

Embedded Electrochemistry with Miniaturized, Drone-Based, Potentiostat System for Remote Detection Chemical Warfare Agents

Authors : Amer Dawoud, Jesy Motchaalangaram, Arati Biswakarma, Wujan Mio, Karl Wallace

Abstract : The development of an embedded miniaturized drone-based system for remote detection of Chemical Warfare Agents (CWA) is proposed. The paper focuses on the software/hardware system design of the electrochemical Cyclic Voltammetry (CV) and Differential Pulse Voltammetry (DPV) signal processing for future deployment on drones. The paper summarizes the progress made towards hardware and electrochemical signal processing for signature detection of CWA. Also, the miniature potentiostat signal is validated by comparing it with the high-end lab potentiostat signal.

Keywords : drone-based, remote detection chemical warfare agents, miniaturized, potentiostat

Conference Title : ICARES 2022 : International Conference on Aerospace Robotics and Embedded Systems

Conference Location : Singapore, Singapore

Conference Dates : May 05-06, 2022