



# **TRINITY COLLEGE FOR WOMEN NAMAKKAL**

## **Department of Physics**

**INTRODUCTORY PHYSICS**

**23UPHF01 – ODD Semester**

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# What is energy?

➤ Energy is defined as the “ability to do work, which is the ability to exert a force causing displacement of an object.” Despite this confusing definition, its meaning is very simple: energy is just the force that causes things to move.

➤ Energy is divided into two types:

➤ potential

➤ kinetic

## What are the different types of energy?

- Types of energy can be categorised into two broad categories – kinetic energy (the energy of moving objects) and potential energy (energy that is stored).
- These are the two basic forms of energy. The different types of energy include thermal energy, radiant energy, chemical energy, nuclear energy, electrical energy, motion energy, sound energy, elastic energy and gravitational energy.

## Thermal (Heat) Energy

Thermal energy is created from the vibration of atoms and molecules within substances. The faster they move, the more energy they possess and the hotter they become. Thermal energy is also called *heat* energy.



# Chemical Energy

Chemical energy is stored in the bonds of atoms and molecules – it is the energy that holds these particles together. Stored chemical energy is found in food, biomass, petroleum, and natural gas.



Scandium 21 Sc 44.956	Titanium 22 Ti 47.867	Vanadium 23 V 50.942	Chromium 24 Cr 51.996	Manganese 25 Mn 54.938	Iron 26 Fe 55.845	Cobalt 27 Co 58.933	Nickel 28 Ni 58.693	Copper 29 Cu 63.546	Zinc 30 Zn 65.38	Gallium 31 Ga 69.723	Germanium 32 Ge 72.64	Arsenic 33 As 74.922	Selenium 34 Se 78.96	Bromine 35 Br 79.904	Krypton 36 Kr 83.80
	Zirconium 40 Zr 91.224	Niobium 41 Nb 92.906	Molybdenum 42 Mo 95.94	Technetium 43 Tc 98	Ruthenium 44 Ru 101.07	Rhodium 45 Rh 102.91	Palladium 46 Pd 106.42	Silver 47 Ag 107.87	Cadmium 48 Cd 112.41	Indium 49 In 114.82	Tin 50 Sn 118.71	Antimony 51 Sb 121.76	Tellurium 52 Te 127.6	Iodine 53 I 126.91	Xenon 54 Xe 131.29
		Hafnium 72 Hf 178.49	Tungsten 74 W 183.85	Rhenium 75 Re 186.21	Osmium 76 Os 190.23	Iridium 77 Ir 192.22	Platinum 78 Pt 195.08	Gold 79 Au 196.97	Mercury 80 Hg 200.59						

# Nuclear Energy

Nuclear energy is stored in the nucleus of atoms. This energy is released when the nuclei are combined (fusion) or split apart (fission). Nuclear power plants split the nuclei of uranium atoms to produce electricity.





# Electrical Energy

Electrical energy is the movement of electrons (the tiny particles that makeup atoms, along with protons and neutrons). Electrons that move through a wire are called electricity. Lightning is another example of electrical energy.



# Radiant Energy

Also known as light energy or electromagnetic energy, radiant energy is a type of kinetic energy that travels in waves. Examples include the energy from the sun, x-rays, and radio waves.





## Light Energy

Light energy is a form of electromagnetic radiation. Light consists of photons, which are produced when an object's atoms heat up. Light travels in waves and is the only form of energy visible to the human eye.



# Sound Energy

in sound than in other forms of energy. Sound energy is the movement of energy through substances. It moves in waves and is produced when a force makes an object or substance vibrate. There is usually much less energy



# Elastic Energy

Elastic energy is a form of potential energy that is stored in an elastic object - such as a coiled spring or a stretched elastic band. Elastic objects store elastic energy when a force causes them to be stretched or squashed.



# Gravitational Energy

Gravitational energy is a form of potential energy. It is an energy associated with gravity or gravitational force – in other words, the energy held by an object when it is in a high position compared to a lower position.



# THANK YOU

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