

PROFESSIONAL ENGLISH
FOR ENVIRONMENTAL PROTECTION

环境保护专业英语

谢 雯 刘晓毅 主编



暨南大学出版社
JINAN UNIVERSITY PRESS

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前 言

环境保护专业英语是高职高专环境类专业学生的必修课。在完成公共基础英语学习任务后,学生须继续修读专业英语。本教材从高级应用型人才的培养目标出发,结合环境保护专业的实际,力求向高职院校的学生提供未来工作岗位上所需的专业英语知识和技能,培养学生实际使用英语的能力。

环境专业英语在高职高专的教学计划中一般安排一个学期,每周课时两节,但现有环境类的专业英语教材屈指可数,且教材中所选的大部分专业文章较长,词汇量很大,课后相应的练习不多,给教学带来了诸多不便。

本书包含8个模块,29个章节。其中21章为专业性英语阅读,每章都分为Text A和Text B两部分。Text A为专业性较强的英语阅读,旨在培养学生的专业阅读能力。本部分可以在教师的讲解和辅导下进行学习。Text B为辅助阅读文章,旨在拓宽学生有关环境英语的专业知识,可以作为阅读理解的学习。另外还有8个章节是科技英语翻译技巧,先后安排在每一个模块的最后一部分。这8个章节的目的在于培养学生实际应用专业英语的能力。Module 1的Chapter 1, Module 5的Chapter 1-3, Module 7的Chapter 1-3以及Module 8的Chapter 1由刘晓毅负责,其余由谢雯负责,最后由谢雯统稿。

本书的编委都是奋斗在环境保护专业工作及教学第一线的高级工程师、博士以及专业教师等,在编写的过程中,他们对本书的结构和内容安排提出了很多宝贵的意见。本教材课文和阅读材料的编写均参考了一些环保专业类的教材和国内外英文网站。在此谨向本教材的编委们,引用文章的原作者、出版社和有关网站表示衷心的感谢!

由于编者水平有限,编写时间仓促,书中难免存在疏漏和不当之处,敬请读者批评指正。如有任何疑问或意见,请联系Barbara007@126.com。

编者

2012年9月1日

Contents

前 言	(1)
Module 1 Environment and Environmental Issues	(1)
Chapter 1 Text A Environment and Environmental Science	(1)
Text B Global Environmental Problems	(4)
Chapter 2 Translation Skills 科技英语的构词方法	(9)
Module 2 Air Pollution and Control Technology	(16)
Chapter 1 Text A Air Pollution	(16)
Text B Air Pollution Sources	(18)
Chapter 2 Text A Acid Rain	(21)
Text B Ozone Depletion	(23)
Chapter 3 Text A Indoor Air Pollution	(27)
Text B Indoor Air Quality Concern	(29)
Chapter 4 Text A Air Quality Monitoring Methods	(33)
Text B Particle Pollution and Your Health	(36)
Chapter 5 Text A Technology of Air Pollution Control	(40)
Text B Flue-gas Desulfurization	(45)
Chapter 6 Translation Skills 科技英语翻译概述, 词义的选择和引申 ...	(50)
Module 3 Water Pollution and Wastewater Treatment Technology ...	(55)
Chapter 1 Text A Classification of Water Pollutants	(55)
Text B Water Pollution and Its Harm	(59)
Chapter 2 Text A Self-purification of Natural Water	(62)



	Text B	Biochemical Oxygen Demand & Dissolved Oxygen	.....	(64)
Chapter 3	Text A	Key Factors in Water Analysis	.....	(68)
	Text B	COD Monitoring	.....	(75)
Chapter 4	Text A	Water Treatment Process	.....	(78)
	Text B	Aerobic Treatment	.....	(82)
Chapter 5	Translation Skills	科技英语翻译中词量的增减	.....	(85)
Module 4	Noise and Noise Control	.....		(90)
Chapter 1	Text A	Noise Pollution Effects	.....	(90)
	Text B	Noise Control	.....	(92)
Chapter 2	Translation Skills	科技英语翻译中的词类转换	.....	(96)
Module 5	The Disposal and Comprehensive Utilization of Solid Waste	.....		(102)
Chapter 1	Text A	What is Solid Waste?	.....	(102)
	Text B	What is Hazardous Waste?	.....	(106)
Chapter 2	Text A	Treatment and Disposal of Municipal Waste	.....	(110)
	Text B	A Landfill Construction	.....	(114)
Chapter 3	Text A	Recycling and Reuse	.....	(118)
	Text B	Canteen or Catering Waste Reduction and Recycling in Surrey	.....	(120)
Chapter 4	Translation Skills	科技英语翻译中成分转译及成分分译	.....	(123)
Module 6	Other Pollution and Control Technologies	.....		(131)
Chapter 1	Text A	Soil Pollution	.....	(131)
	Text B	Soil Conservation	.....	(135)
Chapter 2	Text A	Thermal Pollution	.....	(141)
	Text B	Light Pollution	.....	(143)
Chapter 3	Text A	Hazards of Heavy Metal Contamination	.....	(147)
	Text B	New Methods of Cleaning Up Heavy Metal in Soil and Water		(150)



Chapter 4	Translation Skills	被动语态的翻译	(154)
Module 7	Environmental Assessment	.....	(159)
Chapter 1	Text A	Process of Environmental Impact Assessment	(159)
	Text B	The Content of Environmental Impact Assessment Report	(162)
Chapter 2	Text A	Environmental Management Systems	(165)
	Text B	EMS under ISO 14001	(167)
Chapter 3	Text A	Strategic Environmental Assessment (I)	(172)
	Text B	Strategic Environmental Assessment (II)	(175)
Chapter 4	Translation Skills	定语从句的翻译	(179)
Module 8	Sustainable Development	.....	(184)
Chapter 1	Text A	Sustainable Development	(184)
	Text B	Clean Production	(185)
Chapter 2	Translation Skills	英语产品说明书的翻译	(189)
附 录	.....		(197)
参考文献	.....		(204)

Module 1

Environment and Environmental Issues



Chapter 1

Text A Environment and Environmental Science

Definition of Environment

Environment literally means surroundings and anything that affects an **organism** during its lifetime. In other words, “environment is a total sum of water, air and land interrelationships among themselves as well as their relationships with human beings, other living organisms and property”. It includes all the physical and **biological** surroundings and their interactions. Environmental studies provide an approach towards understanding the environment of our planet and the **impact** of human life upon the environment. Thus environment is actually global in nature, and it is a **multidisciplinary** subject including physics, **geology**, geography, history, economics, **physiology**, **biotechnology**, remote sensing, **geophysics**, soil science and **hydrology**, etc. .

Scope of Environmental Science

Environmental science is a multidisciplinary science, whose basic aspects have a direct relevance to every section of the society. Its main aspects are;

- **conservation** of nature and natural resources;
- conservation of biological **diversity**;



- control of environmental pollution;
- **stabilization** of human population and environment;
- social issues in relation to development and environment;
- development of non-polluting **renewable** energy system.

Importance of Environmental Science

Environment belongs to all the living beings and thus is important to all. Everybody, whatever occupation he or she may have, is affected by environmental issues like global warming, **depletion** of **ozone layer**, **dwindling** forest, shortage of energy resources, loss of global biodiversity, etc. Environmental study deals with the analysis of the processes in water, air, land, soil and organisms which leads to pollution or **degradation** of the environment. It helps establish standards for a safe and healthy natural **ecosystem**. It also deals with important issues like safe and clean drinking water, **hygienic** living conditions and clean and fresh air, **fertility** of land, healthy food and development. **Sustainable** environmental law, business administration, and environmental engineering are emerging as new career opportunities for environmental protection and management.

Enhance Public's Awareness

With the ever increasing development by modern men, large scale of degradation of natural resources has occurred. The public has to be educated about the fact that if we continue degrading our environment, we are actually harming ourselves. To encourage meaningful public participation, it is necessary to enhance the public's awareness of environmental pollution and the related **adverse** effects. Any Government can't achieve the goal of environment conservation by itself until the public has a participatory role in it. Public participatory role is possible only when the public is aware of the **ecological** and environmental issues. In the next text, we are going to learn about some global environmental problems.



New Words

organism	['ɔ:gənɪzəm]	<i>n.</i>	生物体, 有机体
biological	[,baɪə'lədʒɪkəl]	<i>adj.</i>	生物的
impact	['ɪmpækt]	<i>n.</i>	影响
multidisciplinary	[,mʌltɪ'dɪsɪplɪnəri]	<i>adj.</i>	多学科的
geology	[dʒi'ɒlədʒi]	<i>n.</i>	地质学
physiology	[,fɪzi'ɒlədʒi]	<i>n.</i>	生理学
biotechnology	[,baɪəutek'nɒlədʒi]	<i>n.</i>	生物技术
geophysics	[,dʒi:əu'fɪzɪks]	<i>n.</i>	地球物理学
hydrology	[hʌi'drɒlədʒi]	<i>n.</i>	水文学, 水文地理学
conservation	[,kɒnsə'veɪʃən]	<i>n.</i>	保持, 保护, 守恒
diversity	[daɪ'vɜ:sɪti]	<i>n.</i>	多样性
stabilization	[,steɪbɪlaɪ'zeɪʃn]	<i>n.</i>	稳定
renewable	[ri'nju:əbl]	<i>adj.</i>	可再生的
depletion	[di'pli:ʃən]	<i>n.</i>	耗竭, 损耗
ozone	['əʊzəʊn]	<i>n.</i>	臭氧
layer	['leɪə]	<i>n.</i>	层
dwindling	['dwaɪndlɪŋ]	<i>adj.</i>	逐渐减少的
degradation	[,degrə'deɪʃən]	<i>n.</i>	退化, 降低, 降级
ecosystem	['i:kəʊsɪstəm]	<i>n.</i>	生态系统
hygienic	[haɪ'dʒi:ɪnɪk]	<i>adj.</i>	卫生的
fertility	[fə'tɪlɪti]	<i>n.</i>	肥沃度, 繁殖力
sustainable	[sə'steɪnəbl]	<i>adj.</i>	可持续的
adverse	['ædvɜ:s]	<i>adj.</i>	不利的, 有害的
ecological	[,i:kə'lədʒɪkəl]	<i>adj.</i>	生态(学)的

Comprehension Questions:

(1) What's the definition of "environment"? Can you express it in your own



words?

(2) How can we understand the multidisciplinary nature of environmental science?

(3) Please list several main aspects of environmental science.

(4) What does environmental science deal with?

(5) What are the new career opportunities for environmental protection and managements?

Text B Global Environmental Problems

At the dawn of the third millennium, a powerful and **complex** web of interactions is contributing to **unprecedented** global trends in environmental degradation. These forces include rapid globalization and **urbanization**, **pervasive** poverty, unsustainable consumption patterns and population growth. Global environmental challenges require concerted responses on the part of the international community. Global climate change, the depletion of the ozone layer, **desertification**, **deforestation**, the loss of the planet's biological diversity and the **transboundary** movements of **hazardous** wastes and chemicals are all environmental problems that touch every nation and adversely affect the lives and health of their populations.

Moreover, all of these global environmental trends have long-term effects on people and societies and are either difficult or impossible to **reverse** over the period of one generation. Unless effective global actions are taken early, we will end up **plundering** our children's **heritage** and future in an unprecedented way. This text describes five major global environmental problems and points to the potential impact on children and future generations.

Climate Change

It is now widely recognized that global warming over the past 50 years is largely due to human activities that have **released** green-house gases into the atmosphere.



The world's **emissions** of greenhouse gases, notably carbon dioxide (CO_2), continue to increase. The most recent estimates are that atmospheric concentrations of the greenhouse gas carbon dioxide will double or **triple** pre-industrial levels by the end of this century. As a result, global surface temperature is expected to increase by 1.4 to 5.8 degrees Celsius from 1990 to 2100.

Ozone Layer Depletion

Ozone in the atmosphere's upper layer, the **stratosphere**, protects humans, animals and plants from the damaging effects of UV-B **radiation** from the sun. Without it, all life on Earth would cease to exist. However, the use of **chlorofluorocarbons** (CFCs) and other ozone-depleting **substances** (ODS) are slowly eating away the stratospheric ozone layer, creating a major potential health hazard. Skin cancer is the most worrisome health impact of ozone depletion. Overexposure to the sun's harmful **ultraviolet** (UV) light may damage children's skin.

Desertification

Desertification, resulting in part from deforestation, is a significant threat to the **arid**, semi-arid and dry sub-humid regions of the world—which accounts for 40 percent of the Earth's land surface. More than 250 million people are directly affected by desertification and 1 billion people in more than 100 countries are at risk. These people include many of the world's poorest and most **marginalized** citizens. In Africa, land degradation is threatening economic and physical survival.

Deforestation

More than 110 million hectares of forest, about 11 million hectares a year, disappeared during the 1990s. Most of this loss was in developing countries. About



45 percent of the world's original forests are gone. Major causes of deforestation and forest degradation lie outside the forest sector and include the need to create agricultural land and to harvest **fuel** wood for food and energy. The removal of trees decreases the ability of the soils to absorb and retain water; it is also **intrinsically** linked to the loss of biodiversity as original rain forests host numerous **species** of precious **fauna** and **flora**.

Loss of Biodiversity

The variety of life on the Earth, its biological diversity is commonly referred to as biodiversity. It has long been feared that human activity is causing massive **extinctions**. Despite increased efforts at conservation, it has not been enough and biodiversity losses continue. The costs associated with **deteriorating** or **vanishing** ecosystems will be high. However, sustainable development and consumption would help avert ecological problems.

New Words

complex	['kɒmpleks]	adj.	复杂的
unprecedented	[ʌn'presɪdɪntɪd]	adj.	空前的
urbanization	[,ɜ:bənəɪ'zeɪʃən]	n.	城市化
pervasive	[pə'veɪsɪv]	adj.	普遍的, 弥漫的
desertification	[dɪ,zə:tɪfɪ'keɪʃən]	n.	沙漠化, 荒漠化
deforestation	[,dɪ:fɔrɪ'steɪʃn]	n.	滥砍滥伐
transboundary	[træns'baʊndrɪ]	adj.	越境的
hazardous	['hæzədəs]	adj.	有危险的
reverse	[rɪ'veɜ:s]	v.	彻底改变, 翻转
plundering	['plʌndərɪŋ]	v.	掠夺
heritage	['herɪtɪdʒ]	n.	遗产, 遗留物
release	[rɪ'li:s]	v.	释放



emission	[i'miʃən]	<i>n.</i>	排放
triple	['tripl]	<i>adj. /v.</i>	三倍的; 增至三倍
stratosphere	['strætəʃfiə]	<i>n.</i>	平流层
radiation	[,reidi'eɪʃən]	<i>n.</i>	辐射, 放射
chlorofluorocarbon	[,klɔ:rfəʊflʊərəu'kɑ:bən]	<i>n.</i>	氯氟烃
substance	['sʌbstəns]	<i>n.</i>	物质
ultraviolet	[,ʌltrə'vaɪələt]	<i>n.</i>	紫外线
arid	['ærid]	<i>adj.</i>	干燥的
marginalized	['mɑ:dʒɪnəlaɪzd]	<i>adj.</i>	处于边缘的
fuel	['fjuəl]	<i>n.</i>	燃料
intrinsically	[in'trɪnsɪkli]	<i>adv.</i>	固有地, 本质地
species	['spi:ʃɪz]	<i>n.</i>	物种
fauna	['fəʊnə]	<i>n.</i>	动物群
flora	['flɔ:rə]	<i>n.</i>	植物群, 菌群
extinction	[ik'stɪŋkʃən]	<i>n.</i>	灭绝
deteriorating	[di'tɪriə,reitɪŋ]	<i>adj.</i>	恶化的
vanishing	['vænɪʃɪŋ]	<i>adj.</i>	消失的

Comprehension Questions :

(1) Which of the following does **NOT** cause environmental degradation? ____

- A. Unsustainable consumption patterns.
- B. Population growth.
- C. Loss of biodiversity.
- D. Urbanization.

(2) What kind of greenhouse gas will double or triple pre-industrial levels by the end of this century? ____

- A. Carbon dioxide.



- B. Sulfur.
 - C. Chlorofluorocarbons.
 - D. Methane.
- (3) What is the function of ozone layer? _____
- A. Reflect the short wave signals.
 - B. Conduct electricity.
 - C. Absorb the UV-B radiation from the sun.
 - D. Reduce the greenhouse gas emission.
- (4) What is the consequence of deforestation? _____
- A. It decreases the ability of the soils to absorb and retain water.
 - B. It makes the soil more fertile.
 - C. There are more habitats for animals.
 - D. It produces more solid wastes.
- (5) According to the text, what can prevent the ecological problems? _____
- A. No animal killing.
 - B. Sustainable development and consumption.
 - C. Conservation of energy and resource.
 - D. Control the population.



Chapter 2 Translation Skills

科技英语的构词方法

在科技英语的学习中,掌握基本的构词法知识,对于正确地识记单词、扩大词汇量、提高记忆速度和记忆效果、培养自学能力,具有非常重要的意义。科技英语的词汇特点就是广泛地使用词缀、合成、转化和缩略等构词法。

一、词缀

科技英语常用的词缀包括前缀(prefix)和后缀(suffix),具体可分为名词前缀、名词后缀、形容词后缀和动词后缀等。

1. 名词前缀

前缀一般不超过六个字母。每一个前缀都有一定的含义,加了前缀的单词词性一般不发生变化,只改变原来单词的意思。见表1-2-1:

表 1-2-1 名词前缀构词法举例

前 缀	意 义	例 词
aero-	空气	aeroplane 飞机
audi-	听, 听见	audiphone 助听器
auto-	自己, 自动	automation 自动化
bi-	双, 二	bichloride 二氯化物
bio-	生物	biodegradation 生物降解 biosphere 生物圈
by-	侧, 副, 边	by-effect 副作用
centi-	百分之一	centimeter 厘米
counter-	反抗, 对应	counteraction 反作用
deci-	十分之一	decigram 十分之一克
di-	二, 双, 偶	dimer 二聚物, dioxide 二氧化物