University of Al-Mustaqbal
College of Science
Department of Medical Physics

Thermodynamics and Heat

Second stage

Thermodynamic Process

Lecture Two

Name of lecturer

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Thermodynamic processes:

It is the process of moving a system from one state of equilibrium to another state of equilibrium over a period of time as well Means the change in the thermodynamic properties of the system.
So it is said that the system is undergoing a process
Thermodynamic when any of the properties of the system variables change
The system state also changes. Example: If the pressure exerted on a confined invading entity increased, then it would
This is accompanied by a change in other properties such as volume, density, and temperature ... and when it stabilizes ,These properties bring the system to a new equilibrium state. It can be during the thermodynamic process Install one or more system properties and let the rest of the properties change to take new values,
For example, there are processes during which the size of the system remains constant and others are under constant and under pressure
Constant temperature and so on , these process summarized in the following:

1-Adiabatic Process: It is the process that occurs without any heat entering or leaving the system or $q = 0$. i.e. remaining during which the amount of heat in the entity is constant. The process is known as adiabatic when it occurs to a system.

Encased with a good insulation that prevents heat leakage from the system's roots and there are processes that take place ,So quickly that the system does not have enough time for heat to leak in and out. Examples of operations Adiabatic: sudden burst of a bicycle wheel, a piston stroke inside a cylinder The internal combustion,compression, and rarefaction associated with the passage of sound waves through the air.

2-Isothermal Process: It is the process that occurs to an entity without changing its temperature. Here should be a cover ,The system is a good conductor of heat, allowing heat to

escape or enter when it gets in an increase or decrease in the system temperature during the process. i.e $\Delta E = 0$.

3-Isobaric Process: is the process that occurs when a constant is compressed.

4-Isochoric Process: is the process that occurs at a fixed volume.

5-Cyclic Process: It is the process by which the system goes through a number of processes and then returns to its initial state .This system is said to have gone through a complete Cycle. And in periodic processes it absorbs .The system usually has heat in each cycle and performs work on the ocean, and in the case of cycles
Large The resulting workload was large and could be employed and utilized as well as machinery Steam, internal combustion machines .

6-Irreversible Process

It is a one-way process that cannot be reversed without leaving permanent changes ocean. An example is the heat that is transferred from a hot body to a cold body, and the wind that is it blows from the high pressure area to the low pressure area and the objects fall from top to bottom.