sensor with a porous structure to increase the detection range
E-TP-065	賀威翰	國立成功大學	Vanadium-Based Polyoxometalate Adsorbed in a Metal–Organic Framework for Electrocatalytic Dopamine Oxidation
E-TP-068	Vinh Son Nguyen	國立清華大學	Correlation Between 4-tert-Butylpyridine-Coordinated Copper Redox Mediators and Long-Term Stability of Dye-Sensitized Solar Cells
E-TP-009	劉上慈	國立清華大學	The High-Speed Direct-Current Electrodeposition of Nanotwinned Copper Induced by Thiol Organic Additives
E-TP-022	饒文揚	國立清華大學	Adjusting hydrophobicity in catalyst layer to improve the performance of rechargeable zinc-air battery
E-TP-028	鄭家昕	國立成功大學	Fabricating low interfacial resistance electrolytes by using polyether electrospun membrane for application in all-solid-state lithium batteries
E-TP-043	張朝翔	國立台灣大學	Maleic Anhydride as an Electrolyte Additive for Recycled-Silicon Negative Electrode of Lithium Ion Batteries

E-TP-020	陳彥霖	國立中央大學	Carbon fiber composite applied for lithium-ion battery anode
E-TP-026	Da Je Hsu	國立清華大學	Synthesis and Characterization of Nitrogen-Doped Graphene Nanowalls by Plasma-Enhanced Chemical Vapor Deposition Using Different Carbon Sources for High Voltage Supercapacitors

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## F. 綠色化工技術與程序系統工程

### 優勝

報告編號	作者	單位	題目
F-TP-012	游林軒	中原大學	Auto-Generating Semi-Supervised Multi-KPLS Models without Pre-Classification of Monitoring Nonlinear Processes

### 佳作

報告編號	作者	單位	題目
F-TP-013	莊晴雯	中原大學	Enhancing Identification of Closed-Loop Nonlinear Processes Using Kernel Subspace Hammerstein Model and Over-sampling Scheme
F-TP-021	許景翔	國立成功大學	Optimal Retrofit Designs of Multi-Plant Heat Exchanger Networks with Reasonable Benefit Allocation Plans.
F-TP-006	李玟儀	國立臺北科技大學	Special wettable underwater superoleophobic material for effective simultaneous removal of high viscous insoluble oils and soluble dyes from wastewater
F-TP-023	黃凱銘	南臺科技大學	Recovery of High Purity N-methyl-2-pyrrolidone (NMP) from Solvent Waste by Microwave Distillation System

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## G. 觸媒與反應工程

### 優勝

報告編號	作者	單位	題目
G-TP-009	楊哲銘	國立清華大學	Porous Base Nanoparticles for Catalysis of Transesterification to Biodiesel Production
G-TP-004	杜芳毅	國立台灣大學	Surface Chemistry of Dimethyl Carbonate on CeO <sub>2</sub> Nanocrystals
G-TP-003	古浩銓	國立台灣大學	Ruthenium (II)-Based Metallo-Supramolecular Polymers as Heterogeneous Catalysts for Catalytic Transfer Hydrogenation of Benzaldehyde to Benzyl alcohol

### 佳作

報告編號	作者	單位	題目
G-TP-002	葉丞禧	國立清華大學	single-atom metal catalysts
G-TP-014	楊凱翔	國立清華大學	Density Functional Theory Investigation of Hydrogen Activation on Ru/MgO Catalysts
G-TP-001	葉珈彤	逢甲大學	Investigation of Samaria Doped Ceria Catalyst for Methane Oxidation and Effect of Oxygen Vacancy
G-TP-016	葉侑叡	國立台灣大學	A High-Efficient and Catalytic Platform reduction 4-Nitrophenol Based on Reusable Au@Ag nanoparticle / cellulose paper
G-TP-032	蔡語珮	國立台灣科技大學	A Theoretical Investigation of Catalytic Properties of $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> (104) towards CH <sub>4</sub> Conversion and CO <sub>2</sub> Reduction

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## H. 能源與環境工程

### 優勝

報告編號	作者	單位	題目
H-TP-008	Kuan-Ting Chen	國立清華大學	Bi-Sb Nanocrystals Embedded in Phosphorous as High Performance Potassium Ion Battery Electrodes
H-TP-007	馮彥翔	成功大學	Bimetal-Organic Frameworks/Graphene Oxide Derived Cobalt Oxides/N-Doped Reduced Graphene Oxide Nanocomposites as Bifunctional Electrocatalysts for Zn-Air Battery with Solar Thermal-Enhanced Performance

### 佳作

報告編號	作者	單位	題目
H-TP-011	張兆鵬	國立臺灣大學	Enhanced cycle stability by controlling structural phase transformation with cation doping
H-TP-001	林佳儀	國立成功大學	Pyridoxal kinase (PdxY) mediated carbon dioxide utilization and biomass enhancement in mixotrophic culture of <i>Chlamydomonas reinhardtii</i> CC400
H-TP-009	李定祥	中原大學	Condition simulation and microbial phase efficiency observation of Anammox reactor rapid start
H-TP-002	許碩巖	國立臺北科技大學	Study of pH value effect on Synthesizing UIO-66 and Carbonized UIO-66 as Active Material of Solid-state Supercapacitors
H-TP-016	廖晟宏	國立台灣大學	Application of Artificial Interphase on Ni-Rich Cathode Materials in All Solid State Li-Ion Batteries
H-TP-015	陳峰	雲林科技大學	Wearable energy storage devices by using high performance 3D network V2O5 printing paper electrodes