

Introduction to fundamentals of instrumentation of civil structures

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Preface

Civil structures are not dissimilar to human's body. They need to attention and maintenance until horrible events do not occur for them .The disease in the human's body is accompanied with symptoms like pain, fever and etc.Regarding a structure such events can also be observed in strains, stresses, deformation and etc. The appearance of structural damages leads to imposition of heavy costs to infrastructures of a country. Continuous monitoring as the interface between civil engineering and fields of precision measurement provides a strategy for getting information about condition of a structure at any specified time. With relying upon this field of engineering science, structural defects and damages can be predicted before occurrence and take necessary actions in timely for preventing of humanitarian disasters.

Discussing about principles of maintenance is beyond this book subject, but due to subject correlation, summary content in this area has been discussed in the first chapter of the book.

Maybe a lot of information about the continuous monitoring of civil structures could be found that has not been mentioned in this book, but it has been tried that young engineers be able to achieve a reliable and logical understanding of instrumentation process of a civil structure.

Sensors discussed in this book are only part of a broad technology that exists in this regard and there are other numerous sensors that have not been discussed in this book.

Information has been chosen in a way that as far as possible a comprehensive range of issues to be provided for the reader about instrumentation of a civil structure.

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Chapter 1 - Generalities and an introduction to monitoring of civil structures

Chapter 2 – structure of structural monitoring

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