

Electricity



Radio

Source: Rolf Broberg ([Rolf B](#))

Computer



Source: [M5gi](#)

Uses of electricity

TV



Source: <http://flickr.com/people/solgrundy/>

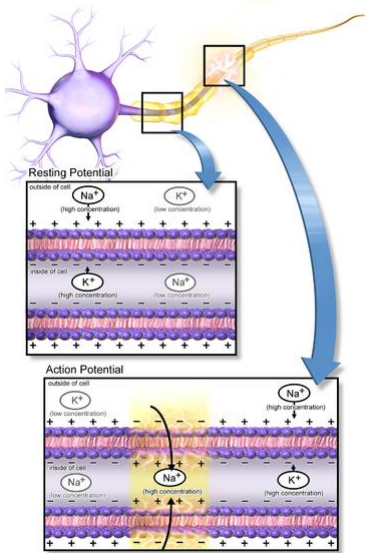
Electricity



Electricity is a natural phenomenon

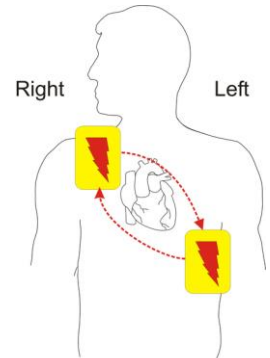
Source: U.S. Air Force photo by Edward Aspera Jr.

Electricity



It is part of our body.

And can save our life!



Source: Blausen.com staff. "Blausen gallery 2014". Wikiversity Journal of Medicine. DOI:10.15347/wjm/2014.010. ISSN 20018762.

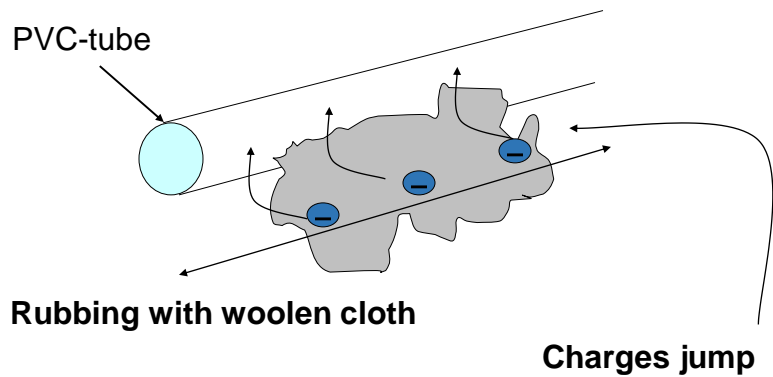
Source: Owain Davies

Electrostatics



~~Creation of charges~~ Transfer

What happens?



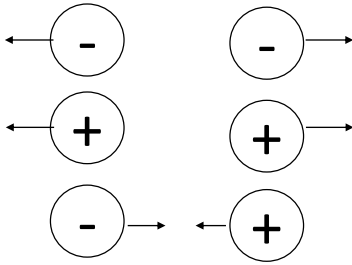
Electrostatics



Charges

Rubbing two ebonite rods : **repel one another.**

Rubbing one glass rod and one ebonite rod: **attract one another.**

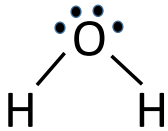


There have to be two different kind of charges.

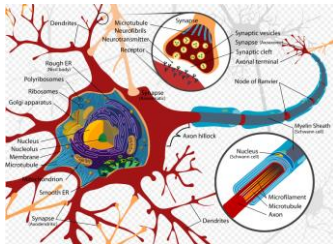
-Like charges **repel one another**

-Unlike charges **attract one another**

Charges in chemistry and biology



Chemical bonds are based on electric forces



Transfer of electrical charge in nerve cell.

Source: Ysangkok

Unit of charge

Quantity:	<i>Charge</i>
Symbol:	<i>Q</i>
Unit:	<i>Coulomb</i>
Symbol:	<i>C</i>

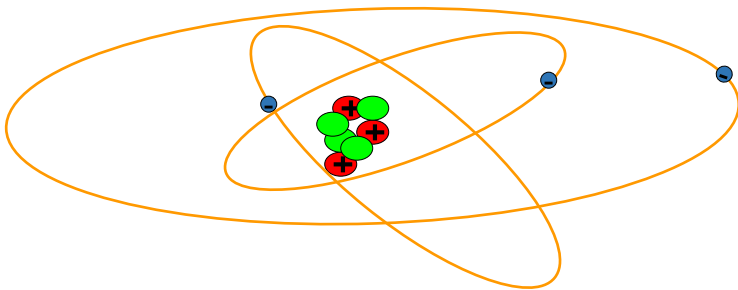
1 C is a **very large charge**.

$$1 \text{ mC} = 10^{-3} \text{ C}$$

$$1 \text{ } \mu\text{C} = 10^{-6} \text{ C}$$

$$1 \text{ nC} = 10^{-9} \text{ C}$$

Atomic structure



Charge of proton \oplus : **Elementary charge**

$$e = 1.60 \times 10^{-19} \text{ C}$$

Charge electron \ominus : $-e = -1.60 \times 10^{-19} \text{ C}$

Not to be confused with symbol of electron! e^-

Number of electrons in 1 Coulomb?
$$N = \frac{1\text{C}}{1.60 \times 10^{-19} \text{ C}} \quad N = 6.25 \times 10^{18}$$

Triboelectric series

