

Abstract and CV : Teerakiat Kerdcharoen



Teerakiat Kerdcharoen received BSc and MSc in Chemistry from Chulalongkorn University in 1990 and 1992, respectively. As an Austrian-Thailand Exchange Student, he received his PhD in Chemical Physics from University of Innsbruck, Austria in 1995. Presently, he is faculty member in the Department of Physics at Mahidol University. He was a recipient of the Thailand Young Scientist Award in 2001, Thailand Research Fund's Outstanding Research in 2008 and 2019, Mahidol University's Publication Prize in 2009 and 2017, Mahidol Award on Invention and Innovation in 2016, Invention Award, National Research Council of Thailand in 2015, 2017, 2020. His research theme is "Smart Sensing" that cover the topics of electronic nose, electronic tongue and tactile sensors etc. He has published more than 170 papers archived in the ISI/SCOPUS/IEEE databases and owned 10

patents. He has co-founded 3 university-based Tech Startup companies in 2016. Recently, he is serving as Chief Technology Officer of these startups.

Digitization of Human Body Odor – Method, Devices and Application in Digital Health

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Abstract

Recently, internet-of-things (IoT) health monitoring systems have become of unprecedented interest owing to their versatile functionalities such as being point-of-care, easy-to-use, low-cost and real-time. So far, various wearable devices based on measuring of physiological signals and biokinetics have been proposed but only a few if not at all have existed based on measurement of the body odor. In this lecture, we will present the benefits of human body odor detection based on our research experience on the past several years. We will show the results to support the notion that volatile organic compounds as released from the human body can give some information about diseases, behavior and health status of a person. In addition, it was found that body odor is one of the physical characteristics of a human that can be used to identify people. We have invented various platforms to make electronic nose (e-nose) wearable, including armband e-nose, sniffing shoes and smelling shirts. These novel devices can collect human body information based on the volatiles released from the armpits and feet of human and transmit the data wirelessly, showing a viable potential for real-time personal healthcare monitoring.