

## Documents

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**Design and Development of an Intuitive Desktop Application for Rapid SARS-CoV-2 Diagnosis Using Electrochemical Potentiostat**

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**Abstract**

Since the early 2020s, the world has grappled with the COVID-19 pandemic, unleashed by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The pressing need for swift and reliable diagnostic techniques became evident as this global crisis unfolded. While numerous approaches for early detection continue to evolve, the quest for innovative methods remains constant. In light of this, our research project aimed to develop and evaluate a highly efficient desktop application meticulously designed for a SARS-CoV-2 testing device based on electrochemical potentiostat principles. Our primary focus revolved around creating a user-friendly desktop application, seamlessly integrating an algorithm that automates result generation for operators. We successfully constructed the application by leveraging the robust Electron framework and employing HTML, CSS, and JavaScript languages. In addition to its exceptional performance, our application boasts an intuitive graphical user interface (GUI), enabling operators to familiarize themselves with the system through concise training periods swiftly. By merging cutting-edge technology and user-centered design, our solution sets a new standard for efficient and accessible SARS-CoV-2 testing. © 2023 IEEE.

**Author Keywords**

and cross-platform apps; desktop application; electrochemical potentiostat; SARS-CoV-2; Web technologies

**Index Keywords**

Diseases, Graphical user interfaces, Personnel training, Voltage regulators; And cross-platform app, Cross-platform, Design and Development, Desktop applications, Diagnostics techniques, Electrochemical potentiostat, Electrochemicals, Potentiostats, Pressung, Web technologies; Coronavirus

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