

Project Code: EY008

SINGAPORE SCIENCE & ENGINEERING FAIR 2023

(MAIN CATEGORY)



ENTRY FORM

Please refer to the SSEF 2023 website (<http://www.science.edu.sg/ssef>) for details on the application process and all the submission requirements.

All forms must be received by **Friday, 11 January 2023, 17:00 hrs.**

PROJECT INFORMATION		
Type of Participation:	Project Category*:	Project Sub-Category*:
Team	▼ Energy: Sustainable Materials	Energy Storage
Title of Research Project:		
Data-Driven Method for Li-Ion Battery Health Monitoring		

* Please refer to Annex A for the list of categories and sub-categories. Selecting the appropriate category and sub-category is important to ensure that the assigned judges are familiar with your research topic.


DECLARATION BY PARTICIPANT(S) [§]		
I / We hereby certify that all the information provided to SSEF organisers is correct. I / We did not plagiarise material, forge or fabricate data, use or present other researcher's work as our own in my / our research project. I / We consent to the use of the information / project I / we submit to the organisers for publicity purpose. I / We understand that all the materials I / we submit will not be returned to me / us.		
Individual / Team Leader (i.e. team member 1)		
Full name:	School Level (e.g. Sec 3, IP4)	
Liu Zihao	JC2	
Signature:	School:	Date: (MM/DD/YY)
	Hwa Chong Institution	01/09/23
For Team Projects:		
Team Member 2		
Full name:	School Level (e.g. Sec 3, IP4)	
Ng Jean Tzi, Edric	JC2	
Signature:	School:	Date: (MM/DD/YY)
	River Valley High School	01/09/23
Team Member 3		
Full name:	School Level (e.g. Sec 3, IP4)	
Signature:	School:	Date: (MM/DD/YY)

[§] Note that participant(s) of SSEF may be contacted through e-mail for future STEM-related activities or surveys.


SCHOOL'S ENDORSEMENTFor individual project / team projects with members from the same school

Teacher-in-charge's full name:	Teacher-in-charge's email address:	
Teacher-in-charge's signature:		Date: (MM/DD/YY)

SCHOOL'S ENDORSEMENTFor team projects with members from different schools**For team member 1**

Teacher-in-charge's full name: Low Kay Siang	Teacher-in-charge's email address: lowks@hci.edu.sg	
Teacher-in-charge's signature: 		Date: (MM/DD/YY) 01/09/23

For team member 2

Teacher-in-charge's full name: Chow Ban Hoe	Teacher-in-charge's email address: chow_ban_hoe@moe.edu.sg	
Teacher-in-charge's signature: 		Date: (MM/DD/YY) 01/09/23

For team member 3

Teacher-in-charge's full name:	Teacher-in-charge's email address:	
Teacher-in-charge's signature:		Date: (MM/DD/YY)

SSEF MAIN CATEGORY 2023

PARENT/GUARDIAN CONSENT FORM (INDIVIDUAL/TEAM MEMBER 1) FOR SSEF 2023

In participating in SSEF 2023, the following may be shared on MOE and SSEF's social media platforms (Website, Facebook and Instagram pages) which are accessible to the general public:

1. Images and videos of my child/ward* participating in SSEF 2023 and ISEF 2023, if applicable;
2. Materials my child/ward* used during participation in SSEF 2023 and ISEF 2023, if applicable;
3. My child/ward*'s learning experience at SSEF 2023 and ISEF 2023, if applicable.

If you agree to your child / ward participating in the SSEF 2023, please fill in the blanks and sign below.

I, Liu Gang (name of parent / guardian), acknowledge that I have read and understood the information above.

I hereby give permission for any image or video of my child / ward, Liu Zihao, (name of child / ward) captured during SSEF 2023 and ISEF 2023, if applicable, to be used for the activities listed above.

I declare that I have the authority to sign this release and that I have read and understood this agreement prior to signing it.

PARENT'S/GUARDIAN'S SIGNATURE:



Date:

01/09/23

SSEF MAIN CATEGORY 2023

PARENT/GUARDIAN CONSENT FORM (TEAM MEMBER 2) FOR SSEF 2023

In participating in SSEF 2023, the following may be shared on MOE and SSEF's social media platforms (Website, Facebook and Instagram pages) which are accessible to the general public:

1. Images and videos of my child/ward* participating in SSEF 2023 and ISEF 2023, if applicable;
2. Materials my child/ward* used during participation in SSEF 2023 and ISEF 2023, if applicable;
3. My child/ward*'s learning experience at SSEF 2023 and ISEF 2023, if applicable.

If you agree to your child / ward participating in the SSEF 2023, please fill in the blanks and sign below.

I, Tuam Feng Ling (name of parent / guardian), acknowledge that I have read and understood the information above.

I hereby give permission for any image or video of my child / ward, Ng Jean Tzi, Edric, (name of child / ward) captured during SSEF 2023 and ISEF 2023, if applicable, to be used for the activities listed above.

I declare that I have the authority to sign this release and that I have read and understood this agreement prior to signing it.

PARENT'S/GUARDIAN'S SIGNATURE:



Date:

01/09/23

SSEF MAIN CATEGORY 2023

PARENT/GUARDIAN CONSENT FORM (TEAM MEMBER 3) FOR SSEF 2023

In participating in SSEF 2023, the following may be shared on MOE and SSEF's social media platforms (Website, Facebook and Instagram pages) which are accessible to the general public:

1. Images and videos of my child/ward* participating in SSEF 2023 and ISEF 2023, if applicable;
2. Materials my child/ward* used during participation in SSEF 2023 and ISEF 2023, if applicable;
3. My child/ward*'s learning experience at SSEF 2023 and ISEF 2023, if applicable.

If you agree to your child / ward participating in the SSEF 2023, please fill in the blanks and sign below.

I, _____ (name of parent / guardian), acknowledge that I have read and understood the information above.

I hereby give permission for any image or video of my child / ward, _____, (name of child / ward) captured during SSEF 2023 and ISEF 2023, if applicable, to be used for the activities listed above.

I declare that I have the authority to sign this release and that I have read and understood this agreement prior to signing it.

PARENT'S/GUARDIAN'S SIGNATURE:

Date:

ANNEX A – SSEF 2023 CATEGORIES (STATED IN BOLD AND CAPTIALISED) AND THE CORRESPONDING SUB-CATEGORIES

Please visit the website at <https://www.societyforscience.org/isef/categories-and-subcategories/all-categories/> for a full description and definition of the categories and sub-categories.

ANIMAL SCIENCES (AS)

- Animal Behavior
- Cellular Studies
- Development
- Ecology
- Genetics
- Nutrition and Growth
- Physiology
- Systematics and Evolution

BEHAVIORAL & SOCIAL SCIENCES (BH)

- Clinical and Developmental Psychology
- Cognitive Psychology
- Neuroscience
- Physiological Psychology
- Sociology and Social Psychology

BIOCHEMISTRY (BI)

- Analytical Biochemistry
- General Biochemistry
- Medicinal Biochemistry
- Structural Biochemistry

BIOMEDICAL & HEALTH SCIENCES (BM)

- Cell, Organ, and Systems Physiology
- Genetics and Molecular Biology of Disease
- Immunology
- Nutrition and Natural Products
- Pathophysiology

BIOMEDICAL ENGINEERING (BE)

- Biomaterials and Regenerative Medicine
- Biomechanics
- Biomedical Devices
- Biomedical Imaging
- Cell and Tissue Engineering
- Synthetic Biology

CELLULAR & MOLECULAR BIOLOGY (CB)

- Cell Physiology
- Cellular Immunology
- Genetics
- Molecular Biology
- Neurobiology

CHEMISTRY (CH)

- Analytical Chemistry
- Computational Chemistry
- Environmental Chemistry
- Inorganic Chemistry
- Materials Chemistry
- Organic Chemistry
- Physical Chemistry

COMPUTATIONAL BIOLOGY & BIOINFORMATICS (CO)

- Computational Biomodeling
- Computational Epidemiology
- Computational Evolutionary Biology
- Computational Neuroscience
- Computational Pharmacology
- Genomics

EARTH & ENVIRONMENTAL SCIENCES (EA)

- Atmospheric Science
- Climate Science
- Environmental Effects on Ecosystems
- Geosciences
- Water Science

EMBEDDED SYSTEMS (ES)

- Circuits
- Internet of Things
- Microcontrollers
- Networking and Data Communications
- Optics
- Sensors
- Signal Processing

ENERGY: SUSTAINABLE MATERIALS & DESIGN (EY)

- Biological Process and Design
- Energy Storage
- Hydrogen Generation and Storage
- Other Thermal Power
- Solar Process, Materials, and Design
- Thermal Generation and Design
- Triboelectricity and Electrolysis
- Wind
- Wind and Water Movement Power Generation

ENGINEERING TECHNOLOGY: STATICS & DYNAMICS (ET)

- Aerospace and Aeronautical Engineering
- Civil Engineering
- Computational Mechanics
- Control Theory
- Ground Vehicle Systems
- Industrial Engineering-Processing
- Mechanical Engineering
- Naval Systems

ENVIRONMENTAL ENGINEERING (EE)

- Bioremediation
- Land Reclamation
- Pollution Control
- Recycling and Waste Management
- Water Resources Management

MATERIALS SCIENCE (MS)

- Biomaterials
- Ceramic and Glasses
- Composite Materials
- Computation and Theory
- Electronic, Optical, and Magnetic Materials
- Nanomaterials
- Polymers

MATHEMATICS (MA)

- Analysis
- Combinatorics, Graph Theory, and Game Theory
- Geometry and Topology
- Number Theory
- Probability and Statistics

MICROBIOLOGY (MI)

- Antimicrobial and Antibiotics
- Applied Microbiology
- Bacteriology
- Environmental Microbiology
- Microbial Genetics
- Virology

PHYSICS & ASTRONOMY (PH)

- Astronomy and Cosmology
- Atomic, Molecular, and Optical Physics
- Biological Physics
- Condensed Matter and Materials
- Mechanics
- Nuclear and Particle Physics
- Theoretical, Computational, and Quantum Physics

PLANT SCIENCES (PS)

- Agriculture and Agronomy
- Ecology
- Genetics/ Breeding
- Growth and Development
- Pathology
- Plant Physiology
- Systematics and Evolution

ROBOTICS & INTELLIGENT MACHINES (RO)

- Biomechanics
- Cognitive Systems
- Control Theory
- Machine Learning
- Robot Kinematics

SYSTEMS SOFTWARE (SS)

- Algorithms
- Cybersecurity
- Databases
- Human/ Machine Interface
- Languages and Operating Systems
- Mobile Apps
- Online Learning

TRANSLATIONAL MEDICAL SCIENCES (TM)

- Disease Detection and Diagnosis
- Disease Prevention
- Disease Treatment and Therapies
- Drug Identification and Testing
- Pre-Clinical Studies