SOUMYA DALMIA
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EDUCATION

Modern High School International, Kolkata, India — *2023-Present*
-International Baccalaureate Diploma Program, Grade 12; — *2025-Present*
-Cambridge IGCSE Board Examinations, Grade 10 — *2023-2025*

STANDARDIZED TESTS

- **SAT - 1580(1st attempt)** — *October 2025*
- **IELTS - 8.5** — *October 2026*

ACADEMIC HONORS AND AWARDS

School

- Stood first (1/38) in Grade 12 mid-term examinations with 41/42 points — *2026*
- Certificate of Academic Excellence for achieving 41/42 points in Grade 11 — *2025-2026*
- Special Award for Outstanding Academic Achievement - A* in all 9 subjects in Grade 10 — *2024-2025*
- School Topper in IGCSE Board Examination — *2025*
- Certificate of Academic Proficiency for achieving A* in 6 subjects in Grade 9 — *2023-2024*

International

- Tentative score of 81/100 in the LSESU Economics Society Essay Competition 2026 — *August 2026*
- Certificate of Distinction in the International Chemistry Quiz — *August 2026*
- Gold Award in HKIMO Final Round and Heats — *June 2026*
- Certificate of Distinction in the Avogadro Exam by the University of Waterloo — *May 2026*
- World Economics Cup - Gold Team Award, Highest Distinction and Regional Top 10 Scorer (Continental Qualifier); Individual Bronze Award(Continental Round) — *April-August 2026*
- Bronze Prize in the World Mathematics Team Championship held in Bangkok — *January 2026*

SustainED - GREEN LITERACY INITIATIVE — *February 2026 - Present*

- **Founded and lead sustainED**, a sustainability education initiative reaching 15,000+ people, in partnership with Daali, an indoor and outdoor plant nursery
- Designed pamphlets and quiz to build genuine understanding of sustainability concepts, not just awareness
- Issued certificates to participants upon completion, recognizing their commitment to learning and environmental action
- Created a written pledge system where every participant commits to specific environmental behaviours; Each pledge is printed on seed paper and will be planted, converting written commitments into living plants
- Distributed seed pens as tangible take-homes, embedding the sustainability message into everyday objects
- Donated 3,000+ plants and raised Rs. 400,000 in collaboration with Daali through the EKAL foundation

STEM EXPERIENCES AND RESEARCH

Research

- **Computational Design of biosorbents for Heavy Metal Remediation -** Molecular docking analysis using Smina and PyMOL to evaluate protein biosorbents for heavy metal removal from water; identified peel metallothioneins as optimal binders (−10.1 kcal/mol). Awarded CREST Gold Award by British Science Association. Accepted for publication by *Oxford Journal of Student Scholarship.* — *February-August 2026*
- **Trichoderma Biofungicide Cultivation** - Designed and implemented in-house native Trichoderma production system at family-owned tea estate, scaling from isolation to 39,700 litres annually (2022–2025) while reducing chemical fungicide use by 84%. Awarded CREST Gold Award by British Science Association. — *2022–2026*
- **Chemistry Extended Essay -** Quantified pH effects on total phenolic content and antioxidant activity in Arabica coffee using FC and FRAP assays. — *2025-2027*

Observerships — *May-July 2026*

- **Bio-Caps India Ltd (pharmaceutical capsules)** — Completed an observership at a hard gelatin capsule manufacturer; documented the dip-moulding process and the thermoreversible sol–gel chemistry of gelatin, including how moisture control (13–16%) governs shell quality.
- **Streax, Baddi (cosmetics)** — Observed manufacture of a walnut hair serum; analysed the formulation chemistry of silicone conditioning agents, antioxidant protection of unsaturated oils, and surfactant-stabilised emulsification, plus the QC methods used for pH and stability.
- **Ferro-alloys plant (silico-manganese / ferro-manganese)** — Studied a submerged arc furnace operation; explained the carbothermic reduction reactions (1400–2000 °C), slag chemistry, and the energy and grade control behind alloy composition.
- **Gravita India Ltd (secondary lead recycling)** - Observed lead-acid battery recycling; documented soda-ash desulfurization and carbothermic reduction of battery paste to metallic lead, refining/alloying, and the lead-exposure controls central to the plant.

Discussions and Discourses — *January 2026*

- Reviewed seven peer-reviewed papers (2019–2023) by Dr. Nipun Bhargava (COO, Perfact Group; TERI collaborator) on TADOX®, a UV/TiO_2 photocatalytic wastewater treatment for textile, industrial, sewage and open-drain effluent.
- Analysed process stages, catalyst characterisation (XRD, TEM, BET) and performance metrics such as COD/BOD removal and energy per order.
- Discussed the research with the author over several conversations, covering process optimisation (pH, dissolved oxygen, UV time), TiO_2 recovery and reuse, treatment of mixed industrial effluent, and how UV penetration depth and flow rate shape reactor design.

Innovators in Science and Tech,Young Scholar's Programme, Ashoka University *June 2025*

- Engaged with university-level coursework across chemistry, physics, biology and mathematics, exploring how disciplines interconnect; Attended sessions led by Ashoka's globally renowned faculty and leading academics, deepening understanding of scientific thinking and problem-solving

Online Courses *June-July 2025*

- Completed Agroforestry III: Principles of Plant and Soil Management; Agroforestry IV: Climate, Carbon Storage and Agroforestry; Agroforestry V: Ecosystem Services, Food and Sustainability by the University of Florida on Coursera

Internships *May - July 2026*

- Spent summer at the country's largest technical textiles company & manufacturer of plastic woven sacks used for commodity packaging. Visited their integrated plants located in states of Tamil Nadu and Andhra Pradesh.
- Worked with the MLD group's tea plantations and processing units. Studied the entire process from soil to cup. These state of the art manufacturing units are the largest tea units producing over 15 million kgs of tea in the states of West Bengal and Assam.

School Activities

- **Mathfinity Society** *July 2026 - Present*
  Selected for 'Mathfinity', the school's premier merit-based Mathematics Society, in recognition of strong academic performance, analytical aptitude, and problem-solving skills in Mathematics.
- **Sci-Spire, Science Competition** *September - October 2025*
  Participated in interhouse science competition; built a prototype of solar-powered smart window which generates clean energy and reduces electricity usage
- **STEAM Society** *2023 - 2025*
  Coordinated visits to science museums and group-based discussions to promote scientific inquiry and led efforts to recruit members
- **Peer Tutor, Cambridge Science Competition** *May - October 2025*
  Guided Grade 9 students through the process of conducting scientific research and creating projects, assisting with ideation and data collection, after securing Bronze in the same competition the previous year

SCHOOL LEADERSHIP

Green Society - Environmental Club, President(Grade 12), Vice President(Grade 11) *July 2025- Present*

- Coordinated educational speaker sessions, competitions, and workshops for secondary school students
- Oversaw multidisciplinary student teams to carry out sustainability-related projects and events

CASvest (Business) Event Head, ShowCASe - MHSI's interschool fest, *September 2025 - July 2026*

- Led the organisation of the annual business event; ideated and designed the crisis-based market investment challenge
- Oversaw inter-school coordination, logistics, and participant management

MHSI Student Representative, Quantum Qubit - Don Bosco school's science fest, *Kolkata* *July 2025*

- Coordinated cooperation, logistics, event scheduling, established a communication channel between the two schools' teams
- Prepared, oversaw and assisted participants in multiple science and technology related events

MUSIC PURSUITS

Band Member, MHSI *July 2023 - 2025*

- Played the piano and bass guitar as a member of the school's music band
- Participated in over 15 school-wide and interschool cultural performances and competitions; Coordinated ensemble performances with vocalists and musicians

Piano Player *2015 - Present*

- Trained in Music since age 7; Gained proficiency in musical theory, including knowledge about pivotal composers, history of music, musical composition, origin of music chords, and reading sheet music
- Performed in multiple public performances across Kolkata, including at school and city auditoriums

COMMUNITY SERVICE

Member, Changemakers, *MHSI, Community service society* *August 2025 - Present*

- Contributed to creating positive social impact through hands-on initiatives like teaching underprivileged children, donation drives, and awareness campaigns; Developed leadership and teamwork skills; raised awareness about causes such as education equity and environmental sustainability.

Volunteer, Dhakuria - Education & Expression, *NGO*, *Kolkata* *August 2025 - Present*

- Taught students in Grades 6-12 the fundamentals of Geography, Mathematics and History as well as Chemistry, Physics and Mathematics

Volunteer, UNMICH, *NGO, Kolkata* *May 2025 - Present*

- Helped mentally challenged students in Grades 7 and 8 with schoolwork and educational activities; Helped the non profit organisation with admin work, organised and made products to sell in exhibitions

INTERESTS

Academic: Computational Chemistry, Green Chemistry, Organic Chemistry Non-Academic: Piano, Yoga, Reading