

# 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

 Labels: [Atomic Structure](#)

### 14 comments:

**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. 💎💎

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**Adil hussain** March 23, 2017 at 8:11 AM

Very helpful....

Reply



**Adil hussain** March 23, 2017 at 8:11 AM

Very helpful....

Reply



**Unknown** August 18, 2017 at 4:15 PM

Good info!

Reply



**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



**Unknown** February 22, 2018 at 10:07 PM

Good

Reply



**Unknown** April 10, 2018 at 9:06 PM

Easy have my exams tomorrow gonna rock it

Reply



**Unknown** April 11, 2018 at 6:40 AM

Superb tips and point for us

Reply

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 Enthalpy 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  $\Delta H$  AND  $\Delta E$

Change in Enthalpy

Enthalpy

First law of thermodynamics

Mathematical formulation of first law of thermodyn...

Measurement of  $\Delta E$

Internal Energy

Isothermal Reversible Expansion Work of an IDEAL Gas

Pressure-Volume Work

Summary of Sign Conventions

Sign Convention of Work

Sign Convention of Heat

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



**mumu** June 20, 2018 at 4:17 PM

Thanks...it help me a lot...

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**Unknown** August 9, 2018 at 8:33 PM

Wwwwoowwww

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**Unknown** August 9, 2018 at 8:34 PM

Nice



**Unknown** October 30, 2018 at 10:08 PM

You share a knowledge those people wants excellent greatjob

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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

- Electromagnetic Spectrum
- Characteristics of the Waves
- Nature of Electromagnetic Radiations
- Discovery of NEUTRON
- Weakness of Rutherford's Model
- Rutherford's Model of ATOM
- Rutherford's Scattering Experiment
- Properties of ANODE Rays
- Discovery of PROTON
- Properties of Cathode Rays
- Discovery of Electron