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ARDUINO-BASED TURBIDIMETER

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Arduino-Based Turbidimeter

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ABSTRACT

Turbidity, measured in nephelometric turbidity units (NTU), is commonly used to assess water quality. Turbidity is determined using a turbidimeter, which measures how much light is scattered by material suspended in a water sample. This project aimed to develop a lost-cost open-source portable turbidimeter using next-generation light sensors. The tabletop Arduino-based turbidimeter was tested using various turbidity solutions made from 2% milk in distilled water for proof of concept. For each sample, a digital output response was measured for two sensors, one at 900 and one at 1800, and turbidity was measured using a commercially available turbidimeter. Combining data from the tabletop Arduino-based turbidimeter, an average calibration was found to convert the digital output to a Turbidity value in NTU. The Arduino-based measured Turbidity was within 0.5 standard deviations of a widely used commercial turbidimeter. The table-top Arduino-based Turbidimeter proved to be successful in converting the digital output to a standard turbidity value for a fraction of the cost. Final testing is being conducted on the portable Arduino-based turbidimeter which will be available for a live demonstration.

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