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Editor

Sustainable Thermal Power Resources Through Future Engineering

 Springer

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Preface

Thermal power is a product involving energy conversion process with practical coverage of thermal and fluid components and systems. It involves complex knowledge in thermodynamics, heat transfer and fluid mechanics, which is usually mastered by graduates in mechanical engineering. In electric power plants, thermal power serves as the primary product before electricity can be generated. Although widely related to electric power plants, the knowledge in thermal power is also widely applied in areas such as air conditioning, internal combustion engines, and various industrial applications. Hence, the issues of energy efficiency and environment are critical in the production of thermal power. Various and diverse research works have been carried out worldwide in order to improve aspects in usage and production of thermal power. The biggest leap in improvement of thermal power probably occurred after the 1973 oil crisis, which saw a limited production of oil in the global market, resulting in sudden increase in energy prices. On another aspect, the use of air conditioners in homes and offices around the world has been the main driver of global energy demand over the next three decades; this leads to urgent need to improve cooling efficiency. The emergence of Fourth Industrial Revolution would, in addition, result in increased demand in the capacity of data centers. This would not happen without accompanying increase in demand of cooling energy for data centers. Motivated by these issues, this book shares the efforts by researchers in science and engineering on conventional and renewable energy, and energy efficiency vis-à-vis thermal power. The editor would like to express his gratitude to all the contributing authors for their effort in preparing the manuscripts for the book. May it serve as a useful reference to readers.

Seri Iskandar, Malaysia

Shaharin Anwar Sulaiman

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