



SOFTWARE DEVELOPMENT FOR A PROTOTYPE AIR JET INDENTER FOR USE IN OPTICAL COHERENCE ELASTOGRAPHY OF SOFT MATTER

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Introduction

Optical Coherence elastography boasts promise of broad applications, including cancer diagnosis and the detailed characterization of arterial wall biomechanics. This has encouraged researchers and developers to further explore system enhancements

Motivation

The system development of a prototype Air Jet Indenter of **high sampling rate** for use in Optical Coherence Elastography of Soft Matter

System Architecture

The system incorporates two main software:

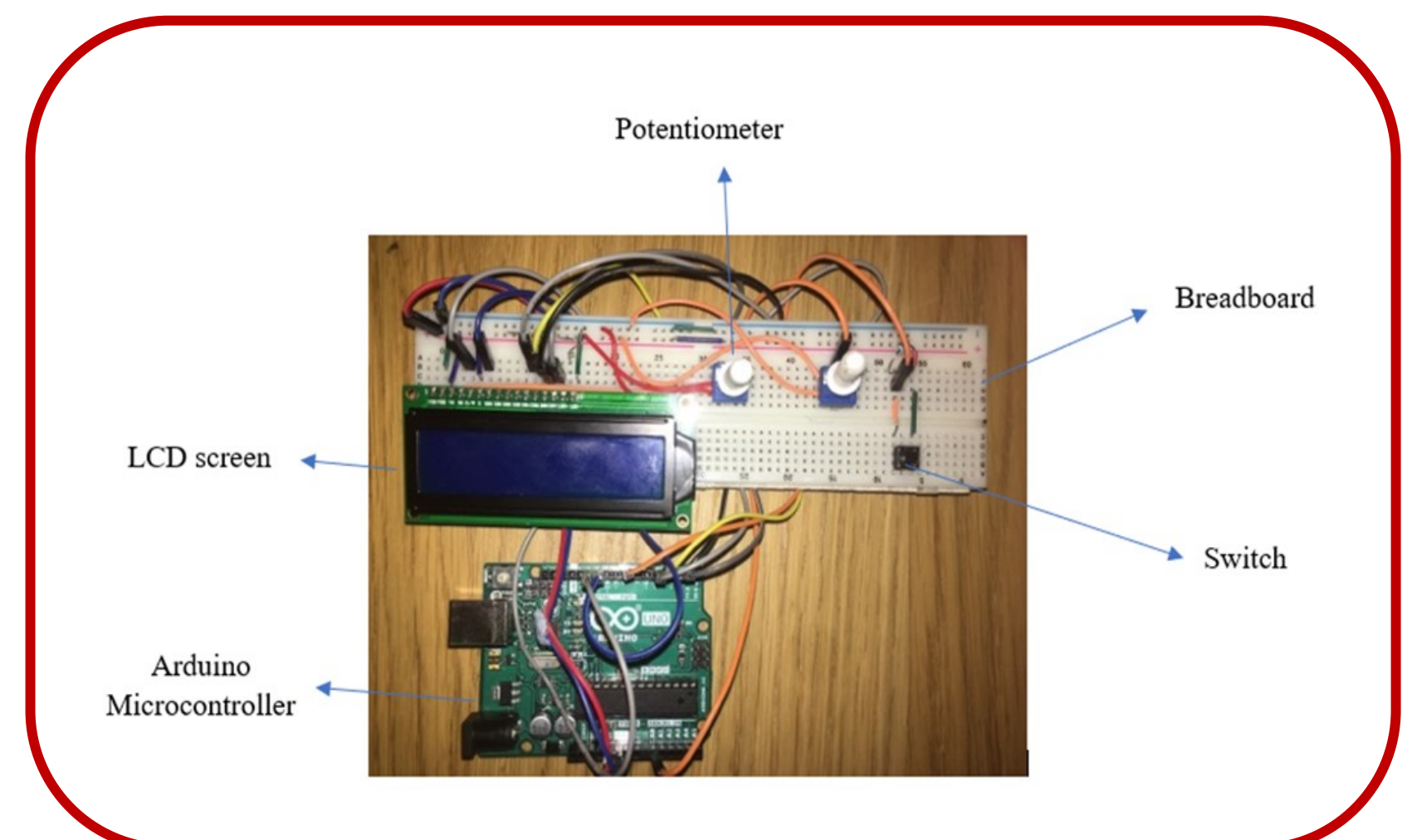
- **Arduino IDE** for open loop control and data processing
- **MATLAB** for data post-processing and Analysis.

The Arduino Microcontroller operates the Air jet indentation system by controlling the ball valve while simultaneously printing the system information to the serial monitor. MATLAB software compiles data from the serial monitor in real time and hence plots Pressure-Time graphs of the system. This data is collected in real-time via the developed MATLAB software and is displayed in graphical form. The graph is hence automatically saved to a specified folder on the computer.

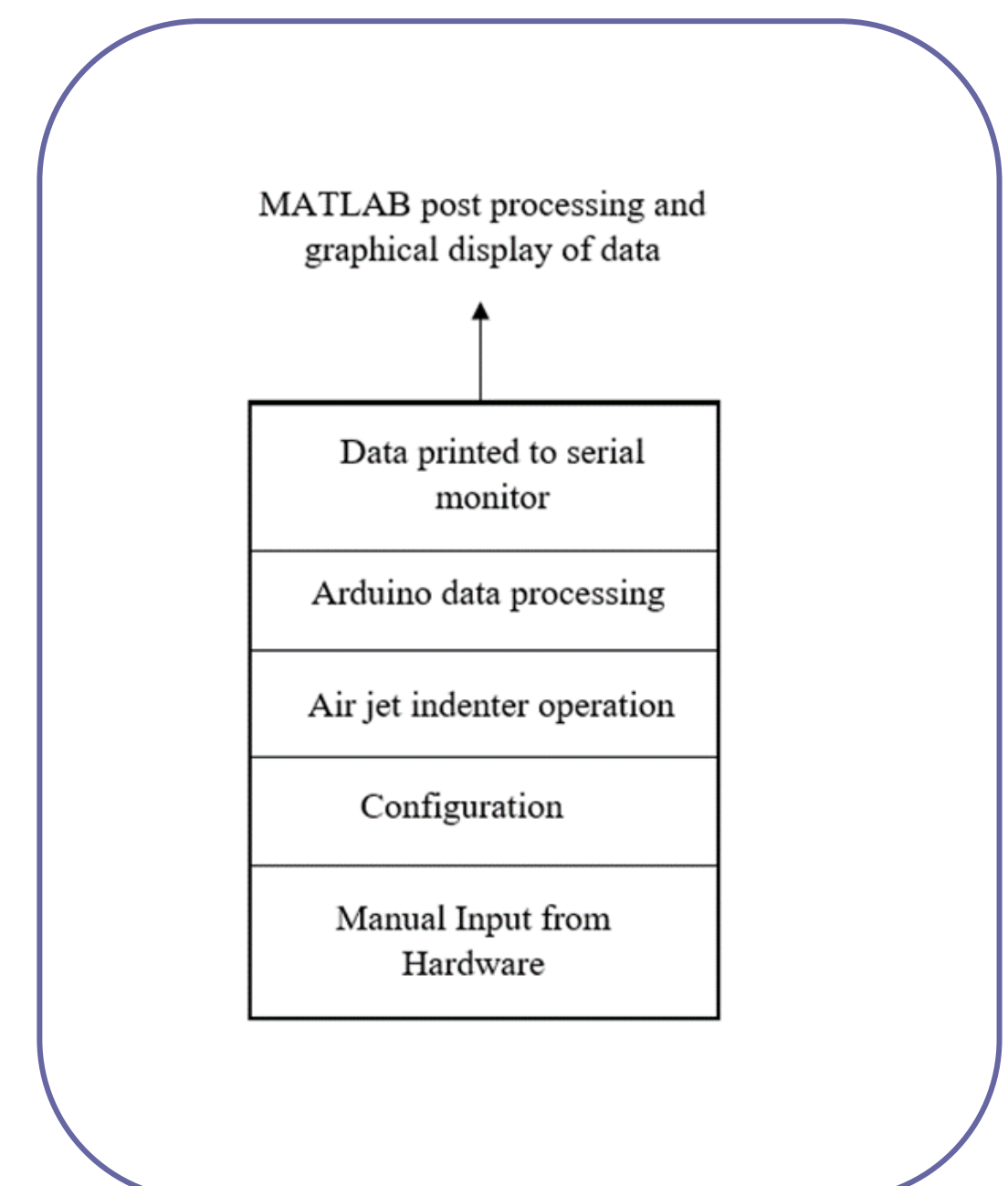
Conclusion

The Air jet indentation system collects and plots data at a frequency of 60hz. The system displays ease of deployment, high sampling rate and ease of use and configuration.

Hardware setup



Software Architecture



Post-processed graphical results

