



fire



Special Issue Reprint

Advances in Fire Suppression

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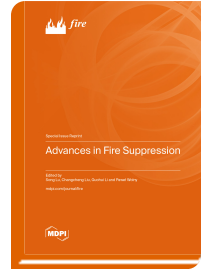
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ISBN 978-3-7258-2401-4 (Hardback)

ISBN 978-3-7258-2402-1 (PDF)

Fire suppression has always been an important research area in fire science. Extinguishing fires has been a problem since humans learned to use fire. This Special Issue is a collection of scholarly papers that delve deeply into the field of fire science, covering multiple dimensions, such as fire prediction, simulation, and control, as well as firefighting techniques. With optimized machine learning models, we can predict the consequences of fire more accurately; indoor fire simulation based on BIM-FDS provides a deep understanding of fire dynamics. The research on helicopter fire retardant delivery provides innovative ideas for wildfire prevention. The research on water mist fire-extinguishing systems not only covers the effects of their application in different scenarios, but also deeply discusses system design and challenges. In addition, the reprint includes research into the synthesis of new efficient and environmentally friendly flame retardants, as well as the exploration of the potential application of CO₂ hydrates in fire suppression. The effectiveness of the water mist system in specific fire environments is verified by full-scale experiments, and the behavior of water mist in hot air as well as its influence on the fire-extinguishing effect are analyzed. This reprint aims to provide a comprehensive knowledge resource for researchers, engineers, policymakers, and public safety experts in the field of fire safety to advance the development and application of fire prevention as well as suppression techniques.



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