**Development and experimentation using a low-cost road roughness device**

**Abstract**

One of the most important measures of road condition is roughness of road surface. Mainly there are two different types of instruments used for the measurement of road roughness in this report. First one is the Merlin. It is a machine which evaluates roughness using low cost instrumentation, utilized either for immediate estimation or for adjusting reaction sort instruments. Secondly is the Auto-Level which is an automated leveling optical instrument. During construction site surveys for gathering, transferring or setting horizontal levels and grade applications, is normally used. The estimation of rough distance between instrument and grade staff is done by the stadia reticle present in auto level. In this study a low cost device has been indigenously fabricated/ developed to measure the roughness of a road’s surface. Finally, experiments on ten road stretches have been conducted using three methods including the developed device. It has been observed that the overall roughness parameters in terms of (IRI) in all the methods are almost same.