Development of Multiparametric Microfluidic Chip Focusing on Water Quality Monitoring

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This research addresses the widespread issue of drinking water contamination in resource-constrained areas. We propose using cost-effective multiparameter microfluidic chips to assess water quality parameters: turbidity, arsenic concentration, and microbial count - each representing physical, chemical, and biological property. For each of the three parameters, an appropriate colorimetric detection method was adapted to be used in the microfluidic chip device. Validation involves spectrophotometric measurements and RGB analysis by using Image J. This study aims to contribute to a better understanding of water quality assessment in challenging environments, promoting public health protection.

Awards Won:

Third Award of $1,000