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Heat and Mass Transfer - From Fundamentals to Advanced Applications Diana Enescu, 2025-10-15 This book presents key topics related to heat and mass transfer focusing on both numerical methods and real life engineering applications It is helpful for researchers engineers and graduate students working with thermal systems offering simple explanations and practical solutions The volume is structured in two main sections The first section covers mathematical modeling simplified analytical techniques and computer based simulations Examples include heat transfer phenomena and combined mechanisms along with dimensional analysis and numerical methods used in thermal studies The second section highlights practical applications in electronics wearable technologies energy efficient buildings and industrial drying processes Readers will learn how thermal behavior influences device performance how body heat can generate electricity in wearable systems how building elements help control indoor temperatures and how drying processes are optimized in industrial settings These examples demonstrate how understanding heat transfer mechanisms can enhance system performance reduce energy consumption and inform more effective system

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fundamentals of heat and mass transfer in the context of all types of multiphase flows with possibility of phase changes among solid liquid and vapor It serves equally as a textbook for undergraduate senior and graduate students in a wide variety of engineering disciplines including mechanical engineering chemical engineering material science and engineering nuclear engineering biomedical engineering and environmental engineering Multiphase Heat Transfer and Flow can also be used to teach contemporary and novel applications of heat and mass transfer Concepts are reinforced with numerous examples and end of chapter problems A solutions manual and PowerPoint presentation are available to instructors While the book is designed for students it is also very useful for practicing engineers working in technical areas related to both macro and micro scale systems that emphasize multiphase multicomponent and non conventional geometries with coupled heat and mass transfer and phase change with the possibility of full numerical simulation

Fundamentals of the Finite Element Method for Heat and Mass Transfer Perumal Nithiarasu, Roland W. Lewis, Kankanhalli N. Seetharamu, 2016-03-07

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