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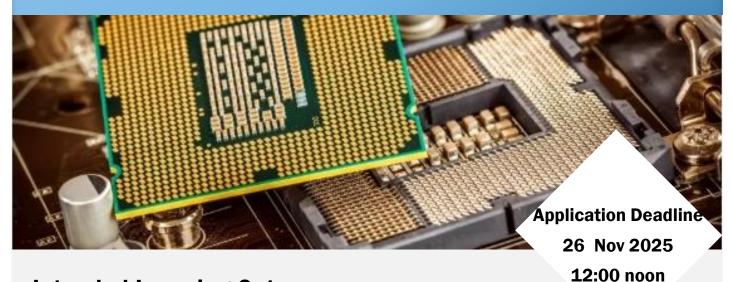
[ Gifted Programme ]

Academic Introductory Talk Series STEAM Talk (Level I)

# Turning Sand into Gold: The Transformation from Sand to Integrated Circuits

# Prof Shen Hai Hua

University of Chinese Academy of Sciences Hong Kong STEM Education Alliance



# **Intended Learning Outcomes**

Upon completion of the gifted programme, gifted students should be able to:

- 1. recognize integrated circuits as the cornerstone of information technology and vital to national development, and analyze China's latest advances and key challenges in independent semiconductor innovation;
- 2. develop passion for microelectronics and related STEM fields by exploring the sophisticated technology and engineering behind chip manufacturing.

# Academic Introductory Talk Series

# **Gifted Programme** Introduction

From humble sand to chips that rule the world - this is a microscopic marvel of human wisdom turning stone into gold. This talk will unveil how sand is purified into monocrystalline silicon and processed through sophisticated techniques like photolithography and etching to build "cities" of billions of transistors on a tiny chip, taking you through the core transformation journey of the information age. The talk will cover fundamental concepts in mathematics, physics, and chemistry in an accessible way. Students will learn how integrated circuit chips the foundation of the information industry - are designed and manufactured.

Professor Shen Hai Hua is a Professor and Doctoral Supervisor at the University of Chinese Academy of Sciences and a Distinguished Member of the China Computer Federation. She has led over 20 national research projects, including the National Key R&D Program of China, and has received numerous awards including the Beijing Science and Technology Award and the China Electronics Society Science and Technology Award. She is dedicated to cultivating technological talent and promoting science education.

#### **Schedule**

Session	Date	Time	Venue
1	6 Dec	10:00 a.m 12:00 noon	Pui Kiu Middle School

## Suitable for

- S1 S6 HKAGE student members in 2025/26 school year only.
- Class size: 100
- \* First-come, first-served.

# **Medium of Instruction**

Putonghua

## Certificate

E-Certificate will be awarded to participants who have attended the talk.

# Remark

Starting from the 2025/26 school year, after the first review period, ALL student members must complete the following requirements in each school year in order to maintain their membership:

- Attend One Talk: AND
- Participate in One programme or activity of any kind

This talk is one of the items in the five domains of the Holistic Talk Series. The objective is to facilitate the all-round development of student' gifted potential.





