

INSTITUTE OF ADVANCED STUDIES

NANYANG TECHNOLOGICAL UNIVERSITY

Catalyse high-impact research | Transcend disciplinary boundaries | Expand knowledge & education frontiers

FEATURED ARTICLES

Quantum Dots Illuminate Nanoscience and the World

2023 Nobel Prize in Chemistry



The 2023 Nobel Prize in Chemistry was awarded to Moungi Bawendi, Louis Brus, and Alexei Ekimov for their pioneering contributions to the discovery and synthesis of quantum dots, which opens new frontiers in nanoscience and nanotechnology, providing avenues to engineer materials with extraordinary attributes.

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IAS Panel Discussion with Nobel Laureates and Eminent Scientists



Titled “Emergent Behaviours in the Quantum World,” the panel discussion featured Nobel laureates Prof Duncan Haldane and Prof Klaus von Klitzing, alongside Wolf Prize laureate Prof Bertrand Halperin. The panellists delved into scientific insights on current research interests, the evolving landscape of quantum mechanics education, and the potential of quantum computing, among other topics.

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EVENT HIGHLIGHTS

Lee Kong Chian Distinguished Professor Public Lecture by Millennium Technology Prize Laureates



Sponsored by Lee Foundation, the public lecture was held as a partner event of the Global Young Scientists Summit 2024 organised by the Singapore National Research Foundation.

Prof Martin Green (Millennium Technology Prize laureate 2022) delivered a presentation on cutting-edge technologies in solar power, leading to the achievement of “insanely cheap” solar energy. Sir Shankar Balasubramanian (Millennium Technology Prize laureate 2020) emphasised the role of Next Generation DNA Sequencing in enabling cost-effective and large-scale genome sequencing. Despite the diverse topics of solar cells and human genomes, the shared objective of cost reduction and the societal impacts of both technologies connected them.

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The public lecture concluded with a dialogue and tea session for NTU scholars and young scientists, providing them an opportunity to interact and discuss various questions with the two eminent speakers. Some topics covered were the genetic impact of lifestyle, solar module recycling, and the uncertain path of start-ups.

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Lee Kong Chian Distinguished Professor Public Lecture by Fields Medallist and Turing Award laureate



The public lecture, sponsored by the Lee Foundation and Paeonia Foundation, was organised as a partner event of the Global Young Scientists Summit 2024, with support from the Embassy of France in Singapore.

Prof Hugo Duminil-Copin (Fields Medallist 2022) highlighted the origins of percolation model, emphasising their relevance in understanding various phenomena. Prof Leslie Valiant (Turing Award laureate 2010) explored the interaction between humans and machines, advocating for active education to challenge arbitrary beliefs and drive technological progress by understanding human capabilities.

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A casual dialogue and tea session were organised before their public lecture, providing NTU students and young scientists with the opportunity to engage with the speakers and pose various questions, ranging from artificial intelligence and research challenges to practical suggestions for their academic journey.

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16th International Science Youth Forum (ISYF)



Hosted by Hwa Chong Institution with IAS@NTU support, this year’s forum focused on the important role of science and technology in driving sustainable and inclusive development, with consideration for their benefits for humanity and accompanying ethical considerations in addressing societal challenges. The NTU speakers for the masterclasses included Assoc Prof Soo Han Sen (CCEB), Assoc Prof Wu Wei (CEE) and Assoc Prof Sierin Lim (Graduate College).

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Quantum Industry Day 2023



Co-organised by the Institute of Advanced Studies (IAS), Institute for Pedagogical Innovation, Research and Excellence (InsPIRE), School of Physical and Mathematical Sciences (SPMS) and IBM Quantum, the event showcased leaders from IBM Quantum, Foxconn, NVIDIA, and A*STAR, who presented their latest developments and opportunities in the quantum computing field. It also featured a IBM workshop on quantum algorithms using the Qiskit platform.

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