

ANNIKA SHAH

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EDUCATION

Aditya Birla World Academy (ABWA), Mumbai, India 2011 – Present

- International Baccalaureate Diploma Program, Grade 12 2023 – Present
- Cambridge IGCSE Board Exams, Grade 10 2021 – 2023

STANDARDIZED TESTS

- Scholastic Aptitude Test (SAT): Total – 1550/1600; Math – 800; Reading & Writing – 750 (1st attempt) Dec 2023
- AP Examinations: Psychology – 5 May 2022
- IELTS – 8.5/9 Sep 2024

KEY HONORS AND AWARDS

International: Cambridge Outstanding Learner Award – ‘Top In The World’ (World Topper) in Mathematics IGCSE Grade 10 Board Exam 2023

National: Pramerica Emerging Visionaries Silver Award for social enterprise – That Little Helper; selected as a top 25 student-led social initiative from 2,200+ applications across India 2024

School: Merit Scholarship for IBDP program (value \$25,000, covers full school tuition for 2 years) 2023 – Present

INTERNATIONAL ACADEMIC HONORS AND AWARDS

Chemistry:

- CREST Gold (British Science Association): Innovative testing system to check efficacy of paint coatings 2024
- St Yau – Round 2: Scalable and sustainable Graphene Synthesis via Electrolytic Exfoliation 2024
- Avogadro Chemistry Competition (University of Waterloo) – Distinction (Top 10%) 2024

Mathematics:

- HKIMO (Hong Kong International Math Olympiad) – Gold 2024
- SIMSO (Siam International Math & Science Olympiad) – Gold 2024
- Fermat & Hypatia CEMC (University of Waterloo) – Distinction (Top10%) 2023 – 2024

Economics:

- Northeastern University London Economics Essay Competition (Finalist among 4,500+ entries) 2023

SCHOOL ACADEMIC HONORS AND AWARDS

- School Topper Award, by Members of Int’l Schools Association (MISA) for Grade 10 IGCSE Board Exams 2023
- General Proficiency Award, ABWA: 2021 – 2024
 - Grade 11 (IBDP score of 41/42)
 - Grade 9 and Grade 10 (A* in all 9 subjects)
- Academic Excellence Subject Awards, ABWA: 2021 – 2024
 - Grade 11 (7 in Math AA HL, Chemistry HL, Economics HL, Spanish B SL, Computer Science SL)
 - Grade 9 and Grade 10 (A* in all 9 subjects)
- Subject Highest Awards (Rank #1 in School), ABWA: 2021 – 2024
 - Grade 11: Chemistry HL, Economics HL, Computer Science SL
 - Grade 10: Mathematics, Chemistry, Spanish
 - Grade 9: Mathematics, Biology

CHEMISTRY EXPERIENCE & RESEARCH

Research:

Graphene Synthesis via Electrolytic Exfoliation (EE) Jun – Jul 2024

Graphene, a ‘wonder’ material discovered in 2004 is one of the most exciting fields in nanotechnology.

Summer Research under the guidance of Dr. A.S. Khanna (retd. IIT Bombay)

- Studied methods for graphene synthesis and its practical applications from existing literature
- Developed an electrolytic cell as a sustainable and scalable method for graphene synthesis; found the optimal range of electric current to obtain the highest quality and yield of graphene

Innovation:

Innovative Testing System to Check Efficacy of Protective Paint Coatings Jun – Jul 2023

Electrolab, Mumbai, India (www.electrolabgroup.com)

Electrolab manufactures pharmaceutical lab equipment.

Summer Research Intern under Aditya Marfatia, Director and Head of R&D

- Designed a novel testing system, inspired by a rotisserie grill, using available parts and supplies
- Proved that *HCL* is a better discriminatory agent to test coatings vs industry standard ‘salt spray test’, thus offering a successful alternate testing method for Electrolab in the future

Mentoring & Guidance

Teaching Assistant in the Chemistry Department, Aditya Birla World Academy, Mumbai, India Sep 2024 – Present

- Assisted faculty in teaching Grade 11 students; worked with Head of Science department to identify challenges faced by students and potential solutions
- Prepared presentations & conducted interactive activities on Chemistry HL topics such as hybridization

Analysis

Analysis of India's manufacturing competitive advantages in the global chemical industry

Dec 2023 – Jan
2024

Reliance Industries Ltd (RIL), Mumbai, India (www.ril.com)

RIL is a multinational conglomerate with diverse interests from petrochemicals to telecom.

Research Intern under Suyog Kotecha, Head of Strategy, Petrochemicals Division

- Examined global trends and India's competitive advantages and challenges for chemical manufacturing
- Identified key success factors (e.g., feedstock availability) and made strategic recommendations to RIL

ECONOMIC EMPOWERMENT

Founder, That Little Helper (TLH), Mumbai, India (www.thatlittlehelper.com)

2019 – Present

TLH is a multi-pronged initiative empowering 9 nonprofits and their members through 2 verticals:

- TLH Marketplace, a digital online portal:
 - Designed and developed a diversified e-commerce platform, establishing a digital presence for partner nonprofits; set up seasonal popup stalls to exponentially increase nonprofits' sales
 - Sold 3100+ products to 700+ consumers, generating INR 3M+ in revenue to support 240+ differently abled individuals; fulfilled 32 bulk orders from large corporates
- TLH Workplace, Economic Empowerment Program:
 - Advocated 'diversity in the workplace', encouraging corporates to hire neurodiverse individuals
 - Empowered 8 neurodiverse individuals by helping them secure employment in corporate India, pitching to 30+ firms

ECONOMICS RESEARCH

Strategic Study & Analysis

Pricing study to analyze and improve patient accessibility of the lifesaving cancer drug, Keytruda

Aug – Sep 2024

Merck, Sharp & Dohme (MSD), Mumbai, India

MSD is a \$50Bn global pharmaceutical company.

Strategy Intern, under Rehan Khan, CEO at MSD India

- Studied the global oncology market; analyzed cancer prevalence in India and mapped treatment options
- Developed and recommended a pricing model for Keytruda using economic variables such as GDP and income pyramid; potential increase in access by 15x to save patient lives

Independent Research & Analysis

Economics of graphene and its market applications, Mumbai, India

Jun – Jul 2024

As a two-part project, I analyzed the economic impact of graphene on both producers and consumers.

- Conducted economic analysis comparing Chemical Vapor Deposition (CVD) and Electrolytic Exfoliation (EE) synthesis methods; developed cost models demonstrating EE is 60x more cost-effective than CVD
- Explored the economic impact of graphene on the markets of Lithium-ion batteries and water filters, analyzing its impact on climate change and energy

LEADERSHIP

- House Captain, Vivekananda (Green) House, ABWA 2022 – 2023
 - Secured the 'Best Overall House' and 'Best Cultural House' awards under my leadership
 - Boosted participation and team spirit using time management, organization, and communication skills
- Head of Illustrations – ABWA Newsletter & ABMUN 2023 – 2025
 - Illustrated for the ABWA Newsletter with 25+ illustrations for 2 years prior to being promoted and contributed illustrations on famous personalities, school events, and environmental struggles
 - Selected, oversaw and managed a team of 10+ ABWA Newsletter illustrators for 2 years
 - Illustrated for ABMUN (ABWA MUN conference) as 'Deputy Head of Illustrations' (2023) prior to being promoted (2024); selected, oversaw and managed a team of 7 ABMUN illustrators

SUMMER PROGRAMS

- Yale University – Yale Young Global Scholars (YYGS) – Solving Global Challenges Jul 2023
 - Concentrated on an interdisciplinary approach to tackle current societal challenges, with specific focus on the future of AI; presented research on computer vision bias due to AI in the US criminal justice system
- Johns Hopkins University – Center for Talented Youth (CTY) – Mathematics of Competitive Behavior Jun – Jul 2022

SKILLS & INTERESTS

- Languages: English, Hindi, Gujarati, Spanish
- Interests: Nanomaterials, Microeconomics, Algebra
- Skills: Leadership, Creativity, Time Management, Communication, Organization
- Extracurricular Activities: Art, Music, Tennis