Essential Textbooks in Chemistry

ATMOSPHERIC CHEMISTRY

From the Surface to the Stratosphere

By **Grant Ritchie** (*University of Oxford, UK*)



Description:

Understanding the composition and chemistry of the Earth's atmosphere is essential to global ecological and environmental policy making and research. Atmospheric changes as a result of both natural and anthropogenic activity have affected many of the Earth's natural systems throughout history, some more seriously than others, and such changes are ever more evident with increases in both global warming and extreme weather events. Atmospheric Chemistry: from the Surface to the Stratosphere considers in detail the physics and chemistry of our contemporary planet, and in particular its atmosphere, explaining the chemistry and physics of the air that we breathe, that gives rise to our weather systems and climate, soaks up our pollutants and protects us from solar UV radiation.

The development of the complex chemistry occurring on Earth can be explained through application of basic principles of physical chemistry, as is discussed in this book. It is therefore accessible to intermediate and advanced undergraduates of chemistry, with an interdisciplinary approach relevant to meteorologists, oceanographists, and climatologists. It also provides an ideal opportunity to bring together many different aspects of physical chemistry and demonstrate their relevance to the world we live in.

This book was written in conjunction with Astrochemistry: From the Big Bang to the Present Day *Claire Vallance (2017) Grant Ritchie, @World Scientific Publishing.*

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Contents:

- Physical and Chemical Properties
- Radiation in the Atmosphere
- Stratospheric Chemistry
- Tropospheric Chemistry
- Aerosols
- ***Appendices:***
  - The Hydrostatic Equation
  - The Saturated Adiabatic Lapse Rate

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