



Technical seminar: Crystal matching during IC design (23 Apr)

IC design is vital for every electrical appliance. It will critically affect the performance of the device. HKSTP is pleased to present this seminar to technical professionals engaged in IC and electronics fields.

In this seminar, the speaker will present,

1. *What is a Quartz Crystal?*
2. *Major parameters for quartz crystal*
* ESR, CL, Q
3. *Design consideration for a crystal oscillator*
4. *What is $A\beta \gg 1$?*
5. *How to convert a digital gate to an analogue Amplifier ?*
6. *Major parameters for an Oscillator*
* Negative resistance, Drive level and Load Capacitance
7. *Matching between oscillator and crystal*
8. *Do we need AGC ? or AVC ?*
9. *Sine Wave, Clipped sine wave, Square Wave, and Schmitt trigger*
10. *Trimming Sensitivity and Frequency Error Budget*
11. *Temperature Characteristic of Quartz Crystal*
12. *Crystal Reliability consideration*
13. *Dead Crystal, Intermittent and Sleeping Crystal*

Free Admission

Seats reserved on first-come-first-served basis!
register by **21 Apr (Tue)**

Register Now



Who Should Attend?

- IC Professionals
- Electronics technical professionals

Date:	23 Apr 2015 (Thur)
Time:	3:00pm – 4:30pm
Speaker:	Ir Arthur Kam-Hung LEE Chairman, Founder and Technical Director of Kolinker Group of companies
Venue:	TecONE, S046, Lakeside 2, Phase 2, Science Park
Language	Cantonese (with English terminology)
Charge:	Free of charge

**Programme subject to change without prior notice*

For more training details, please visit [here](#).

Enquiry: Mr Antony Kwong (852) 2629 6640
Email: antony.kwong@hkstp.org

Hong Kong Science & Technology Parks Corporation
8/F, Bio-informatics Centre, 2 Science Park West Avenue,
Science Park, Shatin, Hong Kong

T : +852 2629 1818

hkstp.org

About the speaker

Ir Arthur Kam-Hung LEE, Chairman, Founder and Technical Director of Kolinker Group

Arthur is the chairman, founder and technical Director of Kolinker Group of companies since its inception in 1983.

Kolinker Group is one of the leading manufacturers in the quartz crystal industry worldwide. Main focuses of the Group are in quartz crystals, resonators, ultrasonic sensors and various related products and equipment. Total employment at current (2014) level is over 1,000, inclusive of management, technical and production areas.

Mr. Lee has devoted much of his leisure time by actively involved in governmental, social and educational sectors in both Mainland China and the HKSAR. Currently he is a member of The Election Committee for the HKSAR Chief Executive, Chinese People's Political Consultative Conference (Guangxi Zhuang Autonomous Region), Hong Kong Affairs Committee Advisor of the Hong Kong Young Industrialists Council, Founding Honorary Life Vice President of The Hong Kong Polytechnic University Development Foundation, Member of the Project Assessment Panel of the Small Entrepreneur Research Assistance Programme (SERAP), Chairman of Fire Safety Ambassador Honorary Presidents' Association, Member of District Fire Safety Committee (Kowloon City District), etc.

Besides actively and generous contributing to various charities and devoting time and efforts to promoting a harmonious and better China and HKSAR, Mr. Lee has established scholarship under his personal and corporate names in the Hong Kong Polytechnic university and the Vocational Training Council students in need.

EDUCATION and EARLY CAREER:

Born into a 'basic' family in Kowloon City, HK, Mr. Lee attended La Salle Primary School and La Salle College until completion of Matriculation. He was an active member and one of the leaders in student governance and achieved the post of Discipline Board Chairman in Form 6. In order to decrease the financial burden of his family, Mr. Lee chose to continue his study in Hong Kong instead of studying abroad and enroll at the then Hong Kong Polytechnic (HK Poly U) for the Higher Diploma in Electronics Engineering. In order to make a head start in the professional sector, he worked extremely hard to expedite the professional engineer's qualification (Council of Engineering Part II). Despite achieving successes in the business sector, Mr. Lee attended and received a Master of Science in Engineering Business Management (awarded jointly by The Hong Kong Polytechnic University and Warwick University, UK) in 2008. First employment was at the International Piezo Ltd. as an entry level electronic engineer. Within one year he was promoted to be a supervisor in charge of R & D projects. Next employer was the Hong Kong Productivity Council as a Field Application Engineer and was instrumental in having a Computerized Time Recorder System established in the local market.