Title: Macro Insights for Gas Chromatography-Mass Spectrometry (GC-MS) and Fourier-Transform Infrared Spectroscopy (FTIR) Software

Synopsis: Currently, a wide array of useful tools, such as robotic systems, Robotic Process Automation (RPA), Excel Visual Basic for Application (VBA), and barcode systems, are available for laboratory digitalisation and automation. However, a simpler yet effective approach for optimising analytical instrument processes is macro writing, which involves writing commands to customise existing instrument software. In this presentation, Yan Kai will share insights on using built-in macros for GC-MS and FTIR software, and how this approach has enabled the optimisation of work processes, such as performance verification, library searches, and data processing.

SPEAKER:

Mr. Lee Yan Kai
Senior Forensic Scientist
Illicit Drugs Division
HSA

About Yan Kai:

Yan Kai is a Senior Forensic Scientist from the HSA, Singapore with 14 years of experience working in the field of Illicit Drugs analysis. He graduated from the National University of Singapore, with a Master Degree in Chemistry and joined the Illicit Drugs Laboratory since 2009. Yan Kai specialises in forensic examination and analysis of seized drug exhibits and is a member of the laboratory's clandestine team who responds to potential clandestine laboratory situations in Singapore. He is also an experienced Gas Chromatograph-Mass Spectrometer (GC-MS) user who proactively self-learnt and utilises built-in macro to streamline procedures to enhance efficiency.

SPEAKER:

Mr. Koh Su Yong
Technical Specialist
Forensic Science Division
HSA

Title: Streamlining Workflows with Excel VBA: Automating Tasks for Digital Transformation

Synopsis: VBA (Visual Basic for Applications) is Microsoft's programming language that not only allows users to write code to automate repetitive and routine tasks but also create/develop custom management systems in Excel. This presentation will provide examples of how VBA's customised user-defined functions are used in the following laboratory system/process: -

- Digital Key Log system
- Alerts for Master List of Controlled Documents and Forms

Compared with the previous processes, using VBA ensured consistent output, significantly increased productivity, and reduced the risk of errors. VBA is a useful tool to help forensics laboratories optimise their resources and remain competitive in a rapidly evolving landscape.

About Su Yong:

Su Yong is a Technical Specialist at the Forensic Science Division in HSA, Singapore. He has been working in the forensic science field for 8 years, specialising in Trace Evidence (Fibres), Textile Damage and Traffic Crash Reconstruction. He received his education from the National University of Singapore. He is part of the digitalisation team that has been spearheading paperless initiatives and work innovation projects, developing multiple in-house digital solutions within the laboratory. The digitalisation efforts of his team have helped the laboratory in automating processes, minimising human-errors and improving laboratory efficiency.

Title: Digitalisation Journey of HSA's Forensic Science Division

SPEAKER:

Mr. Louis Koh
Senior Forensic Scientist
Forensic Science Division
HSA

Synopsis: From 2019, HSA's Forensic Science Division has moved to fully digital processes, leveraging digital solutions from the organisation tech stack, SharePoint framework, robotic process automation (RPA) and custom-developed software.
Louis will discuss how a number of these tools have transformed the way work is done at the Division, and the need for upskilling and adaptability. In addition, Louis will also address design and security concerns and the steps taken to ensure that the technologies are used responsibly and in conformance with accreditation standards.

About Louis:

Louis is a Senior Forensic Scientist with the Forensic Science Division, HSA, Singapore. Over the course of a decade conducting testing in an accredited laboratory, he has acquired expertise in crime scene and bloodstain pattern analysis, footwear impressions, materials and physical comparisons, digital and video/imaging evidence examinations. Presently, he leads the impressions and digital evidence disciplines and is a certified digital forensics examiner. He holds an honours degree in Chemistry and Biological Chemistry from the Nanyang Technological University. Louis also spearheads the team that transitioned the laboratory to a fully digital records and information management system in 2020. Since then, the team has implemented robotic process automation solutions for casework and laboratory instrumentation and continues to drive adoption of innovative ways of working, improving efficiency and accuracy in forensic testing. Louis is also current Chair of the AFSN CSI Working Group.