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IoT-based Portable and Wearable Sensors for Remote Health/Environmental Monitoring System



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ABSTRACT:

Common air pollutants, including greenhouse gases, volatile organic compounds, and even cleaning/sanitizing products for coronavirus, have adverse effects on the human body and the environment as they have been linked to cancers, asthma, and various neurological problems. In addition, COVID-19 by itself is a newly emerging human infectious disease and causes respiratory illnesses of varying severity from the common cold to fatal pneumonia in both humans and animals. Therefore, the need and demand for low power, sensitive, selective and robust sensors at room temperature are significant in many fields, including military, environmental, biomedical, agricultural, automotive, wearable, and industrial emission applications, due to the impact of COVID-19 crisis. This talk will provide an overview of my research interests in biological, chemical, and physical sensor development for remote health/environmental monitoring systems and highlight some of my previous work on materials synthesis and sensing applications.

BIOGRAPHY:

Dr. Soaram Kim is an Assistant Professor in the Department of Electrical and Computer Engineering and an affiliated faculty in the Center for Remote Health Technologies and Systems at Texas A&M University. He received his B.S. and M.S. degrees in Nano Engineering from Inje University in 2012 and 2014, respectively, and the Best Thesis Award from Inje University in 2014. He received his Ph.D. degree in Electrical Engineering from Clemson University in 2018. Following his graduation, he served as a Postdoctoral Researcher at the Institute for Research in Electronics and Applied Physics, University of Maryland, College Park from 2018 to 2021. He also served as a Robert J. Eichelberger Distinguished Postdoctoral Fellow residing at the U.S. Army Research Laboratory (Adelphi, Maryland) for a year before joining Texas A&M University. He has been a conference technical director for the 62nd Electronic Materials Conference (EMC 2020, virtual) and an organizer for the Symposium on 2D and other Low-dimensional Materials (American Conference on Crystal Growth and Epitaxy) since 2021. His research interests include flexible/wearable electronics, multifunctional sensors, health/environmental monitoring systems, and energy harvesting and storage devices. He has published over 65 journal articles and presented more than 75 conference talks. His research has also resulted in 3 issued patents and 2 invention disclosures.