

About The Department

The **Department of Applied Physics (AP)** was founded in 1987, and we are devoted to becoming a world-leading physics department. We brought in high-calibre scholars and researchers with diverse expertise to enrich our curriculum and scientific innovations. We focus on the development of cutting-edge technologies such as new materials, renewable energy, catalysis, artificial intelligence, and optoelectronics. We ranked the first amongst all physics departments in Hong Kong for the percentage of “world-leading” research work, according to the Research Assessment Exercise (RAE) 2020 of the University Grants Committee (UGC).

Career Prospects

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A degree in physics opens the door to a broad range of career choices. AP graduates are serving the society in key positions and have made significant contributions to the development of Hong Kong.

Tech-related: Data Scientist, AI Software Engineer, System Architect, System Analyst, Analyst Programmer, IT Consultant

Industry-related: Technology Consultant, Engineer, System Developer

Medical Services-related: Medical Physicist, Lab Manager, Quantitative Researcher

Research & Development-related: Researcher, Materials Engineer, R&D Engineer, Scientific/ Technology Officer

Financial Services-related: Quantitative Researcher, Data Scientist, Quant Developer

Education-related: Teacher, Instructor, Teaching Assistant

Graduates may also choose to further their academic pathway and pursue postgraduate studies in local or overseas universities.

Alumni Sharing

Hui Yeung-yu, Edwin

Graduate of
BSc (Hons) in Engineering Physics

Former Director of
DreamsAI Limited



Director of Big Data in the Network Department
(Technology & Innovation Department), China Unicom
Global

During my BSc and PhD programmes in AP, I developed critical thinking and problem-solving skills that have been invaluable in addressing everyday challenges and founding DreamsAI. DreamsAI is a pioneering startup specializing in Robotic Process Automation (RPA), an AI technology that streamlines business processes by mimicking human actions within digital systems.

Currently, I serve as the Director of Big Data within the Network Department (Technology & Innovation Department) at China Unicom Global. In this role, I lead the development of comprehensive AI solutions. By advancing technologies from large language models to multimodal systems, I aim to position China Unicom as a leader in innovative AI applications that drive high-quality growth across various industries. I invite you to join AP and embark on a transformative educational journey that will equip you with the skills to excel in your future career.

Tsoi Lai-wing, Coco

Graduate of
BSc (Hons) in Engineering Physics

Deputy Manager,
MedHealth Diagnostic MRI Centre



Stepping into a field that we never explore when we were students is never easy. Being a physicist in the medical field is definitely one of the biggest challenges in my life. The programme equips us with the mindsets of both scientists and engineers. Scientists' curiosity pushes me to keep exploring my own field while engineers' analytical mindset allows me to think independently and solve problems during my career. The soft skills I learnt allow me to face different challenges and provide me with competitive edges no matter which field I am involved in.

Exchange

- University of Sydney, Australia
- McGill University, Canada
- University of Waterloo, Canada
- The Institut National des Sciences Appliquées de Lyon, France
- Technical University of Munich, Germany
- Nagoya University, Japan
- National University of Singapore, Singapore
- Koç University, Turkey
- University of Birmingham, UK
- University of Liverpool, UK
- Case Western Reserve University, USA
- North Carolina State University, USA

Mak Laam Sin

Graduate of
BSc (Hons) in Engineering Physics

Exchange at
Koç University, Turkey



Studying abroad at Koç University in Turkey was transformative. I engaged with a vibrant community of diverse students, deepening my cultural understanding. The stimulating academic environment and supportive faculty enhanced my experience. Exploring Turkey's rich history and enjoying the local hospitality made this journey unforgettable. I truly treasure my time there for its unique blend of culture and warmth.

Overseas Internship

- Mitacs Globalink Research Internship, Canada
- Polytechnique Montreal, Canada
- China Merchants Bank, China
- Bundesanstalt fuer Materialforschung und -pruefung (BAM), Germany
- Helmholtz-Zentrum Dresden-Rossendorf, Germany
- Cracow University of Technology, Poland
- National Cheng Kung University, Taiwan

Shafayet Yaseen

Graduate of
BSc (Hons) in Engineering Physics

Internship at
**Helmholtz-Zentrum
Dresden-Rossendorf, Germany**

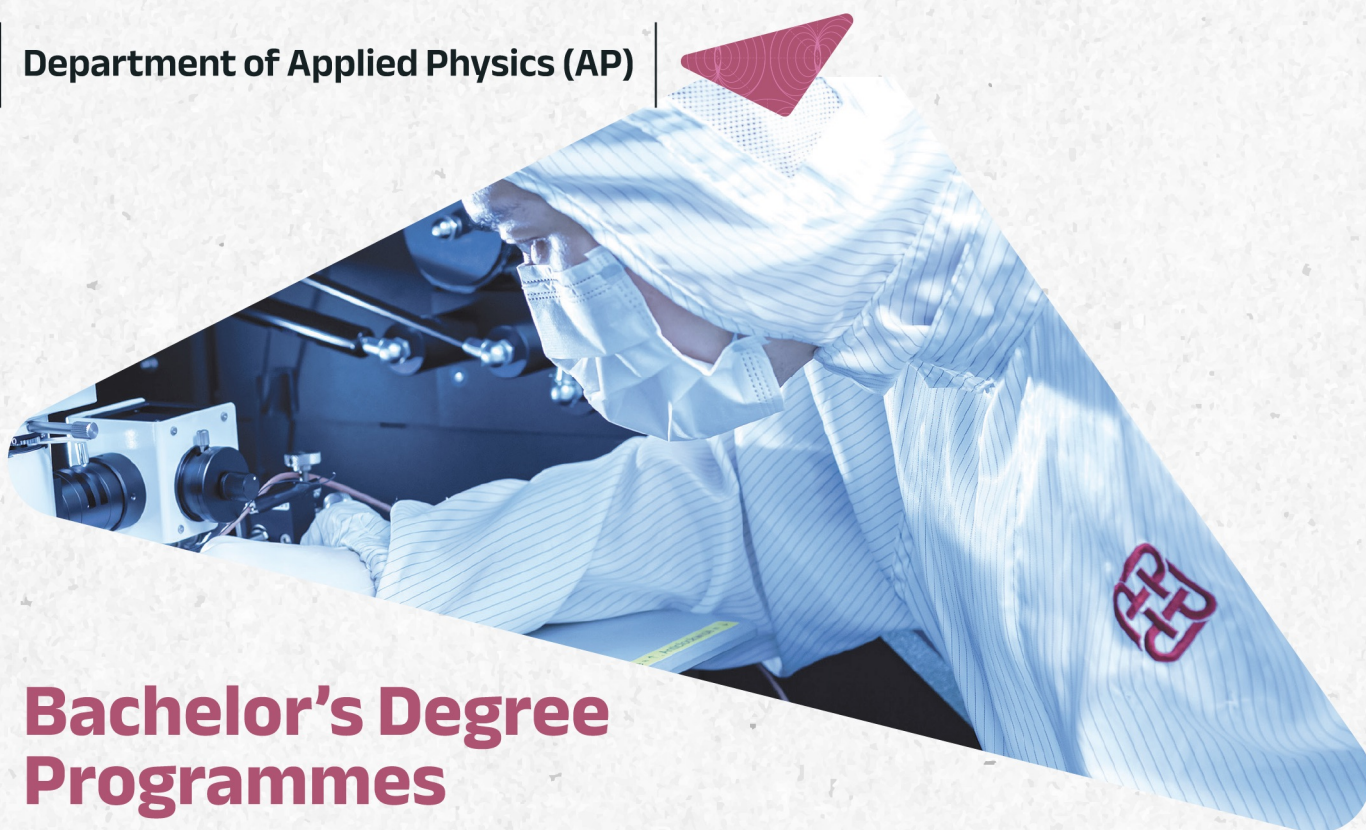


I had the incredible opportunity to intern at Helmholtz Zentrum Dresden Rossendorf in Germany under Professor Arthur Erbe. My work focused on developing novel nano-semiconductor devices without existing experimental methods. Professor Erbe's support was invaluable; his recommendation letter helped my postgraduate application and secured the Erasmus Mundus Scholarship, which is awarded to only 100 students globally each year with a highly selective acceptance rate of 3-5%.

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Local Internship

- Able Trillion
- Centre Testing International
- Chun Ling Engineering Limited
- Fresh Up Group Limited
- Hohenstein Laboratories (HK) Limited
- Interactive System & Technologies Limited
- Intertek Hong Kong
- Kam Tak Electrical Engineering Company Limited
- Linked-Technologies Limited
- Mimosas Solution Limited
- Mrs Cooky Limited
- Nano and Advanced Materials Institute (NAMI)
- Seedland Solutions Limited
- Sotera Rail Service Ltd
- ST Engineering Infa Systems Limited
- Sun On Engineering Co Ltd
- The Council of the Hong Kong Laureate Forum
- W3 Corporate Limited



Bachelor's Degree Programmes

BSc (Hons) in Physics with a Secondary Major in Artificial Intelligence and Data Analytics (AIDA)/ Innovation and Entrepreneurship (IE) (JS3030)

Students will be awarded both the Major and the Secondary Major awards upon the successful completion of the graduation requirements concerned.

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BSc (Hons) in Physics with a Secondary Major in Artificial Intelligence and Data Analytics (AIDA)

Students will be exposed to both fundamental and applied physics topics, as well as concepts in AI and data analytics. The infusion of the two disciplines throughout the curriculum down to subject levels consolidates students' learning, providing them with a competitive edge in the upcoming wave of technology development. The diverse range of topics covered in the curriculum include data analytics, machine learning, programming, neural networks, optical design with AI, smart sensors, and medical physics.

BSc (Hons) in Physics with a Secondary Major in Innovation and Entrepreneurship (IE)

The diversified curriculum covers fundamental and applied physics, innovation and business. A major highlight is the extended internship training in major technology enterprises or start-ups, providing golden opportunities for nurturing future innovation leaders. The diverse range of topics covered in the curriculum include materials science, smart sensors, scientific instrumentation, etc. Besides, students will learn practical business skills such as project planning and risk analysis.



Website

 <https://polyu.hk/WJHco>

Taught Master's Degree Programmes

After obtaining a Bachelor's Degree, graduates can continue to strive for further study in our Master's Degree Programme:

MSc in Microelectronics Technology and Materials (11044), 1 yr Full-time

This programme is designed to nurture high-calibre talents with knowledge and hands-on skills for the development of the booming microelectronics industry.

Based on the expertise of the Department in device physics and materials research, the one-year programme provides students with unique and professional-oriented education in the process flow of microelectronics and integrated circuit design, simulation, fabrication and processing, characterization, and inspection.

Recognition & Prospects

This programme provides extensive training for physicists and engineers to meet the national, regional and local demand for talents in the microelectronics industry. The programme is tailor-made to nurture expertise in integrated circuit design and manufacturing, in line with the national policy to support the development of scientific research and advanced manufacturing. This policy is strongly supported by local policies in Hong Kong and the Greater Bay Area, guaranteeing the career prospects of our graduates.

Liang Jiajun, Neil

Graduate of MSc in
Microelectronics
Technology and Materials

Data Analyst,
Aifin Technology Co., Limited



Hong Kong stands out as a unique international hub, and PolyU is well-known around the world for its exceptional faculty, cutting-edge laboratory facilities, and valuable learning experiences. This combination gives my classmates and me a competitive advantage after graduation, equipping us with the skills and knowledge to excel in our careers. As a result, I have decided to pursue my master's degree in Microelectronics Technology and Materials in the Department of Applied Physics at PolyU. This programme will not only provide me with a solid foundation in the technical aspects of microelectronics but also expose me to the latest advancements and trends in the industry. Furthermore, I anticipate that studying here will lead to higher starting salaries, better working environments, and clearer paths for career advancement compared to my peers in mainland China. Overall, I view this journey as an important step toward reaching my long-term career goals in the fast-changing field of microelectronics.

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Website

 <https://www.polyu.edu.hk/ap/>



Programme Details

 <https://polyu.hk/YCjaJ>

Enquiry

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