

Thermal system optimization: a population-based metaheuristic approach

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Abstrak

This book presents a wide-ranging review of the latest research and development directions in thermal systems optimization using population-based metaheuristic methods. It helps readers to identify the best methods for their own systems, providing details of mathematical models and algorithms suitable for implementation.

To reduce mathematical complexity, the authors focus on optimization of individual components rather than taking on systems as a whole. They employ numerous case studies: heat exchangers; cooling towers; power generators; refrigeration systems; and others. The importance of these subsystems to real-world situations from internal combustion to air-conditioning is made clear.

The thermal systems under discussion are analysed using various metaheuristic techniques, with comparative results for different systems. The inclusion of detailed MATLAB® codes in the text will assist readers-researchers, practitioners or students-to assess these techniques for different real-world systems.