



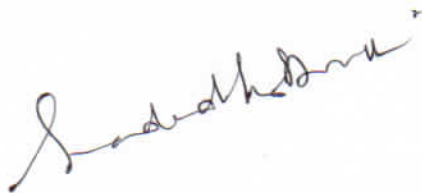
Department of Chemistry

Dated : 20.12.2016
Topic : Radial and Angular wave function
Resource person : Dr. Satyabrata Dash, Reader in Chemistry
U.N. College, Soro, Balasore

Synopsis:

An orbital is a mathematical function called a wave function that describes an electron in an atom. Radial wave function for a given atom depends only upon the distance r from the nucleus. Angular wave functions depend only upon the direction and in effect describe the shape of an orbital. The wave function is a complex value of probability amplitude. The most common symbols for wave functions are the Greek letter ψ . Wave function mathematically describes the wave characteristic of a particle. Each wave function has two parts, the radial part which changes with distance from the nucleus and angular part which changes correspond to different shape.

The Seminar is attended by 10 students covering +3 first year Chemistry honors student.



Signature of the
Organizing Secretary



Principal
Gopalpur College, Gopalpur, Balasore
GOPALPUR, BALASORE



Department of Chemistry

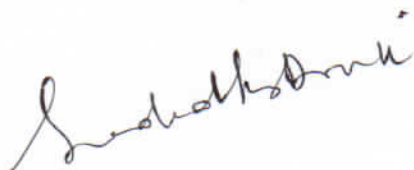
Date : 23.08.2017
Topic : Bragg's Equation
Resource person : Somanath Sahu , Reader in Chemistry
Khaira College , Khaira, Blasore, Odisha

Synopsis:

Bragg's law was introduced by Sir W.H Bragg and his son W.L. Bragg . this law states that when the X-Ray is incident onto a crystal surface, it's angle of incidence will reflect back with a same angle of scattering .Bragg's law provides the condition for a plane wave to be diffracted by a family of lattice plane $2d\sin\theta = n\lambda$, where d is the lattice spacing, θ is the angle between the wave vector of the incident plane wave, lambda is the wavelength and n is the integer. Moving particles including electron, proton and neutron have an associated wave length, called as de Broglie wavelength. A diffraction pattern is obtained by measuring the intensity of scattered waves as a function of scattering angle. Very strong intensities known as Bragg's peak are obtained in the diffraction pattern at the point when the scattering angles satisfy Bragg condition.



The Seminar is attended by 22 students covering +3 first year and second year Chemistry honors students.


Signature of the
Organizing Secretary


PRINCIPAL
GOPALPUR COLLEGE
Principal
GOPALPUR, BALASORE
Gopalpur College, Gopalpur, Balasore



Department of Chemistry

Date: 24.02.2018

Title : Molecular Shape of noble gas compounds
Resource person : Sumanta Kumar Dey, Lect. in Chemistry
A.B. College, Basudevpur, Bhadrak

Synopsis:

Noble gas compounds are chemical compounds that includes the elements from noble gas ,group-18 of the periodic table. In 1962,Neil Bartlett, who was first discovered the noble gas compound $\text{Xe}[\text{PtF}_6]$.The first binary noble gas compound were reported later ,Bartlett synthesized XeF_4 by subjecting a mixture of xenon and fluorine to high temperature. Xenon mainly form noble gas compounds like XeF_2 , XeF_4 , XeF_6 , XeOF_2 , XeO_3 etc. Xenon hexa fluoride has distorted



octahedral geometry. similarly XeF_2 , XeF_4 , XeOF_2 , XeO_3 have linear, square planar ,T-shape and pyramidal geometry respectively. In all these compounds, Xenon atom carries lone pair electron, so that geometry of these molecules becomes irregular. Some of ionic noble gas compound of Xenon are $[\text{XeF}_3]^+$, $[\text{XeF}_5]^+$, $[\text{XeF}_5]^-$, $[\text{XeF}_8]^{2-}$ etc.Krypton also makes compounds mixing with fluorine as KrF_2 , KrF_4 etc.noble gas forms a special complex called clathrates , such as quinol clathrates,hydrate clathrates.Clathrate compounds of Ar,Kr,Xe have been prepared by entrapping these gases in the cages of water,phenol,p-cresol,quinol etc.

The Seminar is attended by 20 students covering +3 first year and second year Chemistry honors students.

Signature of the
Organizing Secretary

PRINCIPAL
GOPALPUR COLLEGE
GOPALPUR, BALASORE

Gopalpur College, Gopalpur, Balasore



Department of Chemistry

Dated 10.07.2018

Title : Designing of Fusion reactor, the future solution of Energy Crisis

Resource person : Somanath Sahu , Reader in Chemistry
Khaira College , Khaira, Blasore, Odisha


Synopsis:

The nuclear fusion reaction generates the energy in the interior of sun. The vision of a power producing fusion reactor based on controlled thermonuclear reaction emerged more than a quarter of a century ago, and the remarkable progress has taken place in recent year. Unlike most of other energy sources, the fuel available to fusion reactors is almost limitless. Fusion reaction involving deuterium and tritium nuclei, the fuel heated to a temperature, in excess of 10 million degrees centigrade. At such temperature, the fuel



becomes fully ionized leaving behind a collection negatively charged particles referred as plasma. Nuclear fission proceeds through a chain reaction. The energy available from a fusion reactor is sustainable for the future.

The Seminar is attended by 22 students covering +3 first year and second year Chemistry honors students.


Signature of the
Organizing Secretary


PRINCIPAL
GOPALPUR COLLEGE
GOPALPUR, BALASORE
Gopalpur College, Gopalpur, Balasore



Department of Chemistry

Dated 07.12.2018

Title : Save Ozone Layer and Save our Mother Earth
Resource person : Dr. Satyabrata Dash, Reader in Chemistry
U.N. College, Soro, Balasore

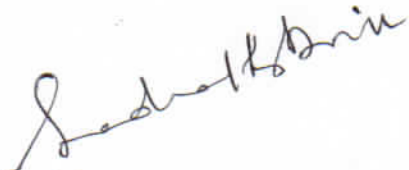
Synopsis:

Ozone layer is a region of earth stratosphere that absorbs most of the Ultra violet radiation. It contains a high concentration of ozone. Ozone is the triatomic oxygen atom. Ozone layer was discovered by French physicist Charles Fabry and Henry Buisson. The ozone layer absorbs 97-99% of the U.V. light, which otherwise would potentially damage exposed life forms near the surface. Ozone



layer was being depleted by chemicals like mainly chlorofluorocarbon. Ozone layer depletion causes the skin cancer in humans and other ecological problems. Ozone layer can be depleted by free radical catalyst including nitric oxide, nitrous oxide, atomic chlorides etc. Ozone depleting substance like chloro fluoro carbon has a significant positive contribution to the fight against climate change. Ozone depletion is greatest at the south pole. It occurs mainly in late winter and early spring and peak depletion occurs in early October. In 1987, to address the destruction of the ozone layer, the international community established the Montreal protocol on ozone depleting substances. It was the first international treaty to be signed by all countries in the world.

The Seminar is attended by 40 students covering +3 first year and second year and third year Chemistry honors students.


Signature of the
Organizing Secretary


PRINCIPAL
GOPALPUR COLLEGE
Gopalpur College, Gopalpur, Balasore



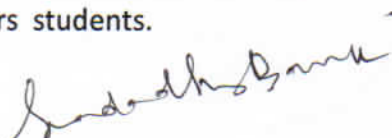
DEPARTMENT OF CHEMISTRY

Title : Twelve Principles of Green Chemistry
Resource person : Pratap Kumar Kar , Lect. in Chemistry
Jambeswar College, Garshang, Balasore
Date: 28.11.2019
Synopsis:

Green chemistry is the design of chemical products and processes that reduce or eliminates the use or generation of hazardous substances .Green chemistry applies across the life cycle of a chemical product,including it's design ,manufacture ,use and unlimited disposal. Important twelve principles of green chemistry-

- it is better to prevent waste than to treat waste after it is formed.
- synthetic methods should be designed to maximize all the materials used in the process into the final product.
- Synthetic methodologies should be desined that possess little or no toxicity to human health and the environment
- Chemical product should be designed to preserve efficacy of function.
- The use of auxiliary substances should be made unnecessary wherever possible.
- Energy requirement should be recognized for their economic impact and should be minimized.
- A raw material of feed stock should be renewable rather than depleting.
- Unnecessary derivatisation should be avoided wherever possible.
- Catalytic reagents are superior to stoichiometric reagents.
- Chemical products should be designed so that at the end of their function , they do not break down in to innocuous degradation product.
- Analytical methodologies need to be further developed to allow for real time.
- Substances used in a chemical process should be chosen so as to minimized the potential for chemical accidents.

The Seminar is attended by 22 students covering +3 first year and second year Chemistry honors students.


Signature of the
Organizing Secretary


PRINCIPAL
GOPALPUR COLLEGE
GOPALPUR, BALASORE

Gopalpur College, Gopalpur, Balasore



DEPARTMENT OF CHEMISTRY

Title : Nomenclature of Complex organic Compounds
Resource person : Dr. Surendra Nath Mohanty, Retd. Principal,
B.J.B., Junior College, Bhubaneswar
Dated 12.02.2020

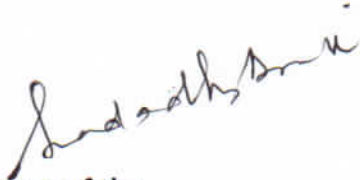
Synopsis:


The writing of name of an organic compound scientifically called as nomenclature of organic compound. It is done by two system such as common system and IUPAC system. In common system, there is no specific rules and regulations. But in IUPAC system, there are certain rules. In this system, there is a sequence i.e. prefix-word root-primary suffix- secondary suffix. Prefixes are used for the substituent.

Word root is number of carbon atoms present in the longest principal carbon chain like meth, eth, prop etc. for carbon atoms 1,2,3 respectively. Primary suffixes represent the type linkage between carbon atoms in the longest carbon chain. Primary suffixes are ane, ene, yne for carbon single bonds, double bonds, triple bonds respectively. Secondary suffixes represent the major functional groups like aldehydes, carboxylic acids, ketones, alcohols etc. Locants are used to represent the position of substituent's, primary suffixes or functional groups.

The Seminar is attended by 40 students covering +3 first year and second year and third year Chemistry honors students.




Signature of the
Organizing Secretary


PRINCIPAL
GOPALPUR COLLEGE
BALASORE
Gopalpur College, Gopalpur, Balasore