CHAPTER 9:
NOISE MEASUREMENT

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INTRODUCTION

Noise pollution is an excessive or unwanted sound that can adversely affect the quality of human health and the environment [1]. Commonly, noise pollution is the result of many facilities' operations such as industries, railways, highways, construction sites, and aeroplane traffic.

Generally, noise pollution is described as constant exposure to elevated sound levels that can cause harmful effects on humans and the environment. Noise levels below 70 dB are not giving any adverse impact on living organisms, regardless of how long or consistent the exposure is. However, exposure to more than 8 hours of continuous sound above 85 dB may cause hazardous [2]. The World Health Organization has recommended that the highest permissible limit of noise exposure in the workplace is 85 dB for maximum exposure (8 hours a day). If a worker works for about 8 hours daily, close to a busy traffic road, the worker may be exposed to the traffic noise pollution of around 85 dB.

METHODOLOGY

Sound Level Meter (SLM) is a primary tool for noise measurement (Figure 9.1). The compromises with sound level meters are between their accuracy, cost and features.

Figure 9. 1: Sound Level Meter

Purposes of Noise Measurements

There are many reasons to measure noise. Data of noise contains amplitude, frequency, time or phase information which provides us with to [3]:

1. Locate and identify the dominant sources of noise.
2. Optimize the selection of noise devices and methods.
3. Determine compliance with noise regulations and criteria.
4. Measure the strength (power) of a noise source.
5. Identify the acoustic quality of the room and its suitability for various uses.

Measurement Objectives

Planning on the measurement of noise must be well prepared to meet related purposes and objectives. The sampling method, location measurement, measurement type, and choice of apparatus must be in line with the objective of the study. Some common objectives include [3]: