

Pongsakon Pimpanit 2010: Digital Dissolved Oxygen Meter For Environmental Application. Master of Engineering (Environmental Engineering), Major Field: Environmental Engineering, Department of Environmental Engineering.
Thesis Advisor: Assistant Professor Sanya Sirivithayapakorn, Ph.D. 71 pages.

The cost of dissolved oxygen meter (DO meter) currently available in the marketplace is expensive. This study developed a prototype of DO meter by thorough modification and redesign of electronic circuit, probe structure, and display unit. The first step was to study the effects of different membranes and electrode on the voltage reading of a Polarographic cell. Then the selected membrane and electrodes were used to construct a prototype DO probe. The electronic circuit with display unit was later integrated into the prototype DO probe. The complete set of a prototype DO meter was tested and compared with the reading of a commercial DO meter and a standard value. The results from the prototype DO meter were different from the standard value less than ± 0.088 mg/L and different from the reading of a commercial DO meter of less than 0.328 mg/L. Therefore, the developed prototype DO meter can potentially be used in several environmental applications with comparable accuracy to the commercial DO meter.

Student's signature

Thesis Advisor's signature