

Introduction

This symposium recognizes that, while every design engineer strives to prevent fatigue failures, he must, at the same time try to achieve the highest possible fatigue resistance at a minimum cost and often at a minimum weight and space. Reaching this goal requires an acute knowledge of those phenomenological parameters which best characterize fatigue resistance and those processes by which the fatigue resistance of existing materials can be improved. Furthermore, his future choice of new and improved materials may be determined by the extent to which materials researchers are able to evolve and apply knowledge about those micromechanisms which control fatigue resistance.

It is, therefore, the purpose of this symposium to present up-to-date views on those parameters, mechanisms, and processes that are important in achieving high fatigue resistance in materials.

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