

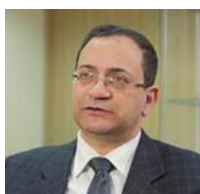
AI Enabled miniaturized spectrometers: Can AI support Optical MEMS technology to achieve its promise?

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Miniaturized spectrometers are basic tools for material identification and quality of life control. They can penetrate and create many applications in the market in different domains from gas sensing to waste sorting, water food and beverage monitoring, pharmaceutical quality control to Viruses and harmful bacteria detection. However, to achieve their promise in the low cost and wide spread technology everywhere and for everyone, they need a strong support from the signal processing and AI algorithms, big data analysis and machine learning such that they can transform spectral data into material signatures. In this talk we present our recent efforts for the development of an AI enabled spectral sensor solution targeting better quality of life control. The talk will try to answer the question: Can AI enable miniaturized spectrometers to fulfill their promise and overcome their limitations?



Short Bio:

Diaa Khalil has over 40 years of experience in micro and nano photonic systems. He obtained his PhD from INPG France in 1993. He is Professor of photonics since 2004 in ASU where he was also the Chairman of the ECE Dept., the vice dean of research and the acting dean. He was also the CEO of the Innovators Support fund ISF in Egypt. He supervised more than 80 MSc and PhD. From 2007 to 2020, he was the CTO of the Optical MEMS Division in Si-Ware Systems. He is currently Chief Scientist in Si-Ware Systems and in the company Infinilink. He is inventor of more than 25 patents and patent applications, author and co-author of more than 370 publications, 6 book chapters and 1 book. He is a member in the editorial board of the Nature journal, Light: Science and Applications, and associate editor of the IEEE-PTL journal. He is a holder of the Egyptian State appreciation prize in engineering sciences in

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