
Preface to Fire dynamics. A theme compiled and edited by S. R. Bishop and D. D. Drysdale

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Preface

The dynamic evolution of a fire is determined by several separate processes involving the chemistry and physics of combustion, heat and mass transfer and the dynamics of fluid flow and flame spread. A full, in-depth investigation of fire growth thus requires a complicated, and inherently nonlinear, mathematical model which takes into account material properties, surface configurations, reactions in turbulent flow, and the generation of smoke and toxic species. If controlled, a fire can be harnessed to provide great benefit as a source of power and heat, but uncontrolled it can cause untold damage and human suffering. Here, we bring together various aspects of fire dynamics, with the dual aims of increasing our understanding of this important field and providing wider dissemination to promote further research.

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