Overview

In the diverse and complex technology of fatigue and fracture, it is increasingly important for societies and engineers to exchange information of mutual interest. It is thus critical to provide forums, such as the subject symposium, to allow for open exchange. With knowledge of the needs of industry, researchers gain insight valuable in assuring their focus is on meaningful topics. Armed with the latest developments from the research community, engineers, in turn, are able to apply and validate these concepts and findings from the research community.

The goal of the Symposium on *Automation and Fatigue and Fracture: Testing and Analysis,* was to be just such a forum on an international scale. Developers of testing methodology, researchers and scientists who evaluate and predict materials response, and engineers who apply the results to current day challenges in industry joined together to reflect on recent achievements in the areas of:

1. Automated testing systems and methods,
2. Models and methods for predicting fatigue life under complex loading,
3. Fatigue and fracture analysis and simulation, and
4. Applications and prediction methods.

This collaboration resulted in the presentation of 45 papers to an audience of around 150 technologists, representing more than 18 countries and 5 continents. The broad range of topics describe how advancements in digital computer hardware and software have opened up new opportunities in mechanical testing, modeling of physical processes, data analysis and interpretation, and, finally, applications in engineering environments.

This volume is offered as a valuable source of information for all those interested in deepening their understanding of fatigue and fracture phenomena. It is the hope of all involved that this may spawn yet further ideas and innovations in applying multidisciplinary technologies to testing and analysis automation, which in turn may open new doors of understanding.

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