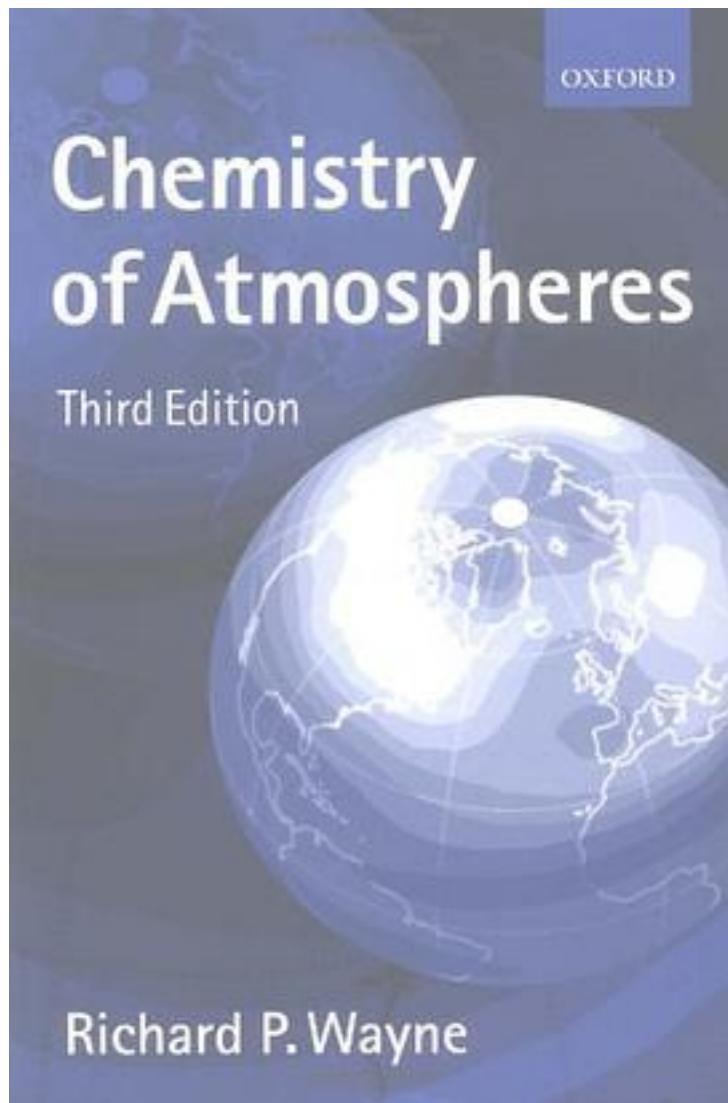


Chemistry of Atmospheres



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Atmospheric chemistry has been the focus of much research activity in recent years, and there is now heightened public awareness of the environmental issues in which it plays a part. In a clear, readable style, this important book looks at the insights and interpretations afforded by the research, and places in context the exciting, dramatic, and sometimes disturbing findings. Like its highly successful predecessor, this new edition lays down the principles of atmospheric chemistry and provides the necessary background for more detailed study. The text has been thoroughly revised and expanded throughout to take into account recent advances in atmospheric science that include a host of new atmospheric measurements, extended laboratory experiments, ever more sophisticated models, and ingenious interpretations of the phenomena. Heterogeneous processes are now known to be of great significance in the chemistry of the Earth's atmosphere, and new sections of the book discuss the influence of such processes on both the stratosphere and the troposphere. A major eruption, that of Mount Pinatubo, has highlighted how volcanoes can influence 'natural' atmospheric chemistry, and the opportunity is taken to examine the effects of the gases and particles produced in such eruptions. The startling discovery of the 'Antarctic ozone hole' has now been matched by observations of similar ozone losses in the Arctic; both phenomena are explored in more depth than before, and the whole question of trends in stratospheric ozone concentrations is updated. New topics in tropospheric chemistry that are discussed in this edition for the first time include the atmospheric chemistry of biogenic hydrocarbons, of aromatic compounds, and of halogens and halogen-containing species. Several aspects have been added to the examination of air pollution, including the effects of biomass burning. Rapid changes in the composition of the Earth's atmosphere, apparently a result of man's activities, are apparently even having an effect on global climate, and recent assessments of the Intergovernmental Panel on Climate Change are presented in this context. Air transport continues to expand, and the influence of aircraft on atmospheric chemistry and, indeed, on climate has excited interest that is explained here. Moving away from Earth, information gathered by the Voyager, Galileo, and other space missions, which have provided a new understanding of the atmosphere of the planets other than our own, is also discussed and brought up to date. This book does not attempt to suggest answers to the environmental problems facing us, but it lays the foundations for the study of atmospheric chemistry on which rational decisions will need to be based. A multidisciplinary approach is taken throughout in order to highlight the interplay between the atmosphere of a planet and other parts of the environment. This feature makes the book full of interest for chemists, physicists, biologists, and other scientists alike, and accessible to all of them. Readers will find the book an excellent introduction to an exciting topic, and a fascinating source of information about a part of science that is proving to be of key importance.

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