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OFF GRID MOBILE SOLAR POWER INSTALLATION IN 1 HOUR A STEP BY STEP GUIDE TO DESIGN AND INSTALL



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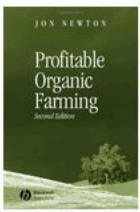
Recommended Course Materials & Supplementary Reference Resources

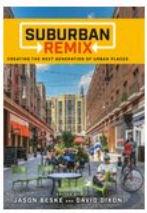
Please note: Below are recommended reference materials that accompany this subject. Scan the QR code next to any title to view syllabus details.



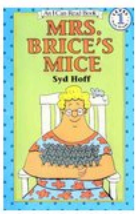
Step-by-Step Knifemaking You Can Do It (David Boye)



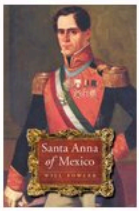
Profitable Organic Farming (Jon Newton)



Suburban Remix (Jason Beske, David Dixon)



Mrs. Brices Mice (Syd Hoff [Hoff, Syd])



Santa Anna of Mexico (Will Fowler)

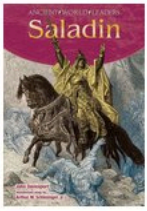


Spring into SummerFall into Winter (Dr. Seuss Tish Rabe [Seuss Rabe, Tish])

Steel connection analysis (Paolo Rugarli)



Slow down and Grow Something the Urban Growers Recipe for the Good Life (Robinson, Tess



Saladin (Ancient World Leaders) (John Davenport)


NEW RELEASE
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SOLAR PO
INSTALLA
IN 1 HOU
A Step-by-Step Guide to D
12 Volts Solar Pow

OFF GRID MOBILE SOLAR POWER INSTALLATION IN 1 HOUR

A Step by step Guide to Design and install 12 Volts Solar Power System on Vans, RVS, Boats and Mobile Homes

Larry Barone

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olar Electric Cooking and food preparation
olar Water Heating
hould I install a Battery Isolator?

Introduction to Electricity

his modest explanation is for those who are confused or have littl nowledge of electricity. As someone who has little or n nderstanding of electricity, this section will help to give you a dea of what electricity is and how it works.

f you are an expert, you will have to forgive certain simplifications his is because the aim is to allow everyone to find their wa round their electrical installation.

lectricity is a form of energy. It is often described as henomenon linked with the mobility or immobility of charge articles. Natural phenomena, such as lightning, were alread bserved from way back. But for a very long time, electricit errified men who saw it as a manifestation of divine anger o upernatural powers.

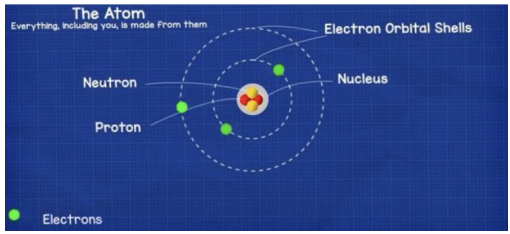
t was not until the late 16th century that it began to be studied b cientists to understand its mechanisms and establish laws. Thei uccessive work made it possible to artificially create electricity b ransforming various sources of energy.

oday, this electricity is produced by power plants that transpor nd distribute it to consumers. Like the fire of the time o rehistoric men, electricity has changed the lives of humanity. I as become essential to everything that makes up our daily life.

What makes up electricity

lectricity just like every matter is made up of atoms. Each atom i ade up of:

- A central nucleus which is an assembly of protons an neutrons. Protons carry positive charges and neutrons do no carry charges and are therefore neutral (hence their name);
- A set of electrons which rotate very quickly around th nucleus. Electrons carry negative charges.



ormally, an atom includes as many electrons as protons, so a any positive charges as negative charges. These charges ofte alance, making the atom electrically neutral. However, an electro ay be added to those of an atom (by friction with another ato or example). This can cause the balance to break and the ato ecomes negative. In the same way, an electron can be remove rom an atom, causing it to become positive. Electricity results fro he movement of these electrons.

The Forms of electricity

lectricity naturally occurs in various forms. These forms include:

- The nerve impulses of certain living organisms which emi electric discharges (as for the eel);
- The static electricity created by rubbing or bringing differen materials into contact, for example between hair and woo when removing a sweater;
- Lightning which is formed from an electric discharg between the Earth and a cloud. Sometimes, it occurs onl between two clouds.

t can also be created artificially in power plants by transformation:

- Sources of fossil fuels like coal, petroleum or natural gas resulting from the decomposition in the rock of plants durin millions of years;
- Sources of fossil energy such as uranium, the atoms of whic can be broken down to release heat and energy;

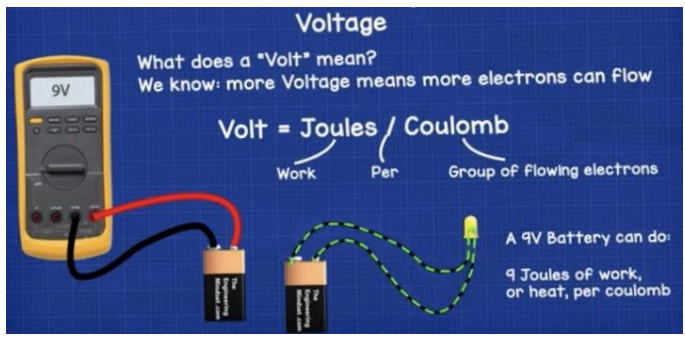
enewable energy sources such as water, wind, sun, heat from th arth, or biomass that nature constantly renews.

Measuring electricity

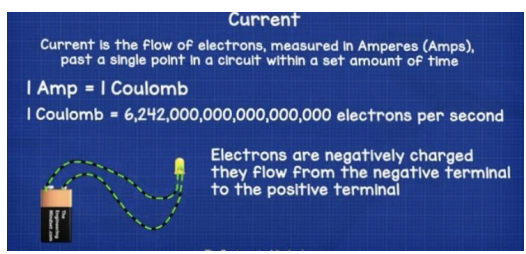
n terms of measurements, four well-known parameters make i ossible to evaluate an electric current. These measurement nclude voltage, intensity, power, and energy. To understand thes

onductor to that of water in a pipe.

he electrical voltage is comparable to the pressure of the water i he pipe when the tap is closed. It is the accumulation of charges i he conductor, which results in the appearance of an electrica otential. Called voltage, this potential is expressed in volts (V).



he intensity of the electric current can be compared to the flow o ater passing through the pipe when the tap is open. This flow o lectrons in the conductor is expressed in amperes (A).



he power of the water jet corresponds to the result of th ombined pressure and flow. Likewise, electrical power is th roduct of "intensity" and "voltage". Its unit of measurement is th att (W). It is more commonly expressed in kilowatt (kW).

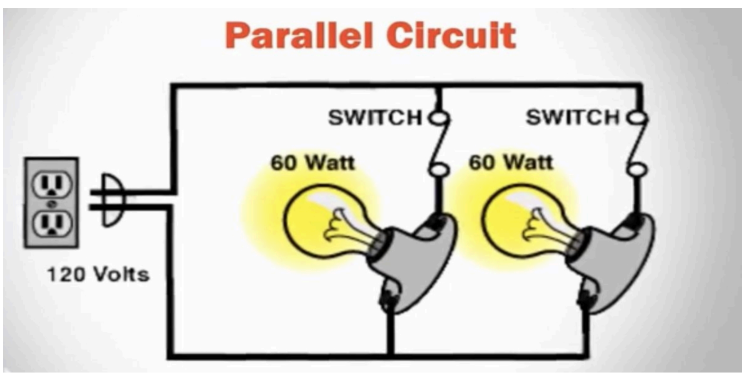
inally, energy evaluates the consumption of electricity, which is t ay the power used during a given period. It is measured i ilowatt-hours, that (kWh).

Electric Circuits: Serial vs Parallel

he electrical circuit can be designed in parallel or series dependin n the specificity of the electrical installations connected to it. Bu n practice, it is the parallel circuits which are used to carry ou omestic cabling. An assembly with multiple advantages, thi

The difference between the parallel or serial circuit

lectrical circuits intended to supply various installations wit lectricity can be designed in two ways, either in parallel or i eries. The parallel circuit is a mounting method that supplie urrents to its parallel components at the same voltage, but th urrent is not the same. In other words, it is an electrica istribution technique whose branches share pairs or triple commo odes. This type of circuit is most commonly used in domesti lectrical networks.



s for the series circuit, it is a principle of mounting cables tha llows the different elements of the electrical installation to have a ndividual load. On this type of circuit, each device or point of us s continuously supplied with a load that is exclusive to it. With ingle sequence and a single series, the current flows in on irection until all the elements of the circuit are supplied. Th ifference between the parallel or series circuit, therefore, lies i he mounting and operating technique.