

JAN - 2018
Vol. 6
Issue: 1



CHEMFLASH

THE CHEMISTRY NEWS LETTER
EASWARI ENGINEERING COLLEGE

CHIEF EDITOR

Dr. C. Ravichandran

EDITOR

Mrs. R. Anitha Devi

Members

Mrs. V. Vanitha

Mrs. AR. Anusa

Dr. K. Saravanan

Dr. C.S. Jone selvamalar

Dr. S. Dhandayuthapani

Dr. N.S. Karthikeyan

CONTENTS:

Message from HOD'S desk

Quotes

Articles

“Vision without action is
daydream, And Action
without vision is
nightmare”



MESSAGE FROM THE HOD'S
DESK

Dr. C. Ravichandran
Professor and Head

The department of chemistry has brought out its quarterly news letter **chemflash**. Its focus is on all the recent happenings in the field of chemistry. This news letter is sure to give a suitable platform to all the budding engineers to widen their perspective. I express my heartiest congratulations to all the staff and students who were behind the success of chemflash.

I seek their continued co-operation in all the future endeavours.

Dr. C. Ravichandran

Quotes

“All birds find shelter during rain,
But eagle avoids rain by flying ,
Above the rain...”

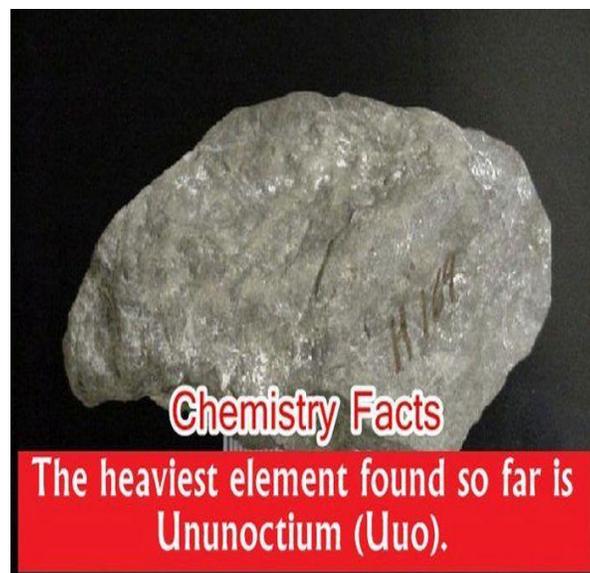
-DR.APJ. Abdul
Kalam

“Simple can be hard than complex,
You have to work hard to make it
Simple , but in the its worth it....
Because you can move mountains.”

-Steve Jobs

“Look up at the sky, not the feet,
Try to make sense of what you ,
See and wonder about what
Makes the universe..be curious.”

- Stephen
Hawking



Water Purifiers: An Introduction

By -Rahul Bharadwaj EIE-B 1st Year



Water purifiers are a convenient way of filtering any biological contaminants, unwanted chemicals, suspended solids or gases from contaminated water. This may be useful in many different experiments in a variety of chemistry, biology or physics disciplines.

RO Units

Generally, RO purifiers such as the ISG Fusion work using a variety of technologies to purify water. These include:

- Pre-treatment
- Reverse osmosis - The water is passed through a semi permeable membrane to help filter out any ions, molecules or any larger particles
- UV photo-oxidation
- Ion exchange - The water is then passed through an electrolyte complex to help further remove any ions that may still be in the water.

- Sub-micron filtration - And finally, this helps purify out lead, mercury, asbestos, cysts and several types of bacteria.

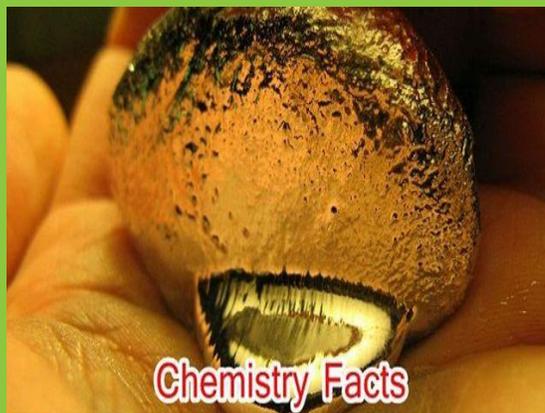
While many water purifiers tend to only do one of two of these things, our ISG Fusion RO Units do them all.

Deionisers

Water deionisers are a great choice if you are on a tight budget. Where RO Units incorporate several purification technologies, deionisers utilise only one: When water is pumped into it, the liquid is passed through a specially-designed resin cartridge which changes colour when ions are filtered out from the water.

Stills

The other option for water purification is water stills: These units use an internal heating element to help filter out any bacteria or biological matter from the water. They are also another great budget option for when working with tight budgets.



Gallium is a metal which melts on palm of the hand, melting point (29.76 °C).

New Elements Of The Periodic Table

By- Prashanth EIE-B 1st year

<p>113 286</p> <p>Nh</p> <p>Nihonium</p> <p>Atomic Weight: 286</p> <p>*5f¹⁴6d¹⁰7s²7p¹</p>	<p>115 289</p> <p>Mc</p> <p>Moscovium</p> <p>Atomic Weight: 289</p> <p>*5f¹⁴6d¹⁰7s²7p¹</p>
<p>117 294</p> <p>Ts</p> <p>Tennesine</p> <p>Atomic Weight: 294</p> <p>*5f¹⁴6d¹⁰7s²7p¹</p>	<p>118 294</p> <p>Og</p> <p>Oganesson</p> <p>Atomic Weight: 294</p> <p>*5f¹⁴6d¹⁰7s²7p¹</p>

If you haven't already done so, now's the time to update your copy of the periodic table. Four new, radioactive elements, discovered in recent years, have now been named and added to the seventh row.

The four elements were temporarily known by the Latin for their atomic numbers. However, now they have been given new, permanent names which pay tribute to those responsible for discovering them.

The International Union of Pure and Applied Chemistry (IUPAC) allows the discoverers of an element to submit proposed, permanent names. Each proposed name must, however, fall into one of five categories. The qualifying categories are mythological concepts or characters, minerals or substances, places or geographic regions, properties of the element or scientists.

With the symbol Nh, element 113 is now known as nihonium. Discovered by scientists from the RIKEN Nishina Center for Accelerator-based Science in Japan, 'Nihon' is one of two ways to say Japan in Japanese. Nihon literally means 'the Land of the Rising Sun' and the name is intended to make a

direct connection to the nation where the element was discovered. Nihonium is the first element to be discovered in an Asian country.

Element 115 has been given the name moscovium and the symbol Mc. In line with the tradition of honouring a place or geographical region, the element was discovered by scientists at the Joint Institute for Nuclear Research in Dubna, which is near to Moscow.

Similarly, the inspiration for element 117's name, tennesine, hails from the scientific contributions of the state of Tennessee to super heavy element research. Collectively, scientists from the Oak Ridge National Laboratory, Vanderbilt University and the University of Tennessee at Knoxville discovered the element, now known as tennesine and given the periodic symbol Ts.

For the element with atomic number 118, the collaborating teams of scientists at the Joint Institute for Nuclear Research in Dubna and the Lawrence Livermore National Laboratory in California proposed the name oganesson and the symbol Og. This name honours the work of the Russian physicist, Professor Yuri Oganessian, a pioneer in the discovery of superheavy elements. He is only the second person to have an element named after him during his lifetime.

Graphene: Super Element

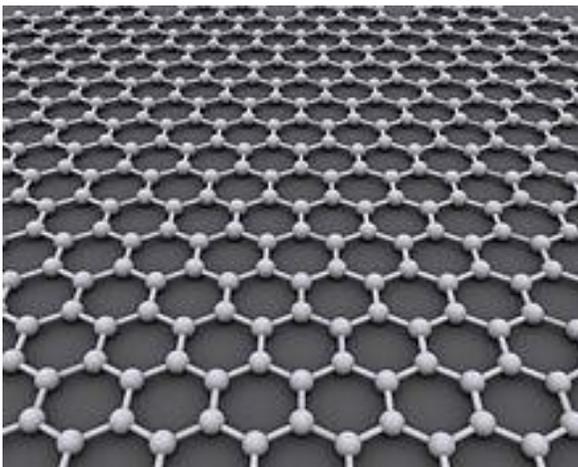
By S.Sharan EIE-B 1st Year

Graphene is an allotrope of carbon consisting of a single layer of carbon atoms arranged in an hexagonal lattice. It is the basic structural element of many other allotropes of carbon, such as graphite, charcoal, carbon nanotubes and fullerenes.

It can be considered as an indefinitely large aromatic molecule, the ultimate case of the family of flat polycyclic aromatic hydrocarbons.

Graphene has many unusual properties. It is the strongest material ever tested, efficiently conducts heat and electricity and is nearly transparent. Graphene shows a large and nonlinear diamagnetism,^[5] greater than that of graphite, and can be levitated by neodymium magnets.

Scientists theorized about graphene for years. It had been unintentionally produced in small quantities for centuries, through the use of pencils and other similar graphite applications. It was originally observed in electron microscopes in 1962, but it was studied only while supported on metal surfaces.^[6] The material was later rediscovered, isolated, and characterized in 2004 by Andre Geim and Konstantin Novoselov at the University of Manchester. Research was informed by existing theoretical descriptions of its composition, structure, and properties.^[9] This work resulted in the two winning the Nobel Prize in Physics in 2010 "for groundbreaking experiments regarding the two-dimensional material graphene



Structure:

Graphene is a crystalline allotrope of carbon with 2-dimensional properties. Its carbon atoms are densely packed in a regular atomic-scale chicken wire (hexagonal) pattern.

Each atom has four bonds: one σ bond with each of its three neighbors and one π -bond that is oriented out of plane. The atoms are about 1.42 Å apart.

Graphene's hexagonal lattice can be regarded as two interleaving triangular lattices. This perspective was successfully used to calculate the band structure for a single graphite layer using a tight-binding approximation.

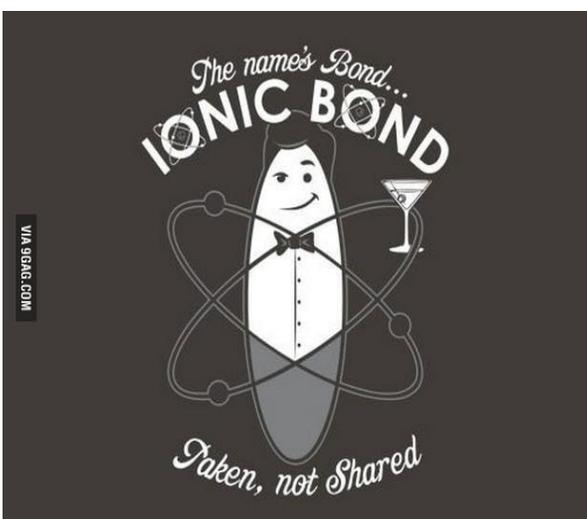
Application:

Graphene is a transparent and flexible conductor that holds promise for various material/device applications, including solar cells, light-emitting diodes (LED), touch panels and smart windows or phones. For example, Graphene-based touch panel modules produced by a China-based company have been sold in volume to cell phone, wearable device and home appliance manufacturers.



FUN WITH CHEMISTRY

*A neutron walks into a bar
ask how much for a drink ??
The bartender says for you no
charge!!!!*



The Judge convicted
the atom because he
made everything up!!

POEM

YOU WERE AN ACID
DESTROYING OTHERS
MAKING THEM NOTHING
AND HUNGRY FOR MORE

I WAS A BASE
AN INNOCENT MIND
EAGER FOR ADVENTURE
REACTIVE TO A SELECT FEW

WE WERE NEUTRALISED
WITH ME, YOU WERE TAMED AND
DOCILE WITH YOU, I WAS SOMEONE
OUR BEAKER WITH A BEAUTIFUL
SOLUTION



Prepared By:

Dr. Mrs. R. Anitha Devi

Approved By:

HOD/Chemistry

