



## Fire and Explosion in Process Safety Prevention and Protection

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### **Message from the Guest Editors**

Fires and explosions pose substantial risks to personnel, infrastructure, and the environment within the process industries. A comprehensive understanding of the underlying physical and chemical phenomena is crucial for developing effective prevention, mitigation, and response strategies. This SI invites research that advances the state of the art in fire and explosion and preventive/protective/mitigative engineering. Contributions addressing combustion, heat transfer, fluid dynamics, and process design are sought to enhance safety within process environments. Special emphasis will be on the effectiveness probability of measures given load intensity. It includes but is not limited to:

- Combustion and explosion phenomena: flame propagation, detonation, and deflagration-to-detonation transition.
- Process safety analysis: hazard identification, consequence modeling, and risk assessment.
- Fire and explosion prevention: design for safety, inherent safety, and process intensification.
- Detection and suppression: fire detection systems, suppression technologies, and human factors in fire safety.
- Case studies: real-world examples of fire and explosion incidents and lessons learned.





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