Abstract

Specific gravity or relative density of liquid is the main parameter of interest for chemists, gemologists and aquarists to know the reactions of chemical solutions, to check the purity of
gem and to know the salinity of water respectively. Hydrometer is the most widely used device to measure specific gravity. But the drawback with this instrument is that, there is typically more wastage of the liquid sample under test and a longer cleaning time. Virtual Instrumentation based specific gravity measurement resolves this issue. A virtual instrument for estimation of specific gravity of liquid under test is developed. A signal processing circuit comprising of instrumentation amplifier is designed to amplify the signal received from the load cell and this signal is interfaced to a personal computer with the aid of PIC microcontroller and MAX232. The virtual instrument design is completed using LabVIEW software. The results obtained are inline with the actual values and are found to be repetitive.

References

- Vyas N. S.: condition monitoring application using Virtual Instrumentation, 28th National Symposium on Instrumentation (NSI), Pantnagar (Uttaranchal), India (2003).

Index Terms

Computer Science  Applied Sciences

Keywords

Specific Gravity (sg)  Load Cell  Virtual Instrumentation  Pic Microcontroller.