

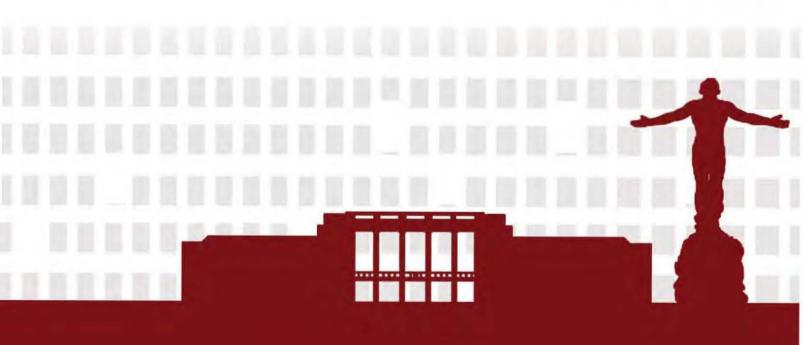


Smarter and Resilient Societies

co-located with



16-17 November 2015 Metro Manila, Philippines



Proceedings of the 8th AUN/SEED-Net RCEEE 2015 and 11th ERDT Conference on Semiconductor and Electronics, Information and Communications Technology, and Energy

Editors: Dr. Joel Joseph S. Marciano Jr. Dr. Jhoanna Rhodette I. Pedrasa Dr. Rhandley D. Cajote

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ISBN: 978-616-406-075-3

Published by: ASEAN University Network / Southeast Asia Engineering Education Development Network (AUN/SEED-Net) JICA Project Faculty of Engineering, Bldg. 2 Chulalongkorn University, Bangkok Thailand 10330

Printed in the Philippines by: ERZALAN PRINTING PRESS 45 Cotabato Street, Luzviminda Village, Batasan Hills, Quezon City, Philippines

8th AUN/SEED-Net Regional Conference on Electrical and Electronics Engineering 2015

co-located with

11th ERDT Conference

on Semiconductor and Electronics, Information and Communications Technology, and Energy

Envision, Enable and Empower Smarter and Resilient Societies

Published by: ASEAN University Network / Southeast Asia Engineering Education Development Network (AUN/SEED-Net) in partnership with Engineering Research and Development for Technology (ERDT) and University of the Philippines Diliman.

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MICROCONTROLLER-BASED MONITORING SYSTEM FOR WATER FILTRATION (MMSWF)

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ABSTRACT

Water is a main necessity to people. It is a must for us to have a reliable drinking water source. Good quality of water is needed for human consumption and it should be drinkable inside or even outside of the locality. After natural disasters, communities can be devastated from a lack of clean water. This can lead to death through dehydration, malnutrition, lack of sanitation, and disease propagation.

When tropical storm Sendong (international name Washi) hit Iligan City, Philippines, the city's water shortage continues to hounds the residents of Iligan City and water sources became contaminated and not good for drinking anymore according to the National Disaster Risk Reduction and Management Council (NDRRMC). The water pipes connecting the dam and the reservoirs were damaged resulting to water shortages in the locality even up to the present time. As a result, waterborne diseases such as diarrhea, cholera and amoebiasis were acquired by some residents especially children due to drinking water from NAWASA (National Water and Sanitation Association).

This research study designed and developed a prototype of a portable microcontrollerbased monitoring system for water filtration, which aimed to filter local water sources at disaster sites. It also focuses on evaluating the water quality by indicating the pH level of the water before and after the process of water filtration. This paper also outlines the approach and describes the physical design of the system, decision algorithm, user interfaces and the integration of parts into a portable, remote and microcontroller-based monitoring system for water filtration.

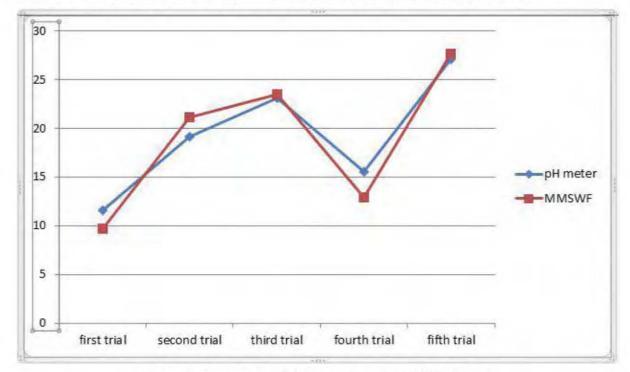


Fig. 1 shows the significant graphical comparison with set of trials to determine the changes in the pH values and to differentiate the result of the pH value of the MMSWF compared to the standard pH meter.

Figure 1. Comparison of pH meter: Commercial VS MMSWF.

Keywords: Contaminated, Filtration, Microcontroller, pH, Portable, Water

Acknowledgment

The authors would like to express appreciation for the support of the MSU-Iligan Institute of Technology for giving them the chance to perform this study and the trust that they can use the resources needed from the institute.

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