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Title of presentation: Innovating Internet of Things (IoT) for sustainability – a journey from research to standards (40min)
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Abstract:

KF Tsang's work exemplifies pioneering research driving global standards for sustainable innovation. In this talk, I will present my development of high-density Advanced Metering Infrastructure (AMI) and the integration of AIoT to enable smarter, greener buildings. These initiatives culminated in IEEE 2668, a maturity index for IoT that supports responsible, energy-efficient adoption. I will share the journey from initial concept to IEEE approval, highlighting the value of standardized frameworks in advancing long-term sustainability. By bridging interdisciplinary collaboration and engaging with regulatory bodies like IEEE CTSoc, I advocate for scalable solutions that foster ethical and quantifiable progress and transparent infrastructure—laying the foundation for smart city development and a more sustainable and interoperable future.

Biography:

Kim Fung TSANG is a Chief Scientist and Professor at the Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, PRC. Renowned for his expertise in AIoT (Artificial Intelligence of Things) and smart technology applications, he has received prestigious accolades, including the IoT Heroes Award (2016) and the IEEE Product Safety Engineering Society Outstanding Achievement Award (2021).

KF plays a key role in shaping IoT standards and best practices and serves as a consultant to the Hong Kong Government. He is the architect of IEEE Standard 2668 Maturity Index for IoT (IDex), a transformative framework approved by IEEE in December 2022. Since its establishment, he has been actively assisting industries in adopting IDex, particularly through his collaboration with the Electrical and Mechanical Services Department (EMSD) to integrate IEEE 2668 into the government's GWIN system. His ultimate goal is to develop and proliferate IoT Best Practices globally. Additionally, he contributes to quality assurance in IoT systems by serving as an assessor for the Hong Kong Laboratory Accreditation Scheme (HOKLAS).

In alignment with IoT standardization, KF chairs several key IEEE standards workgroups: IEEE 2668 Maturity Index for Internet of Things; IEEE P1451.5.5 LoRa Smart Sensor Interface; IEEE P1451.5.6 SigFox Smart Sensor Interface; IEEE P1451.5.10 NB IoT Smart Sensor Interface.

Beyond his contributions to IoT and standards development, TSANG holds numerous roles, including: Vice Chairman of IEEE Fellow Evaluation Committee (FEC) of IEEE Consumer Technology Society; IEEE Fellow Evaluator of IEEE Product Safety Engineering Society; Editor-in-Chief of the IEEE Transactions on Consumer Electronics; Chairman of the Standards Committee, IEEE Consumer Electronics Society; Associate Editor of the IEEE Transactions on Industrial informatics; an Associate Editor of the IEEE Transactions on Industrial Electronics; Associate Editor of the IEEE Industrial Electronics Magazine; AdCom member of IEEE Systems Council; AdCom member of IEEE RFID Council; a President of Asia-Pacific Association of Cognitive Intelligence; a Council Member of The Hong Kong Institution of Engineers (HKIE).

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