

## Global Youth Science and Technology Bowl 2022 List of Finalists

Team No.	Project Title	Country
IBBC087	Association of Allergy and Emotion: An Exploratory Study Using Electroencephalography	Canada
IBBC066	Study of Shiga-Toxin-Producing E.Coli Specific Gene Expression	Georgia
IBPE049	Digital Image Zooming Using Interpolation	Georgia
IBPE061	New Identity for Regular Tetrahedron	Georgia
IBPE071	The Motion of Bodies in Curved Plane and Space Affected by Gravity	Georgia
IABC008	Forma-Rid Chitosan Gel	Hong Kong
IBBC007	The use of brine shrimp to test for water pollutants	Hong Kong
IBBC010	ACE fertilizer	Hong Kong
IAPE006	Intelligent Driver Drowsiness Detection System	Hong Kong
IAPE009	Food Waste Up-cycler	Hong Kong
IAPE026	AI Eye	Hong Kong
IAPE083	Marine Guard	Hong Kong
IAPE140	EMG Rehab System - A Package for Stroke Self Rehabilitation	Hong Kong
IBPE051	The New Biodegradable Filter for Face Mask	Hong Kong
IABC031	Spatio-temporal generation of morphological Plant features for growth prediction before harvest from Visual Image input using Progressively Growing GANs	India
IAPE029	IV Fluid Controlling and Monitoring System	India
IABC043	Improvement of Fe <sub>3</sub> O <sub>4</sub> Ferrofluids-Based Antimicrobial Activity through Particle Size Control Assisted by Biocompatible Surfactants	Indonesia
IABC086	Edible Film With Fish Freshness Sensor Technology Based on Parijoto Fruit Anthocyanin Indicator (EDI BERSERI)	Indonesia
IABC088	Innovation of Biocellulose Sheet Mask Based on SCOPY with Antioxidant Serum from Rice Bran Oil to Reduce Microplastic Waste	Indonesia
IBBC089	Effectiveness of Phytoremediation using Apu Wood ( <i>Pistia stratiotes</i> L) with Constructed Wetland system against Metal Cadmium (Cd) Absorption in Leachate Ponds Gampong Jawa Final Disposal (TPA)	Indonesia
IBBC099	Amplifying the Atmospheric Water Harvesting Capabilities of Calcium Chloride Via a Cellulose Sponge Medium	Indonesia
IBBC112	Nature takes on nature: investigating the effects of juglone on japanese knotweed	Ireland
IAPE135	Building an Automatic Weather Satellite Ground Station with Data Analytics Forecast	Ireland
IABC017	Automatic air purification self-cleaning system in elevator	Macau

IABC103	Research on the Influence of “Electric-Magnetic Field” on Chemical Reactions	Macau
IBBC018	Bone and plant fibre composite bioplastic	Macau
IAPE033	Developing a Low-Cost Portable Electronic Nose for the Detection of Colorectal Cancer By Using Convolutional Neural Networks	Macau
IAPE119	High Capacity, High Stability and Low Corrosive Al-treated Ionic Liquid Electrolyte with Al-deposited Carbon Anode used in Aluminum-ion Battery	Macau
IBBC035	Cultivation Methods to Produce Vegetables at Home During the International Year of Fruits and Vegetables 2021	Mexico
IAPE020	Application for Androind programmed in MIT App Inventor about Mayan Culture and Chichen Itza	Mexico
IAPE132	Manipulation of Math	Mexico
IAPE133	Supporting me to walk, together we can move forward	Mexico
IAPE025	Automatic Carotid Intima-Media Thickness Segmentation using Attention based Convolutional Neural Network with Domain-Specific Objective	Philippines
IBPE024	Hurricane in the cup- vortices' trochoidal motion and the effects of instability during diffusion in liquids	Poland
IABC073	Detection of Diabetes and Blood Glucose Level From Gas Analysis of Human Breath	Qatar
IAPE046	Automated System for Cleaning Solar Panels using Atmospheric Moisture	Qatar
IAPE050	Intelligent Evacuation System Using AI	Qatar
IAPE068	Producing Fresh water from air using Thermo Electric cooling	Qatar
IBPE062	Developing Thermoelectric Sandwich Method to Recover Wasted Energy in Aluminum Production	Qatar
IBBC055	The Spike Protein of SARS-CoV-2 Targets the Human PRL Oncogene	Singapore
IBBC057	Minimally Invasive Annuloplasty Using Shape-Memory Materials	Singapore
IBBC090	Calcium Phosphate/Collagen Ratio in Bone Grafts Influences Bone Repair in a Rabbit Tibial Defect Model	Singapore
IBBC093	Effect of different NPK ratios on the mass and chlorophyll content of the kangkong plant.	Singapore
IAPE054	Explainable Convolutional Neural Network for predicting Coronary Artery Disease from Radiographs	Singapore
IBPE079	Investigating the Bioelectric Effect for Treatment and Subsequent Inhibition of Nosocomial Biofilms	Singapore
IBBC111	Prevent fresh food spoilage by use of phytochemical plant extracts	South Africa

IAPE110	Automated Inflation and Pressure Regulation for Recreational and Professional Cyclists	South Africa
IAPE015	PESH: Piezoelectric energy harvester using sloshing-induced impact force	South Korea
IAPE038	Secure-Online Voting System Using Homomorphic Encryption	South Korea
IAPE098	Disentanglement of Latent Factors of Radiographic Knee Images for Knee Osteoarthritis Severity Classification	South Korea
IAPE100	NLP Powered Wheelchair with Road Condition Intelligence for Disabled Locomotor	South Korea
IAPE101	EMR Blockchain Network Using Asymmetric Key: How to Safely Manage a Patient's EMR	South Korea
IAPE116	The Cost-effective Development of Cryogenic Vaccine Carrier for Developing Countries in Africa	South Korea
IBPE012	Optimizing the Landing of a Spacecraft Using Q-learning	South Korea
IBPE013	Cryptocurrency as means for hedge fund	South Korea
IBPE014	A study on the vibration damping structure using the inner skeletal structure of the Anthocidaris crassispina	South Korea
IBBC034	Investigation of mRNA levels in Hodgkin's lymphoma patients and the effect of drug additive on Hodgkin's lymphoma cells	Sweden
IBBC039	Evaluating the Inhibitory Effects of 5 Types of Beans on Trypsin/Chymotrypsin	Sweden
IAPE044	Prototype and testing of pure hydrogen generator	Sweden
IBPE084	Rotational Placement and Mathematical Patterns: an Experimental Study	Sweden
IABC042	Deep learning Line Bot to screen COVID-19 from sound wave analysis	Thailand
IABC081	Development of cotinine test kit for detection of secondhand smoke exposer	Thailand
IBBC074	Antimicrobial Effects of Rice Extract on Acne Causing Bacteria Cutibacterium Acnes	Thailand
IBBC075	Biomass Waste Utilization for Synthesis of Zeolite A As A Low Cost and Potential Absorbent for Removing Dye and Heavy Metal Applications	Thailand
IBBC102	The study of efficiencies of 'Pistia Stratiotes' for absorbing heavy metals and treatment of soft acidity wastewater.	Thailand
IBBC122	The efficiency of TLS-01 lunar regolith simulant on sunflower seed germination for future astroculture	Thailand

IBBC130	Study the quantitative of microplastics accumulation in the gastrointestinal tract of aquatic animals and the efficacy of gut microbiota on microplastics elimination	Thailand
IAPE040	The invention of a propeller for Aerator Oxygen in Water imitating a Yang Na Seeds	Thailand
IAPE041	Magnetic Nanoparticles Decorated Titanium Dioxide Nanocylinders for Cancer Therapeutic Delivery	Thailand
IAPE080	The production of biodegradable battery Using by Galvanic cell reaction between Silica electrode with chemical husk ash solution	Thailand
IAPE121	A Novel of Ankle Support from Blended Yarn Between Hemp Fiber Bamboo Sheath Fiber and Cotton to Prevent Ankle Injuries	Thailand
IBPE056	Comparison of the effectiveness in bulletproofing of the plate made from the coconut and the loofah fiber	Thailand
IBBC037	Dosage-dependent Protective Effect of Melatonin and Sulforaphan Administration on In-vitro Alzheimer's Disease Model	Turkey
IBPE107	High Efficiency Photovoltaic Panel for Cold Climate Regions "ANTI-SNOW"	Turkey
IABC064	In silico research of the potential role of a number of compound class N-acylethanolamines as inhibitors of E-protein of the coronavirus SARS-CoV-2	Ukraine
IBBC069	The Analysis of Nighttime Sleep Quality, Autonomic Nervous System Disorders, and Cognitive Functions in Adolescents and the Search for Methods of Their Correction	Ukraine
IAPE047	Chronograph based on the Arduino hardware computing platform	Ukraine
IAPE065	Creation of a demonstration installation of Chladni figures on the basis of affordable modern technologies at home	Ukraine
IAPE108	The model for determining the influence of force fields on the drag of aircraft	Ukraine
IAPE022	Remote Irrigation System	United Arab Emirates
IAPE028	Melanoma Skin Cancer Classification via Region-Aware Hierarchical Feature Aggregation	United States
IAPE105	A Novel Out-of-Distribution Detector based on Autoencoder and Binary Classifier with Auxiliary Input	United States
IBBC150	Fabrication and study of optical properties of TbPO <sub>4</sub> for cancer cell recognition	Vietnam
IAPE151	Using a mathematical model to predict COVID-19 trends in Southeast Asian countries in 2022	Vietnam