

# Preface

This special edition delves into the complexities and highlights some advancements in the applied approaches to investigating heat and mass transfer in various engineering systems such as flow networks, earth-air heat exchangers, wave energy converters, etc. The first two chapters are dedicated to the mentioned research areas.

The third chapter presents the analysis of the structural integrity of an engineering structure made from high-strength low-alloyed steel and the vibration behaviour of composite rectangular plates with internal crack.

The last chapter contains research results on the properties of optical materials for application in photovoltaics, light-to-radiation conversion and advanced luminescent devices and biological probes.

This special edition serves as a valuable resource for engineers and researchers seeking to enhance their knowledge of cutting-edge materials and techniques.