



Characterisation Techniques for Monuments: An Overview

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Abstract

Monumental and historical buildings have their own identity and special importance. They are transferring old era information to next generation. The historical monuments sustained from past to present have worn out due to various effects and disappeared in short periods due to lack of good care. The deteriorations occurred on the monumental buildings due to climate change. It must be investigated deterioration effects on construction materials. In recent years, due to moderate change in environment the monumental buildings of Marathwada go to deteriorate. Various characterisation techniques were used for conservation of monuments and historical buildings. Some of them are discussed in present work such as XRD analysis, Raman spectroscopic, FTIR spectroscopic, SEM analysis and thermal analysis technique etc. The study of ancient monuments with characterisation of degradation forms is, more important for conservation of ancient monuments. It also obtains valuable information about their history and past interventions.

Keywords: Monument, Climate Impacts, X-Ray Diffraction Technique, SEM Analysis

1. INTRODUCTION

Marathwada region have great historical importance. Many monuments and historical buildings such as world famous Ellora caves, Daulatabad fort, Grishneshwar temple etc. located in various regions of Marathwada. Figure 1 (a) and Figure 1 (b) shows view of Marathwada's most historical monuments such as Ellora caves and Daulatabad fort. They have been constructed using stone i.e. natural construction materials that today serious deteriorations are observed on them. These deteriorations have occurred not only because of the age of the structures but also mostly due to the environmental conditions and factors. Atmospheric events such as moderate temperature, rainfall, air, wind pressure, humidity may effects on monumental and historical buildings. In recent years, Marathwada monumental and historical buildings negatively affected due to moderate climate. Monumental and historical buildings have their own identity and special importance. They are transferring old era information to next generation. The historical monuments sustained from past to present have worn out due to various effects and disappeared in short periods due to lack of good care. The deteriorations occurred on the monumental buildings due to climate change [1]. It must be investigated deterioration effects on construction materials of Marathwada.