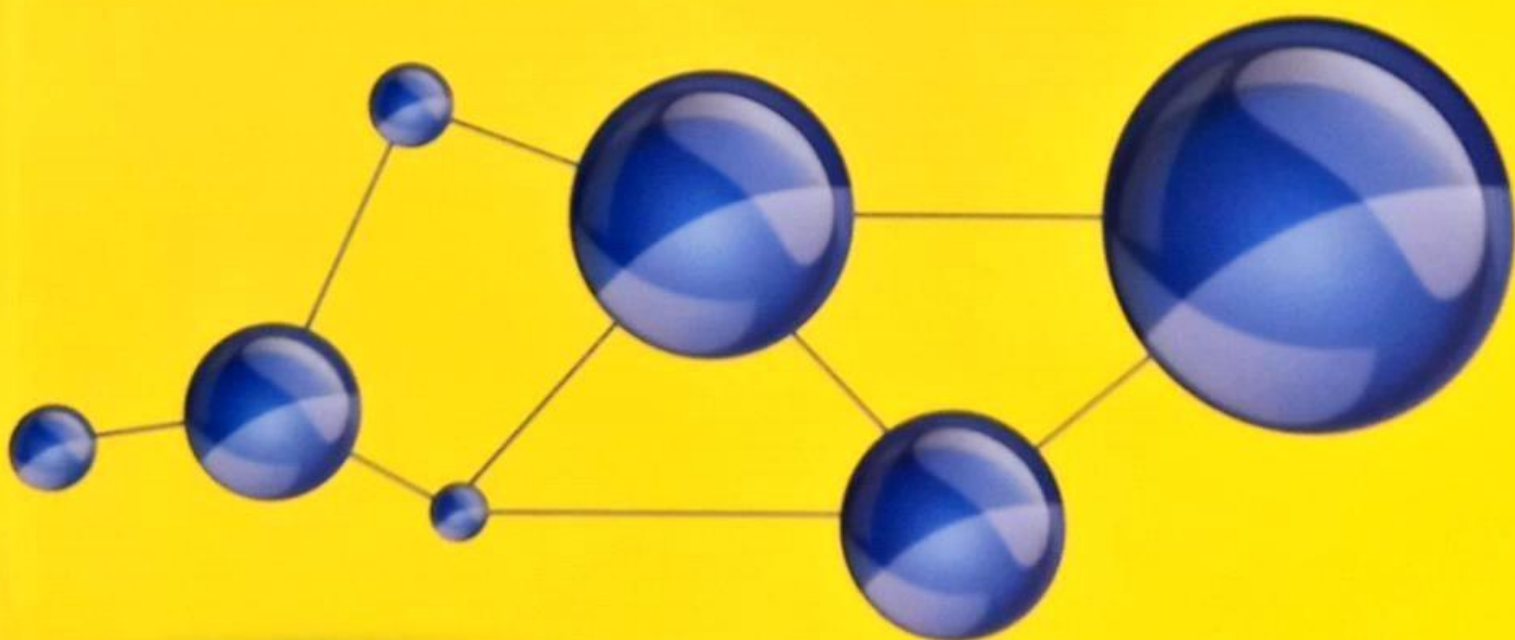


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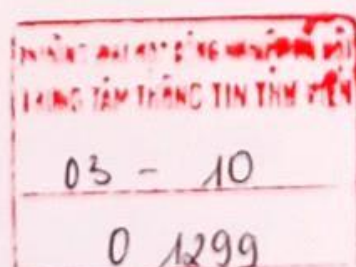
BASIC TECHNICAL ENGLISH FOR CHEMICAL AND ENVIRONMENTAL ENGINEERING



NHÀ XUẤT BẢN KHOA HỌC TỰ NHIÊN VÀ CÔNG NGHỆ

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PREFACE

This book was designed to assist third year students in preparing for their graduation and higher education. There are seven lessons in this book which cover some major fields in chemistry including inorganic chemistry and organic chemistry, analysis chemistry, green chemistry and so forth. Each lesson covers familiar chemistry and environment related issues which students have learnt in previous semesters, followed by a wide range of chemical technical vocabularies so that students can learn ways the words are used in technical contexts. This book also introduces basic reading skills like skimming, scanning, using context and so forth which students can apply when reading chemistry and environment related articles and science research. The question system in each lesson provides more related information about the topic as well as reminds students about some basic grammatical rules which they have learnt.

Authors

CONTENTS SCOPE AND SEQUENCE

Unit	Page	Text	Reading Skills	Connectors	Language Focus
1	7	Chemical Elements and the Periodic Table		Difference: whereas, but Similarity: also, likewise Explanation: i.e. = that is Deduction: so	Active and Passive Voice
2	17	Acids and Bases	Using Context		Present Tense Comparative and Superlative Adjectives
3	25	The Chemistry of Carbon	Skimming	Similarity: and/ as well Difference: however Alternate: instead of, rather than Addition: more over Hypothesis: if	Classification
4	35	Chemistry Labs	Instruction		Instruction and Explanation Use/Be used to
5	41	Methanol - the feedstock for the Future	Scanning	Hypothesis: If/ If not When/as soon as/as long as Provided/Providing that In case/unless	Conditional Sentences
6	51	Properties of metal	Supporting main ideas	Reference Neither of The former, the latter	Word formation

7	61	Phase Diagrams	Finding examples	Similarity in other word, similarly Difference despite exemplification for instance, for example	Simple Tense
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UNIT 1

Teacher's Note:

This lesson touches on the basic understanding about **chemical elements, substances as well as the periodic table**. The language focus is on the **active and passive voice** of different usages. Students will be familiar with a wide range of **connectors** that help to make **similarity, difference, explanation or deduction** possible.

READING PASSAGE

Copper (Cu), sodium chloride (NaCl) and hydrogen (H₂) are *substances*. Some substances are elements and some substances are compounds. *Element* has only one type of atom whereas *compounds* have more than one type.

Copper is an element: It has only one type of atom (i.e. only copper atoms). Oxygen has one type of oxygen atom, so it is also an element.

Sodium chloride has two different types of atom (sodium and chlorine), so it is a compound. Water is also a compound.

Substances can be divided into *elementary substances* and *compounds* on the basis of the chemical changes they are involved in. Compounds decompose into other substances, elementary substances do not (not in a chemical change). Likewise, compounds can be made by combination of other substances, elementary substances cannot. Compounds ultimately decompose into, and can be made from, elementary substance.

Sources:

Jeremy Comfort, Steve Hick and Allan Savage, *Adapted from the text in Basic Technical English*. Oxford University Press 1982.

Peter G. Nelson, *Chemistry Education Research and Practice*, 2006, 7(4), 288-289.