



雨树榕榕

英国最具影响力的青少年科普读物之一

(英)劳姆(Raum,E.) 著  
李慧杰 译



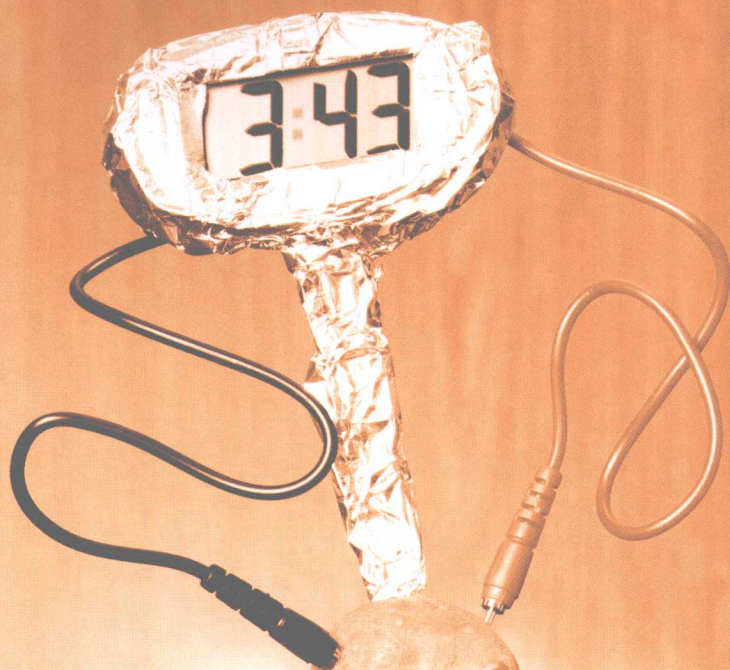
# Potato Clocks and Solar Cars

土豆钟和太阳能汽车【可再生的和不可再生的能源】



哈尔滨工业大学出版社  
HARBIN INSTITUTE OF TECHNOLOGY PRESS





# Potato Clocks and Solar Cars

土豆钟和太阳能汽车【可再生的和不可再生的能源】

哈尔滨工业大学出版社



版权专有 侵权必究

---

图书在版编目 ( CIP ) 数据

土豆钟和太阳能汽车: 英汉对照 / (英) 劳姆 (Raum, E.) 著; 李慧杰译. — 哈尔滨: 哈尔滨工业大学出版社, 2009.4

(雨树溶溶. 第2辑)

ISBN 978-7-5603-2821-8

I. 土… II. ①劳…②李… III. ①英语 - 汉语 - 对照读物②科学知识 - 青少年读物  
IV. H319.4: Z

中国版本图书馆CIP数据核字(2009)第037758号

---

黑版贸审字08-2009-043号

Potato Clocks and Solar Cars by Elizabeth Raum

©Harcourt Education Ltd 2008

The moral right of the proprietor has been asserted.

英汉双语版由Capstone Global Library Limited授权哈尔滨工业大学出版社在中国大陆地区独家出版发行

---

责任编辑 孙 杰 田 秋

美术设计 屈 佳

出版发行 哈尔滨工业大学出版社

社 址 哈尔滨市南岗区复华四道街10号 邮编 150006

传 真 0451-86414749

网 址 <http://hitpress.hit.edu.cn>

印 刷 黑龙江日报印务中心

开 本 787×1092mm 1/16 印张 24 字数 600 千字

版 次 2009年4月第1版 2009年4月第1次印刷

书 号 ISBN 978-7-5603-2821-8

印 数 1—5000

定 价 201.60 元 (共12本, 含光盘)

---

(如因印装质量问题影响阅读, 我社负责调换)

# Contents 目录

Everyday energy 日常的能量	4
Dinosaur bones and dead plants 恐龙骨和枯死的植物	6
Pedalling a milkshake 骑自行车来制作奶昔	10
Nuclear energy 核能	12
Soaking up rays 吸收太阳光	14
Blowing in the wind 随风转动	16
Corn and cows 谷物和奶牛	18
Water power 水产生的能量	22
More and better energy 更多更好的能量	28
Glossary 词汇表	30
Want to know more? 想知道得更多吗?	31
Index 索引	32

有些单词被印刷成粗体，**就像这样**。你可以在第30页中找到它们的意思，还可以在单词第一次出现时，在相关书页下方的方框内发现它们的含义。

# Everyday energy

## 日常的能量

We use **energy** every day. Energy is the ability to make things move or change. We use energy for work and for fun. Energy lights, heats, and cools our homes. We use energy to run cars, lorries, and buses.

Hospitals count on energy every day. They use it to look after ill people. Office buildings and schools need energy, too.

Energy adds fun to our daily lives. Energy runs our televisions and computers. Without energy, we would not have films. Without energy, our lives would change in many ways. We depend on energy. But where does energy come from?

我们每天都在使用**能量**。能量是使物体运动或改变的力量。我们无论是工作还是娱乐都需要能量。能量可以使我们的家明亮、温暖或者凉爽。我们利用能量来开动小轿车、卡车和公共汽车。

医院每天都使用能量来照顾患者。办公大楼和学校里也需要能量。

能量给我们的生活增添乐趣。能量使得电视机和电脑正常运转。没有能量，我们就看不到电影了。没有能量，我们的生活在很多方面将会面目全非。但是，能量从何而来呢？

This computer needs ►  
energy to run.

这台电脑需要能量来运转。







# Dinosaur bones and dead plants

## 恐龙骨和枯死的植物

Much of the world's **energy** comes from one source. It comes from **fossil fuels**. Fossil fuels are made from dead animals and plants buried deep in the ground. Fossil fuels form over millions of years.

**Coal** is one type of fossil fuel. Coal is a rock. It is found all over the world. People use coal to heat houses and run factories.

世界上大多数的**能量**来源都相同，都是化石燃料。**化石燃料**是由深埋在地下的枯死的动植物经过数百万年逐渐形成的。

**煤**是一种化石燃料，呈石块状，世界各地皆可找到。煤不仅用来给屋子取暖，还可以使工厂运转。

▼ Most cars use fossil fuels.  
大多数的汽车都使用化石燃料。





▲ Mining coal is hard, dirty work.

采煤是一种又脏又累的工作。

Oil is another fossil fuel. It is also called **petroleum**. Oil is used to heat homes and businesses. Most petroleum comes from underground. Some comes from beneath the ocean.

**Natural gas** is also a fossil fuel. Natural gas is a gas that is found underground. It gives energy when burned. People use it to heat their homes.

油类，也称作**石油**，是另一类化石燃料。人们用它给住宅或商业场所取暖。多数的石油来自地下，还有一些来自海底。

**天然气**也是一种化石燃料，它是在地下发现的气体。当它燃烧时，就会释放能量。人们用它来给房屋供热。



# Potato clocks

## 土豆钟

No one knows how much longer **fossil fuels** will last. They are called **non-renewable energy** sources. This means we could use them up.

More and more people need energy. We must find sources that will not run out. We need to find new or **alternative** energy sources. These sources must be **renewable**. That means they will not run out.

The wind is renewable. It never runs out. Water is renewable, too. It replaces itself over time. So do potatoes!

Fossil fuels **pollute** the air, or make it dirty. This can make people ill.

没有人知道**化石燃料**还够用多久。人们把化石燃料称作是**不可再生能源**，因为它们是可以用完的。

越来越多的人需要能量，我们必须找到不会用完的能源。我们需要找到新的或**可替代**的能源。这些能源必须是**可再生的**，也就是取之不尽的。

风是可以再生的，取之不尽。水也是可以再生的，隔一段时间就会重新形成水。土豆也能这样！

化石燃料**污染**空气，使空气变得污浊，进而使人生病。



<i>Fossil fuels</i> 化石燃料	<i>yes</i> 是	<i>no</i> 否
<i>Renewable</i> 可再生的		✓
<i>Clean</i> 清洁的		✓
<i>Safe</i> 安全的	✓*	
<i>Low cost</i> 低成本的		✓

\*Note: Although fossil fuels are normally safe to use, they can sometimes cause fires.  
\*注：通常情况下使用化石燃料是安全的，但有时也会造成火灾。

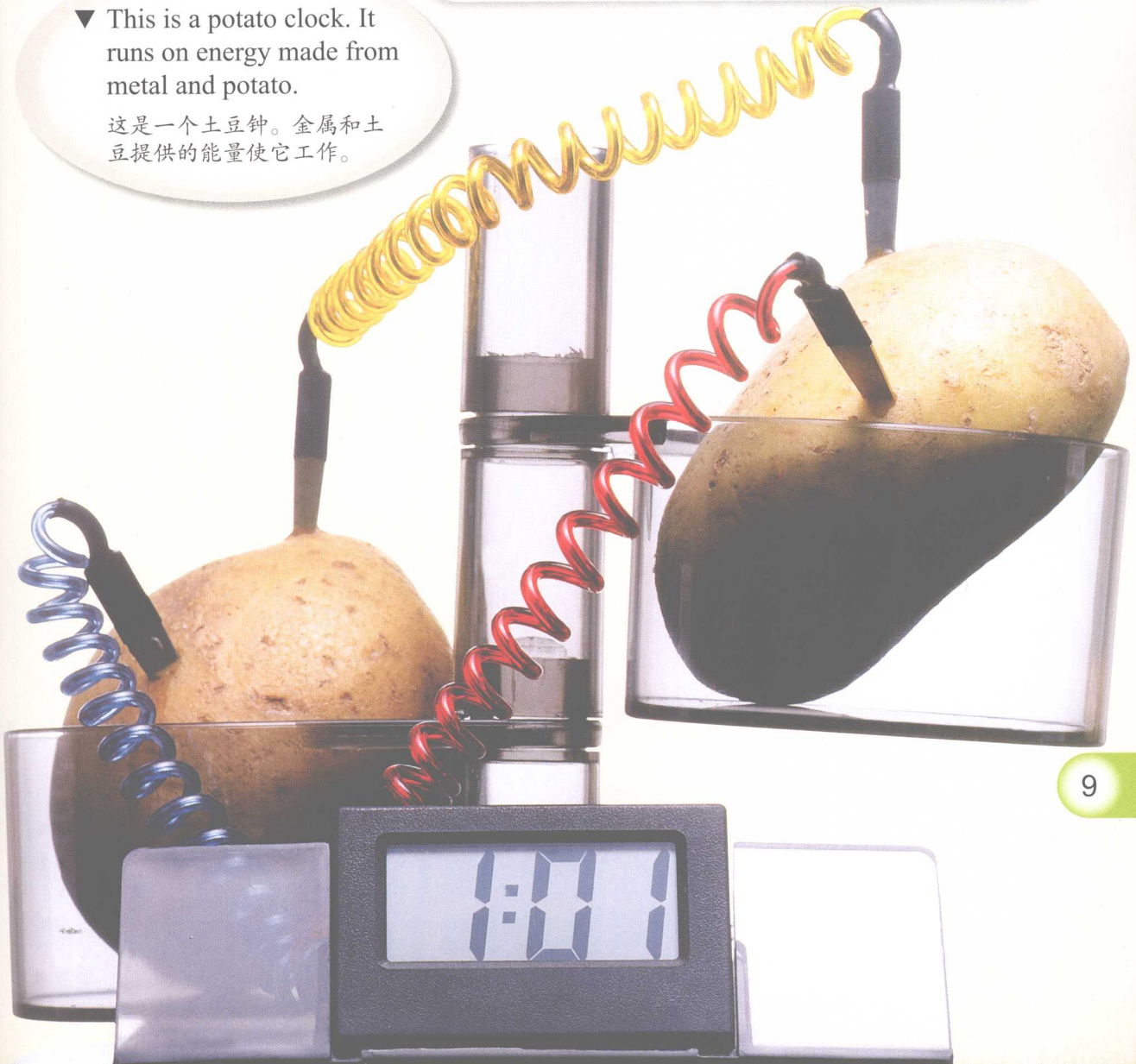
## Creative clocks 一个充满创意的时钟

Science students can use something special to run calculators and clocks. They use potatoes and lemons. Using potatoes and lemons for energy is fun. But their energy is very weak. It cannot heat a house or run a car.

理科学学生可以利用某些特殊的东西来让计算器和时钟工作。他们使用土豆和柠檬来获取能量，这种方法很有趣。但是产生的能量太微弱了，无法用于房屋取暖，也不能用来驱动汽车。

▼ This is a potato clock. It runs on energy made from metal and potato.

这是一个土豆钟。金属和土豆提供的能量使它工作。





# Peddalling a milkshake

## 踏自行车来制作奶昔

People make **energy**, too. People can **renew** (replace) their energy with a good meal and a nap. There are many tasks we can do ourselves. We can wash dishes by hand. We can hang washing outside to dry. Are there other ways we can use our own energy?

Walking can take us to the tops of mountains. Walking can take us to school or to the shops. Walking or cycling are good ways to travel short distances.

人自身也可以产生**能量**。而吃一顿美餐或打上一个盹就能使这些能量**再生**。我们每天可以做很多事情，比如洗盘子、晾衣服。我们还可以利用自身的能量做些别的什么事情吗？

我们可以步行爬到山顶。我们也可以步行去上学或购物。步行或骑车是短途旅行的最佳方式。

▼ There are some places you can only reach on foot.

有些地方只有靠步行才能到达。



- This student uses bicycle pedals to run a blender. The pedals supply the energy to make it run.

这个学生通过骑自行车的脚蹬来带动搅拌机工作。两个脚蹬运动所产生的能量使搅拌机转起来。

People energy 人体能量	yes 是	no 否
Renewable 可再生的	✓	
Clean 清洁的	✓	
Safe 安全的	✓	
Low cost 低成本的	✓	

Note: Travel by foot or bike is slow and takes time.  
注：步行或骑车旅行的速度较慢，用时较多。

## Walk talk 步行小常识

A woman's average walking speed is 4.8 kilometres per hour (3 miles per hour). A man's is 5.6 kilometres per hour (3.5 miles per hour).

女性步行的平均速度是每小时4.8公里(每小时3英里)。男性步行的平均速度是每小时5.6公里(每小时3.5英里)。

Energy from people works well for some things. But people energy cannot heat a home. People energy cannot run a factory. For those jobs, we need stronger energy.

人体产生的能量可以做很多事，但却不能用来给房间供暖，也不能使工厂运转。要做到这些，我们需要更强大的能量。



# Nuclear energy

## 核能

The tiny parts that make up all things are called **atoms**. Splitting atoms into pieces makes **energy**. It is called **nuclear energy**.

Nuclear energy is powerful. It is made in a nuclear power station. It costs a lot to set up a nuclear power station. Electricity is made in a nuclear **power station**. Electricity is a type of energy. Electricity is used to power homes. It also powers offices and schools.

构成物质的微小部分叫做**原子**。原子炸裂时产生的**能量**，叫做**核能**。

核能威力无穷。人们在核电站制造核能。建一座核电站耗资巨大。**核电站**能够发电，电是一种能量。电可以给家庭、办公室和学校提供动力。

Nuclear energy 核能	yes 是	no 否
Renewable 可再生的		✓
Clean 清洁的	✓*	
Safe 安全的		✓
Low cost 低成本	✓*	

\*Notes: Nuclear energy makes waste that can pollute. It also costs a lot to set up a nuclear power station. Once it is set up, the energy costs very little.

注：核能产生的废物可造成污染。核电站的建设耗资巨大。不过一旦建起，制造能量的成本将会很低。

This is a nuclear power station.  
Electricity is made here.

这是一座核电站，在这里可以发电。





Nuclear energy is clean energy. It does not **pollute** (dirty) the air. However, making nuclear energy is dangerous.

Nuclear energy can be unsafe. In 1986 a nuclear power station blew up. Many people died. Others became ill after the accident. People worry there could be another accident at a nuclear power station. People are looking for safer sources of energy.

核能是一种清洁的能量。它不会污染空气。然而制造核能非常危险。

核能是不安全的。1986年，一座核电站爆炸。事故中有许多人死亡，而幸存者在事故之后也得了病。人们担心核电站会再次发生事故，所以正在寻找更安全的能源。



# Soaking up rays

## 吸收太阳光

The Sun makes **energy**. It is called **solar energy**. It is clean and **renewable**. It never runs out. Solar energy is good in places where the Sun shines brightly. It is harder to get in places where trees and mountains block the Sun.

**Solar panels** are flat pieces of glass and other materials. They draw heat from the Sun. Solar cars use these panels to provide energy. Homes use solar panels for heat and hot water. The bigger the solar panels, the more energy they produce.

太阳产生的**能量**，叫做**太阳能**。它既清洁又可**再生**，不会用尽。阳光普照的地方太阳能非常充沛。山林密布的地方遮挡住了太阳，太阳能难以到达。

**太阳能电池板**是指由玻璃或其他材料制成的一块块平板。它们吸收太阳的热量。太阳能汽车利用这些平板来提供能量。家庭使用太阳能电池板取暖和烧水。太阳能电池板越大，产生的能量越多。

▼ These solar cars are racing in Japan. Some of the cars reach 150 kilometres per hour (93.8 miles per hour).

这些太阳能汽车正在日本进行赛车比赛。有的车的速度可达每小时150公里(每小时93.8英里)。



solar panel  
太阳能电池板

Solar energy 太阳能	yes 是	no 否
Renewable 可再生的	✓	
Clean 清洁的	✓*	
Safe 安全的	✓	
Low cost 低成本的	✓*	

\*Note: Solar panels cost a lot. But once they are set up, the energy is free.

注：虽然太阳能电池板的成本很高，但是一旦搭建起来，获得的能量却是免费的。

▲ The roof of this building has solar panels. The panels use energy from the Sun to heat water.

这幢楼的屋顶有太阳能电池板。这些板，利用太阳能给屋子供热。

## Marvellous Moon 神奇的月亮

In the future, we may build solar panels on the Moon. They could send solar energy to Earth.

将来，我们可以在月亮上搭建太阳能电池板，把太阳的能量传到地球。



# Blowing in the wind

## 随风转动

Wind is a **renewable energy source**. It never runs out. People built windmills hundreds of years ago. They used wind to pump water. Today, large windmills are called **wind turbines**. They turn wind energy into electricity. Electricity is a type of energy. Wind is the fastest-growing energy source in the world.

风是一种**可再生的能源**，取之不尽。几百年前人们建造风车，利用风来抽吸水流。如今，有一种大型风车叫做**风力涡轮机**，它们可以把风能转变成电能。电是一种能量。风是世界上生成速度最快的能源。

Wind farms may have hundreds of wind turbines. ►

风电场可以拥有数百架风力涡轮机。

### Windy tale 风行千里

In 2004 Dirk Gion travelled 2976 kilometres (1850 miles) on a skateboard. A giant sail used wind energy to push him along.

2004年，德尔克·吉翁借助一个滑板旅行了2976公里(1850英里)。一个利用风能的大帆推动他前进。