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# SDI-12 based turbidity measurement system with field calibration capability

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**Abstract:** Turbidity is a measure of how much the material suspended in water decreases the passage of light through the water. In order to carry out accurate turbidity measurements, turbidity-measuring probes require periodic calibration. Classical calibration implies manual. procedures characterized by long calibration time, additional common errors and lower repeatability. The paper presents a distributed turbidity measurement system with field calibration capabilities. The main system elements are turbidity probes, one calibration unit RS232 compatible, three RS232 to SDI-12 converters and a notebook PC. The acquisition and control tasks of the turbidity measurement probes and field calibration unit are implemented using a microcontroller (PIC16F877).

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#### 1. INTRODUCTION

Measuring turbidity is now accepted worldwide as one of the best ways of measuring changes in water quality [1]. The full definition of turbidity as defined by Standard Methods for the Examination of Water and

Waste Water is "an expression of optical property that causes light to be scattered and absorbed rather than transmitted in straight lines through the sample." This can be summarized as a measurement of sample clarity.

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