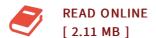# Optimal Design of Meso-structured Materials under Uncertainty

By Jiten Patel

LAP Lambert Acad. Publ. Dez 2010, 2010. Taschenbuch. Book Condition: Neu. 220x150x7 mm. This item is printed on demand - Print on Demand Neuware - The main objective of the topology optimization is to fulfill the objective function with the minimum amount of material. This reduces the overall cost of the structure and at the same time reduces the assembly, manufacturing and maintenance costs because of the reduced number of parts in the final structure. The concept of reliability analysis can be incorporated into the deterministic topology optimization method; this incorporated scheme is referred to as Reliability-based Topology Optimization (RBTO). This book explores a reliability-based synthesis method which estimates all the statistical parameters and finds the optimum while being less computationally intensive. The efficiency of the proposed method is achieved with the combination of topology optimization and stochastic approximation which utilizes a sampling technique such as Latin Hypercube Sampling (LHS) and metamodeling techniques such as Local Regression and Classification using Artificial Neural Networks (ANN). 112 pp. Englisch.

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