

## Chapter 13 Superconductors

\*copper [ˈkʌpə] n. (名詞 noun)

1. 銅[U]

2. 銅製品[C]

\*aluminum [əˈlʊmɪnəm] n. (名詞 noun)

1. 【美】鋁[U]

These cooking utensils are made of **aluminum**.

這些炊具是鋁製的。

\*possess [pəˈzɛs] vt. (及物動詞 transitive verb)

1. 擁有,持有;具有;佔有[W]

The country **possesses** rich mineral deposits.

這個國家擁有豐富礦藏。

2. 懂得,掌握[W]

3. 使擁有,使掌握[H][(+of/with)]

Though plain-looking, Mary is **possessed** of great intelligence.

雖然相貌平平,瑪麗卻擁有智慧。

\*marvelous [ˈmɑːvələs] a. (形容詞 adjective)

1. 令人驚歎的;非凡的;不可思議的

You have a **marvelous** gift for science.

你有科學方面的非凡天賦。

He had had the most **marvelous** experience.

他有過極奇特的經歷。

\*alloy [ˈæloɪ]n. (名詞 noun)[C][U]

### 1. 合金

Brass is an **alloy** of copper and zinc.

黃銅是銅和鋅的合金。

[əˈloɪ]vt. (及物動詞 transitive verb)

### 1. 使成合金[+(with)]

**alloyed** steel

合金鋼

\*substance [ˈsʌbstəns] n. (名詞 noun)

### 1. 物質[C]

Ice and snow are different forms of the same **substance**, water.

冰和雪都是水這一種物質不同的形式。

\*prohibitive [prəˈhɪbɪtɪv]a. (形容詞 adjective)

### 1. 禁止的,禁止性的

### 2. (費用、價格等)過高的

The cost of making them by hand is **prohibitive**.

用手工製作它們的成本過高。

\*maintain [menˈten]vt. (及物動詞 transitive verb)

### 1. 維持;保持;使繼續

Ann and Mary ***maintained*** their friendship for the next thirty years.

安妮和瑪麗在此後的三十年中一直保持著她們之間的友誼。

## 2. 維修,保養

Frank ***maintains*** his car very well.

法蘭克把自己的車子保養得很好。

\*improvement [ɪmˈpruvmənt]n. (名詞 noun)

### 1. 改進,改善;增進[U][C][(+in)]

I cannot see any ***improvement*** in your writing.

我看不出你在寫作方面有什麼改進。

### 2. 改進處,改善處[C]

Painting the room yellow is a great ***improvement***.

把這房間漆成黃色確實好多了。

\*dramatic [draˈmætɪk]a. (形容詞 adjective)

### 1. 戲劇的;劇本的

give ***dramatic*** performances

演出戲劇

### 2. 戲劇般的;戲劇性的;充滿激情的

***dramatic*** changes in the international situation

國際形勢的戲劇性變化

### 3. 引人注目的

\*immense [ɪˈmɛns] a. (形容詞 adjective)

#### 1. 巨大的;廣大的;無邊無際的;無限的

John felt an **immense** gratitude to Wilson.

約翰極為感激威爾遜。

The Atlantic Ocean is **immense**.

大西洋浩瀚無邊。

\*trigger [ˈtrɪɡə] vt. (及物動詞 transitive verb)

#### 1. 扣扳機開(槍);發射

#### 2. 觸發,引起[(+off)]

His action has **triggered** off a crisis.

他的行動已經引起一場危機。

A spark **triggered** the explosion.

一粒火星引起了這場爆炸。

\*flurry [ˈflʌrɪ] n. (名詞 noun)

#### 1. 陣風

#### 2. 小陣雪

#### 3. 慌張;混亂

vt. (及物動詞 transitive verb)

#### 1. 使恐慌;使激動

\*synthesize [ˈsɪnθəsaɪz] vt. (及物動詞 transitive verb)

1. 綜合;合成
2. 【化】(使)合成

\*compound [ˈkɑmpaʊnd]n. (名詞 noun)[C]

1. 混合物;化合物;複合物
2. 複合字,複合句

a. (形容詞 adjective)

1. 合成的,複合的,混合的

"Broad-shouldered" is a **compound** word.

"Broad-shouldered"是個複合字。

2. 【文】複合的,合成的

[kɑmˈpaʊnd]vt. (及物動詞 transitive verb)

1. 增加,加重,使惡化[H]

He **compounded** his mistake by arguing with the policeman.

他同警察爭了起來,使自己錯上加錯。

2. 使混合;使化合;使合成[(+into)]

He **compounded** various ingredients into an effective drug.

他將各種成分混合成一種有效的藥物。

\*nitrogen [ˈnaɪtrədʒən]n. (名詞 noun)

1. 【化】氮[U]

**Nitrogen** forms about 78% of the earth's atmosphere.

氮約佔地球大氣的百分之七十八。

\*distinct [dɪˈstɪŋkt] a. (形容詞 adjective)

1. 與其他不同的,有區別的[(+from)]

The twins had **distinct** tastes.

這兩個雙胞胎嗜好不同。

2. 明顯的,清楚的;確定無誤的

You should make your writing **distinct**.

你應把字寫清楚。

3. 難得的

\*capacity [kəˈpæsəti] n. (名詞 noun)

1. 能力,才能,接受能力,理解力[C][U][(+for)]

He has a great **capacity** for learning languages.

他學語言的能力很強。

2. 容量,容積[U][S]

The theater has a seating **capacity** of 800.

這個劇場可容納八百名觀眾。

3. 能量,生產力[U][S]

The auto plant now has an annual **capacity** of 12,000 cars.

這家汽車廠現在每年能生產一萬二千輛汽車。

\*levitate [ˈlevəˌteɪt] vt. (及物動詞 transitive verb)

1. 使升空(或飄浮)

vi. (不及物動詞 intransitive verb)

1. 升空,飄浮

\*magnetize [ˈmæɡnəˌtaɪz] vt. (及物動詞 transitive verb)

1. 使磁化

2. 吸引;迷住

vi. (不及物動詞 intransitive verb)

1. 磁化,起磁

\*enthusiastic [ɪnˌθjuːziˈæstɪk] a. (形容詞 adjective)

1. 熱情的;熱烈的;熱心的[**(+about/over/at)**]

David is very **enthusiastic** about the plan.

大衛對該項計劃十分熱心。

They are **enthusiastic** admirers of that movie star.

他們是那位電影明星的狂熱崇拜者。

My parents are **enthusiastic** skiers.

我的父母是滑雪迷。

\*envision [ɪnˈvɪʒən] vt. (及物動詞 transitive verb)

1. 想像,展望

\*enormous [ɪˈnɔːrməs] a. (形容詞 adjective)

1. 巨大的,龐大的

Their sitting room was **enormous**.

他們的起居室很大。

\*accelerator [ækˈseləretə] n. (名詞 noun)

1. 加速裝置

2. 油門

3. 【化】催化劑;促進劑

\*phenomenon [fəˈnɒmənən] n. (名詞 noun)[C]

1. 現象

The employment problem tends to be a city **phenomenon**.

就業問題常常是一個城市現象。

\*magnesium [ˈmæɡˈniʃɪəm] n. (名詞 noun)

1. 【化】鎂[U]

©**superconductivity**: Almost total lack of electrical resistance in certain materials when they are cooled to a temperature near absolute zero. Superconducting materials allow low power dissipation, high-speed operation, and high sensitivity. They also have the ability to prevent external magnetic fields from penetrating their interiors and are perfect diamagnets . Since it was first discovered in mercury by Heike Kamerlingh Onnes in 1911, similar behavior has been found in some 25 other chemical elements and in thousands of alloys and compounds. Superconductors have applications in medical imaging, magnetic energy-storage systems, motors, generators, transformers,



computer components, and sensitive magnetic-field measuring devices.

©**Magnetic levitation, maglev, or magnetic suspension** is a method by which an object is **suspended** with no support other than **magnetic fields**. The **electromagnetic force** is used to counteract the effects of the **gravitational force**.

**Earnshaw's theorem** proves that using only static ferromagnetism it is impossible to stably levitate against gravity, but servomechanisms, the use of diamagnetic materials or superconduction, or systems involving eddy currents permit this to occur.

In some cases the lifting force is provided by magnetic levitation, but there is a mechanical support bearing little load that provides stability. This is termed **pseudo-levitation**.

