## Intelligent ultrasonic device for level measurements

## Abstract

Nowadays, the design of new innovative products is more relevant than ever. Intense competition and sudden growth of markets such as the ones of China and India world widely, make this need more urgent than ever before

The aim of the present work is the design, study, construction and calibration of a smart as well as cheap measuring instrument (price <  $100 \oplus$ ) for the fuel (oil) level measurement in tanks which can be found in commerce. The appropriate level measurement technique is chosen, following the VDI-2225 guidelines. Since the method has been selected, advanced sensors and microprocessors are used for the construction of the instrument. Then all the individual elements are integrated using high-level language to create an easy and functional user interface environment.

A large number of measurements are carried out under special conditions, designed to ensure the accuracy and reliability of the instrument. Laboratory measurements are taken together with real oil storage tanks measurements. As long as the above stages have been completed (design, study, construction, calibration), the benefits and conclusions are estimated. New ideas for further exploitation and improvement of the measuring instrument are also proposed.

