most. Overall, all the necessary information about these types of measurements is here.

In conclusion, this book is intended to expose aerodynamicists to different measurement methods and provide a gateway for individuals to further develop their interest. A unique aspect of this book is the problem sheet at the end of each chapter and this would certainly allow users to test themselves. This type of content is usually not available in experimental techniques books and usually users have to carry out the experiment to demonstrate their understanding of the methods. However, this unique aspect allows this book to be accessible to non-experimentalists and, therefore, could have a wider reach. If this was the intention, then I applaud the authors for editing a good book that has something in it for all aerodynamicists.

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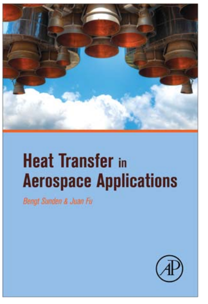

Heat Transfer in Aerospace Applications

B. Sunden and J. Fu

Academic Press, Elsevier, The Boulevard, Langford Lane, Kidlington, Oxford, OX5 1GB, UK. 2017. xv; 255pp. Illustrated. £104. ISBN 978-0-12-809760-1.

I was quite excited about the book as there has not been any book on heat transfer especially dedicated for the aerospace applications. The heat transfer concept has been explored and explained in many ways for various engineering applications but this first edition book describes the concept of heat transfer in the context of aerospace applications. The aerospace environment itself poses various challenges for aircraft/spacecraft such as microgravity, extreme temperatures and pressures, aerodynamic heating, vibrations, shock loads and extended duration of operations. This book consists of 11 different chapters explaining the heat transfer concepts/problems for these various aerospace challenges.

The first chapter introduces the heat transfer concept in general and summarises the specifics for aerospace heat transfer.

The chapter explains briefly about conduction, convection, radiation, ablation, transpiration cooling, cryogenic matters, low-density heat transfer, gravity effects, heat pipes, heat exchangers, fuel cells etc. in aerospace applications. Chapter 1 sets the tone and gives a clear overview of what is coming in the next chapters. The rest of the chapters in the book go in depth to explain the phenomenon of heat transfer in various aerospace applications. Chapters 3 and 4 describe the heat transfer in high speed and low density gas including an example from evacuated space. Chapter 5 presents an in-depth overview of cryogenics matter and Chapter 6 describes the various types of heat exchangers for aerospace applications including suggestions for general design consideration.

Chapter 7 presents a brief review of heat pipes in aerospace applications and Chapter 8 describes the basic principles of fuel cells in aerospace applications with some emphasis on heat transfer. Chapter 9 gives an overview of heat transfer in microgravity conditions. Chapter 10 elaborates on the numerical Finite Volume Method (FVM) and computational (CFD) approaches for the heat transfer analysis. The book ends with Chapter 11 with an overview of different measuring techniques.

Every chapter ends with an extensive list of references used in that chapter which guides the reader to explore further for research if needed. It would be beneficial if some numerical problems taken from real-life aerospace challenges were added at the end of each chapter. This would not only help students understand the concept of heat transfer in aerospace applications but also to apply the knowledge learned from this book. This change would make this book a great addition to a university library.

Overall, this is a great book to understand the nuances of heat transfer in aerospace applications.

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