

Documents

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Development of an iOS Application Leveraging PalmSens MethodSCRIPT for Rapid COVID-19 Detection
(2023) *ICSIMA 2023 - 9th IEEE International Conference on Smart Instrumentation, Measurement and Applications*, pp. 290-295.

DOI: 10.1109/ICSIMA59853.2023.10373427

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Abstract

In light of the ongoing challenges posed by COVID-19 and the need for rapid diagnostic tools, we migrated our electrochemical potentiostat-based diagnostic tool from a desktop application to an iOS platform that is more portable and accessible. Our primary goal was to improve portability, enhance the user experience, and expand accessibility. Figma was used to create the app's design blueprint, allowing for an intuitive and user-friendly interface. Integrated user feedback guided subsequent design refinements. The development then took place using MethodSCRIPT and Swift, explicitly tailored for MacBook OS and iPhone devices. The application's seamless integration with PalmSens-supported NACOTS devices guarantees accurate and real-time data acquisition. Essential functions include setting operator names and sample IDs, initiating scans of NACOTS devices, and reading samples using Differential Pulse Voltammetry (DPV), which provides rapid diagnostic results. Moreover, graphical representations of DPV signals and the ability to share results increase the application's utility. Early evaluations demonstrate the app's usability with minimal training, complemented by its insightful screenshots. With this iOS application, we contribute to global efforts to democratize rapid diagnostic solutions, which are essential in regions with limited diagnostic facilities. This initiative addresses the current COVID-19 scenario and lays the groundwork for addressing future health crises. © 2023 IEEE.

Author Keywords

COVID-19; Electrochemical potentiostat; mobile application; Rapid testing

Index Keywords

Blueprints, Data acquisition, User interfaces, Voltage regulators, Voltammetry; Desktop applications, Diagnostics tools, Differential pulse voltammetry, Electrochemical potentiostat, Electrochemicals, Mobile applications, Potentiostats, Rapid testing, User friendly interface, Users' experiences; COVID-19

Funding details

Kementerian Sains, Teknologi dan Inovasi MOSTICV02211032, SPG22-026-0026
Ministério da Ciência, Tecnologia e InovaçãoMCTI
Hokkaido UniversityHU
International Islamic University MalaysiaIIUM
Universitas TelkomTel-U

The Electrochemical Material and Sensor (EMaS) Research Group at the Faculty of Applied Sciences, University Teknologi MARA, the VLSI-MEMS Research Group at IIUM, and the Institute of Medical Research collaborated on this work (IMR). We appreciate the funding and support provided by the Ministry of Science, Technology, and Innovation (MOSTI) under grant number CV02211032 (SPG22-026-0026). The IMR granted ethical approval for the SARS-CoV-2 experiments, ensuring the responsible conduct of research. The NACOTS block diagram and PCB design presented in this paper may be subject to copyright restrictions. Any use or reproduction of these materials must comply with all applicable copyright and intellectual property laws. The authors are grateful to Hokkaido University and Telkom University for their collaboration in this iOS mobile application development.

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Publisher: Institute of Electrical and Electronics Engineers Inc.

Conference name: 9th IEEE International Conference on Smart Instrumentation, Measurement and Applications, ICSIMA 2023

Conference date: 17 October 2023 through 18 October 2023

Conference code: 196121

ISBN: 9798350343380

Language of Original Document: English

Abbreviated Source Title: ICSIMA - IEEE Int. Conf. Smart Instrum., Meas. Appl.

2-s2.0-85183472312

Document Type: Conference Paper

Publication Stage: Final

Source: Scopus

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