A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru

Academic Year 2018-2019

1.NAME OF THE EVENT: GUEST LECTURE

- Topic: **'THERMODYNAMICS'**
- Date Conducted: 14.09.2018

- Name and Designation of the Resource person
  :**Sri M.Hari Prasad,**Rtd. Lecturer in Chemistry, A.N.R College, Gudivada .
- **Report on the guest lecturer:**

Objectives

The first law of thermodynamics-statement, definition of internal energy and enthalpy.Heat capacities and their relationship.Joule-Thomson effect- coefficient.Calculation of w, for the expansion of perfect gas under isothermal and adiabatic conditions for reversible processes.State function.Temperature dependence of enthalpy of formation-Kirchhoff's equation.Second law of thermodynamics.

Notes on lecture

Thermodynamics deals with the concepts of heat and temperature and the inter-conversion of heat and other forms of energy. The four laws of thermodynamics govern the behaviour of these quantities and provide a quantitative description. William Thomson, in 1749, coined the term thermodynamics.

Thermodynamics in physics is a branch that deals with heat, work and temperature, and their relation to energy, radiation and physical properties of matter.

To be specific, it explains how thermal energy is converted to or from other forms of energy and how matter is affected by this process. Thermal energy is the energy that comes from heat. This heat is generated by the movement of tiny particles within an object, and the faster these particles move, the more heat is generated.

Different Branches of Thermodynamics

Thermodynamics is classified into the following four branches:

- **Classical Thermodynamics**
- **Statistical Thermodynamics**

- **Chemical Thermodynamics**
- **Equilibrium Thermodynamics**

Classical Thermodynamics

In classical thermodynamics, the behaviour of matter is analysed with a macroscopic approach. Units such as temperature and pressure are taken into consideration, which helps the individuals calculate other properties and predict the characteristics of the matter undergoing the process.

Statistical Thermodynamics

In statistical thermodynamics, every molecule is under the spotlight, i.e. the properties of every molecule and how they interact are taken into consideration to characterise the behaviour of a group of molecules.

Chemical Thermodynamics

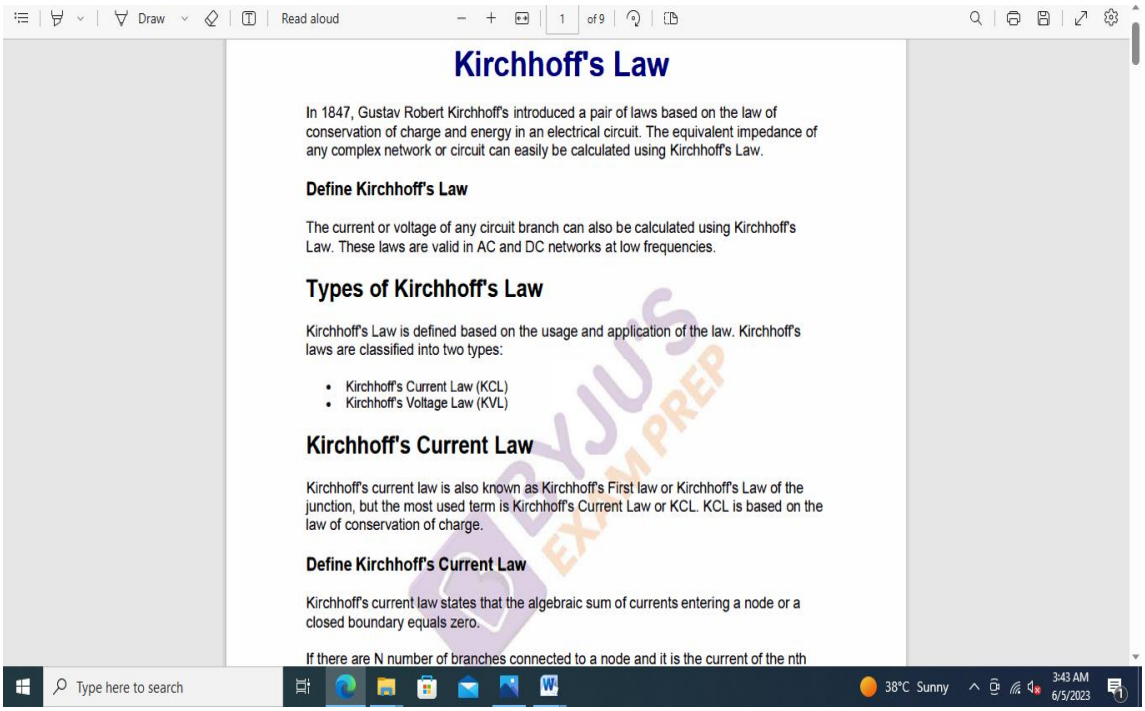
Chemical thermodynamics is the study of how work and heat relate to each other in chemical reactions and in changes of states.

Equilibrium Thermodynamics

Equilibrium thermodynamics is the study of transformations of energy and matter as they approach the state of equilibrium.

Basic Concepts of Thermodynamics – Thermodynamic Terms

Thermodynamics has its own unique vocabulary associated with it. A good understanding of the basic concepts forms a sound understanding of various topics discussed in thermodynamics preventing possible misunderstandings.



Kirchhoff's Law

In 1847, Gustav Robert Kirchhoff's introduced a pair of laws based on the law of conservation of charge and energy in an electrical circuit. The equivalent impedance of any complex network or circuit can easily be calculated using Kirchhoff's Law.

Define Kirchhoff's Law

The current or voltage of any circuit branch can also be calculated using Kirchhoff's Law. These laws are valid in AC and DC networks at low frequencies.

Types of Kirchhoff's Law

Kirchhoff's Law is defined based on the usage and application of the law. Kirchhoff's laws are classified into two types:

- Kirchhoff's Current Law (KCL)
- Kirchhoff's Voltage Law (KVL)

Kirchhoff's Current Law

Kirchhoff's current law is also known as Kirchhoff's First law or Kirchhoff's Law of the junction, but the most used term is Kirchhoff's Current Law or KCL. KCL is based on the law of conservation of charge.

Define Kirchhoff's Current Law

Kirchhoff's current law states that the algebraic sum of currents entering a node or a closed boundary equals zero.

If there are N number of branches connected to a node and it is the current of the nth

Outcome

Lecture was received by all third B.Sc Students Impressively. And they get knowledge on this chapter.

- PHOTOS

Presentation on Thermodynamics

Presentation on Thermodynamics

- News paper cuttings

ఈనాడు అమరావతి

శనివారం 15 సెప్టెంబరు 2018 20 పేజీలు

★ రోటరీ యువజన మాసోత్సవాల నేపథ్యంలో శుక్రవారం స్థానిక శ్రీ రామకృష్ణ రిక్రియేషన్ క్లబ్ ఆడిటోరియంలో విద్యార్థులకు వ్యాసరచన, చిత్రలేఖన పోటీలు జరిగాయి.

★ ఉయ్యూరులోని ఏజీఎస్‌జీఎస్ కళాశాలలో రసాయనశాస్త్ర విభాగం ఆధ్వర్యంలో శుక్రవారం ఉష్ణగతిక శాస్త్రంపై అతిథి ప్రసంగం జరిగింది. గుడివాడ ఎన్ఎన్ఆర్ కళాశాల

ఉయ్యూరు కబుర్లు

విశ్రాంతి అధ్యాపకుడు ఎం.హరిప్రసాద్ శాస్త్ర సంబంధిత అంశాలను విద్యార్థులకు అవగతం చేశారు.

★ నూతన సాంకేతిక విధానాలతో ఓటు హక్కు సాధన, పరిశీలన, మార్పులు, చేర్పులపై చైతన్యం తేవడానికి ఐవైఎం కృషి చేస్తోందని సంస్థ ప్రతినిధి తెలిపారు.

A. Pudiww

Signature of HOD