
P R E F A C E

It was around Earth Day of this year that this text was completed. The environment is a resource with a value that is difficult to comprehend — its value for humans is, in fact, infinite. Humans are products of the environment in contact with it daily, and understanding its chemistry is necessary to maintain sustainability so that future generations can continue to co-exist with the environment.

Degradation to the environment can lower the quality of life for humans through contact with the major environmental cycles. Environmental engineering and science seeks to remedy the present degradation caused by humans, and to create technology that will prevent further damage.

There is no denying that chemistry is essential in the understanding of environmental engineering and science. It is the basic foundation on which science and engineering can be built. This book will be useful for people who want to specialize in the field of environmental science and engineering, and it will be a valuable reference tool.

This book includes the basics of chemistry, not only aquatic but also atmospheric, as well as soil chemistry. It is a comprehensive book, covering the chemistry of energy resources and aspects of biochemistry, geochemistry, and toxicological chemistry in addition to the three important substances: air, water, and soil.

Presented in this book are the issues that face environmental engineers and scientists. The material is presented analytically so that the student, after gaining a clear insight into the chemical nature of the issues, will be able to formulate an opinion if so inclined. This book, however, does not seek to impress upon students any opinions, but only to prepare the students analytically.

Some portions of this book have been used in Environmental Chemistry by Prentice Hall, in two volumes. Permission has been given to use that material for the present version. The work was double-checked, many typos were corrected from the original version, and new material has been added. The framework from this book has been used for teaching a one-semester course in environmental chemistry for close to twenty years.

The author would like to take this opportunity to thank all of the colleagues and previous students who have taken the course and who have contributed to shaping this book. Lastly, the author would like to name Shivani Yardi, Divya Devaguptapu, Akash Tayal, Aaron Cornell, Rachel Tucker, Vivek Gupta and Sangeeta Patel for their assistance.

Teh Fu Yen
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