

双语教学

英汉环境科学 与工程词典

钟理 主编 潘伟斌 副主编

English-Chinese Dictionary of
Environmental Science and
Engineering for bilingual teaching



化学工业出版社

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前 言

1997年,由化学工业出版社组织部分高校共同承担编写出版了系列专业英语教材,涉及化学、化工、环境、生物、机械、电子、商务、制药、工业自动化、高分子材料工程、过程装备与控制工程及计算机等专业与学科,被全国许多院校广泛采用作为专业英语教材,深受教师和学生的欢迎,同时也为不同领域的工程技术人员和从事英语翻译和相应工作的科技工作者提供了参考。目前,国内高校广泛开展双语教学和高度重视专业英语教学,而且双语教学已成为评价学校和院系教学质量 and 教育部本科教学评价的重要指标之一。但是,高校大部分教师距离双语教学的要求还有一段差距,如何在课堂上用简单明了的英语对概念进行解释方面尤其如此。学生在学习专业课时,课堂上需要了解教师所教的内容,课后需要查阅一些国外的资料,所以,教师和学生都需要一部针对性强、释义明确、有助于提高专业英语水平的工具书。当今国内图书市场中已经出版了一些有关专业英语方面的工具书。本词典不同于已有的其他词典,它重点突出了“双语教学”的特点,用英语确切地解释或表达了该词的含义或定义等,帮助教师和学生进行双语教学和学习,推动高等院校的双语教学。

由于环境科学是一门新兴的综合性学科,与其他学科相互渗透相互交叉较多,所以,本词典既包括环境科学与工程领域的常用词汇、词组,还涉及化学、化工、生物、物理、管理、地学、法学、教育、经济、医学、数学等多学科,尤其是双语或专业英语教学或学习中常用的词汇、词组尽量收全,体现了环境科学中各学科、各专业知识的完整性和均衡性。对重要、常用或难理解的词,给予英文确切释义。词典释义主要参考国内已有的词典中文释义和国外教材、论文及文献等释义进行编写,力求简明、准确、科学。

本词典收词约4000条,带英文释义约占80%。本词典供从事环境科学与工程领域的教学、科研、工程技术、管理等方面的工作

人员使用，同时也供相关领域的读者释疑解惑和翻译之用。

本词典在编写过程中得到了华南理工大学以及化学工业出版社的大力支持。本词典结合当前形势及专业英语学习和双语教学的发展需要，参考了王连生主编的《环境科学与工程辞典》，方如康主编的《环境学词典》，黄仲涛主编的《现代化工词典》以及国外环境科学与工程方面的教材和文献的基础上进行编写。全书由华南理工大学的钟理任主编，潘伟斌任副主编，全书最后由钟理统稿，华南理工大学张腾云、黄君涛、熊帆、谢伟立、李燕、盘志凤参加了资料收集和编写工作，谨在此一并表示衷心感谢。由于时间所限，环境科学与工程涉及领域广泛，且新技术和新工艺层出不穷，发展迅速，限于编写人员的水平限制，可能出现错漏，希望读者不吝指正，使本词典在使用过程中不断得到改进。

编者

2006 年 4 月

凡 例

一、收词范围及释义

1. 本词典收录了与环境科学与工程领域中经常见到的单词、词组，并收录了与环境有关的化学、化工、生物、医学、地学等领域的单词、词组，词条共约 4000 条。

2. 单词后用国际音标标出了该词读音；重要的、需要解释的单词或词组给出了简明、准确的英文释义，有利于读者对词条的理解。

3. 释义中不同义项中间用逗号“,” 分开。

如：pasture 牧场，牧草

二、编排及检索

词目按英文字母顺序排列。词目中的阿拉伯数字、符号、空格均不参加排序。

三、符号

1. 圆括号（ ） 表示词义中可省略的词，如 phreatophyte（根深达地下潜水层的）地下水湿生植物。

2. 方括号 [] 表示词汇的国际音标，如 absorber [əb'sɔ:bə] 吸收装置。

四、为读者查阅方便，书后附有中文索引。

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A

abatement of the oil mist from cooking

厨房油烟净化

abiotic [ˈaɪbaɪˈɒtɪk] 无生命的, 非生物的

abiotic environment 非生物环境

abiotic factors 非生物因素 It indicate nonliving factors that influence the life and activities of an organism.

absolute density 绝对密度 It means the individual number of organism or species biomass unit area or space.

absolute error 绝对误差

absolute humidity 绝对湿度

absolute lethal dose; LD₁₀₀; absolute lethal concentration LC₁₀₀ 绝对致死剂量或浓度

absorbability of soil 土壤吸收性能

absorbed dose 吸收量 It refers to the quantity in blood for pollutants entering organism, and also is the ratio of the average energy of matter given by ionization radiation in one volume element and the mass of matter in this volume element.

absorber [əb'sɔ:bə] 吸收装置

absorption [əb'sɔ:pʃən] 吸收

absorption of fluorine gas by alkali 碱吸收含氟废气 Absorption of fluorine gas by alkali is the purification

method to use alkali solution, such as NaOH, Na₂CO₃, NH₃ or lime cream to absorb fluorides, HF and SiF₄.

absorption of fluorine gas by water 水吸收含氟废气 Absorption of fluorine gas by water is the purification method to use water as absorbent to absorb fluorides HF, SiF₄ in waste gas.

absorption of hydrogen sulfide by basic salt solution 碱性盐溶液吸收控制硫化氢 It is the purification method to use basic salt solution as absorbent to absorb hydrogen sulfide.

absorption of hydrogen sulfide by weak alkali solution 弱碱溶液吸收控制硫化氢 It is the purification method to use the property that weak alkali solution can absorb acid gas or react with acid gas to remove hydrogen sulfide.

absorption of odor 臭气吸收 It is a treatment method to remove odor by liquid absorbent.

absorption of organic gas 有机废气吸收 It is a purification treatment to use absorptive liquid to absorb concentrated organic gas.

absorption structure of perforated pan-

el 穿孔板吸声结构**absorption tower technological design****吸收塔工艺设计****absorptive muffler 吸收式消音器**

An absorptive muffler is one whose noise reduction is determined mainly by the presence of fibrous or porous materials, which absorb the sound.

acaricide [ə'kæri,said] 杀螨剂**accelerant aeration method 加速曝气**

法 It is one of the activated sludge processes to utilize the rising period of microorganism growth rate to treat wastewater.

accelerated cost recovery system**(ACRS) 加速成本回收制**

ACRS means a depreciation method applied to limited partnership assets placed in service in 1981 or before.

accelerating clarifier 加速澄清池

It is the water clarifier to combine mixing, flocculating and settling water treatment processes in a tank so as to increase its treatment efficiency.

accelerator [æk'seləreɪtə] 加速器

It is a device to produce particles with high velocity.

accelerometer [æk'seləfɪltə] 加速度计

It is the electromechanical transducer used to measure vibration acceleration.

acceptor model 受体模型**accidental error 偶然误差****acclimation [ækklai'meɪʃən] 适应环**

境/驯化 It means adjustment to

slowly changing new conditions.

accumulation [ækju:mju'leɪʃ(ə)n] 蓄

积作用 Accumulation refers to the continuous accumulation of environment pollutants in water or other bodies.

accumulation mode 积聚模

It means a type of distribution of particle size or diameter, whose diameter scope ranges from 0.05 to 2 μm .

accuracy assessment protocol 精确评

估方案 It is a part of environmental monitoring programs which consists of three major components, such as the response design, the sampling design and analysis.

acetylene residue 电石渣

It is the grey thin sands discharged in the production process using calcium carbide as material.

acid ['æsid] 酸, 酸性物质

It means any substance that, when dissolved in water, releases hydrogen ions.

acid and alkaline wastewater 酸碱度

水 Acid and alkaline wastewater is the wastewater containing acid or alkali, which is discharged in the process of industrial production.

acid deposition 酸沉降

The theory of acid deposition contains both "humid deposition" and "dry deposition". The "humid deposition" illustrates precipitation under PH below 5.6, which includes rainfall, snow, frost, fog, dew and so on. The "dry deposition" is the

process of transferring all acid substances in the air to the ground.

acid extraction 酸萃取 It usually means the use of hydrochloric acid to extract heavy metal contaminants from soils.

acid former 酸形成菌

acidic soot 酸性煤烟

acidity [ə'siditi] **酸度** It means the total amount of the material which can neutralize strong base in water.

acid mine drainage (AMD) 酸矿污水

acidophilic microorganisms 嗜酸微生物 It mainly means the acidophilic bacterium which takes acid as food.

It can be used in neutralization process of wastewater and is a wastewater biological treatment.

acid rain 酸雨 Acidic soot is the particles produced by incomplete burning of carbonic substances and the solid mixtures coagulated by agglomerated tars.

acoustically excited vibration 声致振动 Acoustically excited vibration means the phenomenon that the component part in the sound field is vibrated due to the excitation of sound wave.

acoustic fatigue 声疲劳 It refers to the split phenomenon of crystalline solid in the action of undulated pressure produced by strong sound wave.

acoustic impedance 声阻抗

acoustic shield 隔声罩 Acoustic shield is the device to insulate effect of noise, which is applicable to control high noise of various machines. It is made by sound absorption materials.

acoustic wave precipitation 声波除尘

The collision, contact and coagulation as well as settlement process to remove dust from air between particles caused by the vibration of acoustic wave is called acoustic wave precipitation.

acquired immune deficiency syndrome (AIDS) 艾滋病

activated biofilter 活性生物滤池

Activated biofilter means the sewage treatment process consisting of biological filter, aeration basin and secondary sedimentation basin.

activated carbon 活性炭 Activated carbon is an extremely adsorbent material used in water treatment to remove organic contaminants, which is produced in a two-stage process: at first, a suitable base material such as wood, peat, vegetable matter, or bone is carbonized by heating the material in the absence of air, and then the carbonized material is activated by heating it in the presence of air, CO_2 , or steam to burn off any tars it has and to increase its pore size.

activated carbon adsorption 活性炭吸附 It is one of the water treat-

ment processes to use properties of physical and chemical adsorption, oxidation, catalytic oxidation, reduction for activated carbon to remove pollutants in water.

activated carbon filtration 活性炭过滤 Activated carbon filtration is the water filter treatment process using activated carbon as filter material.

activated carbon process of flue gas desulfurization 活性炭吸附法脱硫 Activated carbon process of FGD is the desulfurization method to utilize the adsorptive capability of activated carbon to adsorb and purify SO_2 in flue.

activated oxygen 活性氧 It means the reduced product of molecular oxygen with 2 - 3 electrons, and it is unstable, easily decomposed, and an intermediary with strong oxidization potential.

activated sludge 活化污泥 It is the main function matter in the activated sludge treatment system.

activated sludge culture 活性污泥培养 Activated sludge culture means the process to utilize excrement and urine to feed activated sludge at the beginning of activated sludge biological treatment process.

activated sludge process 活性污泥法 Activated sludge process is the biological treatment technology of

sewage whose main medium is activated sludge. By using organics in wastewater as culture medium, the activated sludge process is to cultivate activated sludge consecutively when dissolved oxygen is enough, and then purify wastewater by adsorptive flocculation or oxidated decomposition actions.

activated sludge system 活性污泥系统

activation [ˌæktɪ'veɪʃən] **活化作用**

active alumina 活性氧化铝 It is the porous grain-like alumina, with the ability of selectively adsorbing gas, steam and some liquids.

It is a widely used adsorbent in wastewater or waste gas treatment.

active field shield 主动屏蔽 Active field shield is to use shield materials to limit electromagnetic energy produced by certain equipment, system or its branch system to stipulated space or to reduce the outside leakage of electromagnetic energy to allowable degree.

active noise control 有源噪声控制

Active noise control is the technology to control the former noise by secondary sound with opposite phase.

active silica 活性硅土

active vibration reduction 有源减振

Active vibration reduction is the control method of active vibration used to reduce structure vibration.

active volume 有效体积

acute hazards event (AHE) 急性危害事件

acute toxicity 急性毒作用 **Acute toxicity** is the harm induced when environment pollutants act on human or animal bodies one time or many times within 24 hours of short duration.

adaptation [ˌædæp'teɪʃən] 适应, 适应作用 An alteration or adjustment in structure or habits, often hereditary, by which a species or individual improves its condition in relationship to its environment.

adaptive radiation 适应性辐射 It indicates the rapid speciation of a single or a few species to fill many ecological niches.

addiction sewage fungus 嗜污水真菌

adhesion settling 吸持沉降 It is the transfer process in which a pollutant clings to suspended solids in water and then settles with them.

administrative fine 行政罚款

administrative regulations of environment 环境行政法

adsorbent regeneration 吸附剂再生

adsorption [æd'sɔ:pʃən] 吸附 It is a diffusional process that involves the transfer of molecules from the gas state into liquid state because of the contaminant concentration gradient between the two phases, and

a unit operation that is enhanced by all the factors which normally affects mass transfer. Adsorption is the process by which molecules of a gas or liquid adhere to the surface of a solid.

adsorption-biodegradation 吸附-生物降解工艺 Adsorption-biodegradation is a treatment process developed by Germany Professor B. Bohnke in the middle of 1970s.

It is coupled by both adsorption and biology processes, and is an effective treatment technology.

adsorption-biofilm model 吸附-生物膜模型

adsorption capacity 吸附容量

adsorption equilibrium 吸附平衡 It is the homeostasis that adsorbates absorbed by absorbent surface is equal to the substance desorbed from it at the same time under the certain conditions.

adsorption heat 吸附热 It is the heat released or absorbed in the process of adsorption.

adsorption isotherms 吸附等温线

adsorption process 吸附法处理 It is the water or gas treatment process to absorb pollutants in water or air using porous solid matters as absorbers.

adsorption-regeneration method 吸附再生法

adsorption tower technological design 吸附塔工艺设计

adsorption velocity 吸附速度 It means the matter mass adsorbed by per unit mass adsorbent per unit time.

adsorptive load curve 吸附负荷曲线 It is the curve, which demonstrates that the concentration of adsorbate in flowing phase varies with the different height of adsorbent bed under the flowing conditions.

adsorptive specificity 吸附选择性 It is the prior adsorptive ability that adsorbate has for some substances.

advanced oxidation processes (AOPs)

高级氧化过程 Advanced oxidation processes are the strong oxidation processes in which hydroxyl free radical $\text{OH} \cdot$ is generated. $\text{OH} \cdot$ is an extremely strong oxidant and can change almost all pollutants in wastes to CO_2 , H_2O and inorganic salts without selectivity. Advanced oxidation processes cover the coupling of $\text{H}_2\text{O}_2/\text{O}_3$, TiO_2/UV , O_3/UV and so on.

advanced treatment 高级处理

advection inversion 平流逆温 It means surface-based inversion associated with horizontal air flow, such as when warm air moves over a cold surface.

adverse impacts 不利影响 It refers to the impacts that have bad or deleterious effects on environment.

aerated lagoon 曝气式氧化塘

aerated oxidation 曝气氧化 It is a kind of oxidation pond to use mechanical or diffusing aerator for aeration with manpower enhancement.

aerated oxidation pond 曝气氧化池 It is a lagoon system in which oxygen is provided in mechanical or diffusible aeration way.

aerating apparatus 曝气装置

aeration basin 曝气池 It is the main structure for biological treatment by activated sludge, and it is the core part in activated sludge process.

aeration floatation 曝气气浮法 It is the water treatment process to elevate suspended solids in wastewater to liquid surface and separate them that are emulsified or whose specific gravity is closed to one by the floatation and elevation of bladder.

aeration grit settling tank 曝气沉砂池 It is the horizontal grit settling tank which has the aeration equipment.

aeration tank 曝气槽

aeration time 曝气时间 This is the time needed for sewage to pass through an aeration basin.

aerator [eiəreitə(r)] 曝气器 It is one of key devices for aerobic wastewater treatment. It can fill the oxygen as well as keep suspended solids suspending in the mixture fluid in order to avoid sedimentation.

tation of activated sludge at the bottom of aerator.

aerobic [ˌeɪəˈrəʊbɪk] 依靠氧气的, 与需氧菌有关的 It means living or occurring only in the presence of oxygen.

aerobic aerated oxidation pond 好氧性曝气氧化塘

aerobic biological treatment 好氧生物处理

aerobic composting 好氧堆肥原理

aerobic digestion of sludge 污泥好氧消化 It is a process to stabilize sludge by the action of anaerobic microbe's metabolism.

aerobic pond 好氧塘

aerobic process 好氧过程 It is one of the unit operations in wastewater treatment, in which heterotrophic bacteria oxidize about one-third of the colloidal and dissolved organic matter to stable end products ($\text{CO}_2 + \text{H}_2\text{O}$) and convert the remaining two-thirds into new microbial cells that can be removed from the wastewater by settling. Municipalities and industries have relied almost exclusively on aerobic rather than anaerobic biological processes for treating their liquid organic wastes. Aerobic treatment has predominated because of its simplicity, stability, efficient and rapid conversion of organic contaminants to microbial cells, and relatively odor-

free operation.

aerobic respiration 有氧呼吸 It is a complex process that occurs in the cells of most living organisms, in which nutrient organic molecules such as glucose combine with oxygen and produce carbon dioxide, water, and energy.

aerobic wastewater treatment 好氧污水处理 It is the biological treatment process. When oxygen is present, organic wastes, as nutritious matters, are oxidized and decomposed into the best hydrogen embracer so as to decrease the concentration of organics in wastewater.

aerometric information retrieval system (AIRS) 气体测量情报检索系统 It is a database management system for the national database for ambient air quality emissions and compliance data.

aerosol pollution 气溶胶态污染物

It means the gaseous scatter system which is composed of solid and liquid particles in gas medium.

aestivation [ˌɛɪstɪˈveɪʃən] 夏眠 It refers to the state of some animals when they become dormant during the hot summer months.

aflatoxin [ˌæfləˈtɒksɪn] 黄曲霉毒素 It is a kind of mildew toxin induced by afla-mildew, which often parasite in grain, especially in corns or peanuts in humid and hot zones. Its

toxin can result in food pollution or lead to cancer.

aflatoxin carcinogenicity 黄曲霉毒素致癌性

aflatoxin toxicity 黄曲霉毒素毒性

age distribution 年龄分布 It indicates the comparative percentages of different age groups within a population.

ageing ['eidʒɪŋ] 陈化 It refers to the process that the primary precipitation and mother liquid are placed for a period after the precipitation produced in chemical reaction is completely separated out.

age structure 年龄结构 It indicates percentage of the population at each age level in a population.

aggregation [ægrɪ'geɪʃən] 聚集 It is the process in which the colloid particles collide with each other and combine, which can be divided into both flocculation and coagulation.

agricultural backwater pollution 农业回流水污染

aging ['eidʒɪŋ] 老化 It means a process that slowly binds the compounds into the soil mineral fraction.

agricultural cropland loss 农田流失 It refers to the decrease of cropland due to various causes.

agricultural ecology 农业生态学 It is the study of agricultural ecosystems and their components as well

as function in the context of the landscapes that contain them.

agricultural ecosystem 农业生态系统

agricultural environment 农业环境

It is the integration of essential conditions, such as water, air, sunshine, soil and so on, which agricultural biology like crops, livestock and fish growth and breed demands.

agricultural environment destroy 农业环境破坏

It is the phenomenon that the change of agricultural environment is caused by human or natural causes and then the agricultural production is influenced and destroyed directly.

agricultural pollution prevention and control planning 农业污染控制规划

agricultural revolution 农业革命 It refers to gradual shift from small, mobile hunting and gathering bands to settled agricultural communities in which people survived by learning how to breed and raise wild animals and to cultivate wild plants near where they lived. It began 10000-12000 years ago.

agricultural soil 农业土壤

agricultural wastes 农业废物 Wastes and residues resulting from diverse agricultural activities—such as the planting and harvesting of row, field, and tree and vine crops,

the production of milk, the production of animals for slaughter, and the operation of feedlots—are collectively called agricultural wastes.

agricultural wastewater 农业废水

It refers to wastewater from diverse agricultural activities—such as the planting and harvesting of row, field, and tree and vine crops, the production of milk, the production of animals for slaughter, the operation of feedlots and chemical fertilizers as well pesticide.

agroecosystem [ˌægrəʊˌiːkəʊ'sistəm]

农业生态系统 It refers to an ecosystem created by agriculture. It has low genetic, species, and habitat diversity

agroforestry [ˌægrəʊ'foristri] **农林业**

air and water pollution abatement 消除空气与水污染

It means that some ways and techniques are used to control and abate the air and water pollution so as to reduce their harm to environment.

airborne particle 飘尘 It refers to the suspend particle whose radius is less than 10 μm .

airborne pollutant 气悬污染物 It is the pollutant which existing in air, including dust, tiny suspended particles and so on.

air-borne residuals 悬浮在空气中的残余物 It usually refer to dust, particles and others from combus-

tion processes, which can are commonly reduced by changing combustion processes and using emission control devices such as scrubbers and filters.

air-borne sound 空气声 Air-borne sound is the sound propagated using air as a medium inside or outside the room environment.

air-cloth ratio 气布比 It is the ratio of the gas quantity filtered per unit time and the area of filtering cloth used to filter particulates, which is used in the description of the dust removal.

air contaminate 空气污染物 It refers to suspended grains, gases and other compounds which are different from vapor.

air damper 空气阻尼器 Air damper means the device to reduce or control damping using air as damping.

air-dried pulp (ADP) 自然干燥纸浆 It means the moisture content of the pulp is in equilibrium with the ambient atmosphere. Commercially, pulp is usually described as air-dried when the moisture content of the pulp is 10%.

air floatation 气浮 It is often an aeration process under normal pressure. After inhering impure particles with some minor air bubbles as carriers, their density is less than that of water, so they can be taken out to

surface by air bubbles to separate from the water.

air injection system 助燃空气设备

air mass 气团 It an extensive body of the atmosphere whose physical properties, particularly temperature and humidity, exhibit only small and continuous differences in the horizontal. It may extend over an area of several million square kilometres and over a depth of several kilometers.

air mass modification 气团变性

air monitoring 大气监控 It means the direct method of air sampling and analysis, which is considered the best available technique for identifying air quality changes.

air pollution 空气污染 Air pollution (atmosphere pollution) is a phenomenon to bring about harm towards human being and other living creatures because the concentration of pollutants in atmosphere reaches a certain level to result in the nature to lose its self-purification capability as well as to destroy ecosystem.

air pollution chemistry 大气污染化学 It is a branch of environmental and pollution chemistry science as well as also a part of atmospheric chemistry. It mainly studies atmospheric environment, especially the pollutant's chemical composition,

property and its existing-state, the physical and chemical characteristic, and chemical behavior as well as phenomena on the troposphere.

air pollution climatology 空气污染气候学

air pollution concentration prediction 空气污染浓度预报

air pollution control engineering 大气污染控制工程 It is a filed of environment engineering, whose task is to adopt engineering technology measures to prevent and alleviate air environment pollution caused by human activities, improve and protect air environment quality and utilize energy sources reasonably.

air pollution forecast 空气污染预报

air pollution meteorology 空气污染气象学

air pollution monitoring 大气污染监测

air pollution potential prediction 空气污染潜势预报

air pollution source 空气污染源

air pollution source control 大气污染源控制

air quality impact assessment process

空气质量影响评价过程 It is a comprehensive assessment of a proposed project's air quality impacts that involves the following six steps: (1) Establish background air quality levels; (2) Identify applicable air quality criteria and standard; (3)