Chemistry Desk

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Friday, May 13, 2011

Limitation's of BOHR'S Model

Bohr's theory was unable to explain the following observations;

- (i). Bohr's Model could not explain the spectra of atoms containing more than one electron.
- (ii). It could not explain the **Zeeman effect**. In presence of magnetic field, each spectral line gets split up into fine lines, the phenomenon, is known as Zeeman effect.
- (iii). It could not explain the *Stark effect*. In presence of electric field, each spectral line gets split up into fine lines, the phenomenon, is known as *Stark effect*.
- (iv). The main objection to Bohr's model was raised by *Heisenberg's uncertainty principle*. According to Heisenberg's uncertainty principle, it is impossible to determine simultaneously the exact position and the momentum of a small moving particle like an electron. But, according to Bohr's model electron moves in well-defined orbits around the nucleus, and hence its position as well as momentum can be determined simultaneously, which is against the uncertainty principle. So, electron moves in well-defined orbits around the nucleus is impossible.

Posted by Santosh Agray at 11:49 PM

14 comments:

Labels: Atomic Structure

4 00111111011101

Anonymous August 16, 2016 at 6:04 PM

TRUE MAN !!!!!!!!! Everybody who has studied 9th grade chemistry knows it .!!!

Reply

Anonymous November 14, 2016 at 10:58 AM

Nicely explained.. very helpful.

Reply

Blog Archive

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Law of Constant Proportion / Definite Proportion /...

Law of Conservation of Mass

Concept of ORBITALS

Absolute or Kelvin Scale of Temperature

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Charle's Law

Significance / Importance of Boyle's Law

Graphical Representation of Boyles's Law

Boyle's Law

Measurement of Pressure Exerted by the Gas

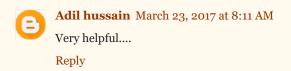
Calculation of Pressure by Mercury Column

Measurement of Atmospheric Pressure

Gaseous State-Measurable Properties

Introduction to State of Matter

Calculation of Enthalpy of Reaction



Adil hussain March 23, 2017 at 8:11 AM
Very helpful....
Reply

Carry Control Control

Unknown August 28, 2017 at 3:33 PM very helpful.nice method.

Reply

Anonymous September 5, 2017 at 12:39 PM So so very helpful Reply

Cood
Reply

Unknown February 22, 2018 at 10:07 PM
Good

Unknown April 10, 2018 at 9:06 PM

Easy have my exams tomorrow gonna rock it

Reply

Calculate Control of the Control of

Bond Energy and Bond Dissociation Energy

Application of Hess Law

Proof of Hess's Law

Hess's Law of Constant Heat Summation

Enthalpy Changes of Reactions and Phase Change

Standard Enthaply Change

Factors Affecting Enthalpy of Reaction

Heat of reaction (or) enthalpy of reaction

Relation Between CP and CV

Types of Molar Heat Capacities

Molar heat capacity

Specific heat capacity

Heat capacity

Zeroth law of thermodynamics

Relation Between ΔH AND ΔE

Change in Enthalpy

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First law of thermodynamics

Mathematical formulation of first law of thermodyn...

Measurement of ΔE

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Isothermal Reversible Expansion Work of an IDEAL Gas

Pressure-Volume Work

Summary of Sign Conventions

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Nature of Heat and Work

Reversible and Irreversible Process

State Function

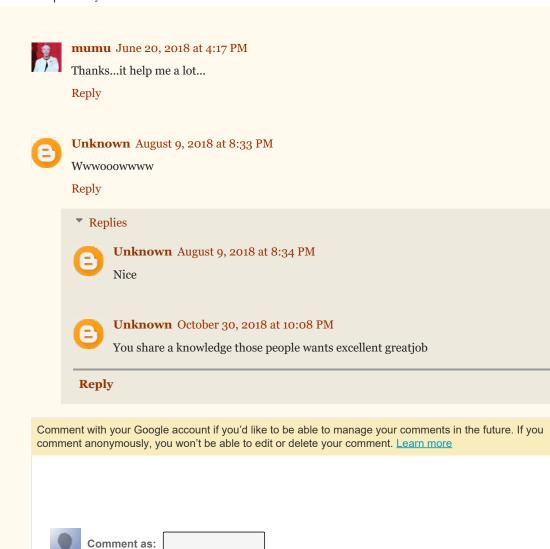
Thermodynamic Processes

Basic Concepts

Introduction to Thermodynamics

Coordinate Bond or Dative Bond

Resonating Structures of Few Molecules



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Resonance

Prediction of Shape of Molecules by VSEPR Theory

Valence Shell Electron Pair Repulsion (VSEPR) Theory

Types of Hybridisation

Hybridization

Distinction between Sigma and PI Bond

Types of Covalent Bond

Valence Bond Theory (Modern Approach of Covalent B...

Applications of Dipole Moment

Dipole Moment

Polar and Non Polar Covalent Bond

Characteristics of Covalent Compounds

Covalent Bond

BORN-HABER Cycle

Characteristics of IONIC Compounds

Factors Affecting IONIC Bond

Ionic Bond or Electrovalent Bond

Kossel-Lewis Approach

Stability of Half-Filled and Fully Filled Orbitals

AUFBAU's Principle

HUND's Multiplicity Rule

PAUL'S Exclusion Principle

Shapes of Orbitals

Difference Between Orbit and Orbital

Distribution of Electrons in Deferent Energy Levels

Quantum Numbers

Limitation's of BOHR'S Model

Hydrogen Spectrum

Calculation of Radius of Orbits

Energy of Electron in Each Orbit

BOHR'S Model of Atom

Atomic Spectrum of HYDROGEN

Spectrum

