



**SLOW CRACK GROWTH OF POLYMER MIXED
CONCRETE UNDER CONSTANT LOAD**

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“I/We declared that this thesis is the result of my/our own work except the ideas and summaries which I/We have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree”

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ABSTRACT

This thesis explains how cracking are influenced by dimensions (size effect) and material properties such as tensile strength; fracture toughness. This is done with the help of models of fracture mechanics. Problems that affect those models are discovered. They are, slow (but stable) crack growth before failure and complex state of stress at crack tip.

From elastic plastic fracture mechanics EPFM, the three point bending test was considered in this thesis. Moreover, the fracture mechanics parameters obtained from both EPFM stress approach was considered for the analysis and discussion.

Nevertheless, all this can be achieve by designing, fabricates a test fixture for slow crack growth under constant load .From that we can study the behavior of polymer mixed concrete under constant stress, and relates crack growth rates with fracture parameters.

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