ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

A NEW DESIGN OF MODERN PERIODIC TABLE SHOWING RIGHT POSITION OF HYGROGEN AND INCORPORATION OF F-BLOCKS ELEMENTS WITH IN A UNIQUE SHAPE.

Dr.Vasistha Bhardwaj[1] (Ph.D), Shubham Sharma (M.Sc ,BITS-Pilani).

1. Department of Chemistry, Jain Inter College, Muzaffarnagar (U.P.)

Manuscript Info

Manuscript History:

Received: 14 January 2016
Final Accepted: 17 February 2016
Published Online: March 2016

Key words:

Corresponding Author

Dr.Vasistha Bhardwaj.

Abstract

New Land in 1864 and Lothar Meyer in 1870 had tried to co-relate the Chemical properties of the Known elements at that time. While Mandeleev in 1870 had presented the first systematic Periodic Table based on the Classifications of the known elements in groups and periods.

Later, in 1914, Henry Moseley found a relationship between the x-rays wavelength of an element and its atomic number and he managed to re-sequence the periodic table by Nuclear Charge rather than atomic Weight, but later after the contribution of the different chemists prominently Rang(1893) Werner (1905), burry and Bohr the different researchers were able to establish a relationship between electronic configuration and physicochemical properties of the elements and during the period of 1913 to 1921, long form of the periodic table by Bohr had come into the existence which is still considered as the standard periodic table. Based on the Afbau, Hunds and Pauli Exclusion principles, the classification of the elements in Periods and Groups have finely been explained in the Modern or long form of the Periodic table but the two main objections have been raised over the long form of the periodic table by the different scientists from different countries. Firstly, Lanthanides and Actinides elements could not be incorporated in the single unique shape of the Periodic table and secondly the position of Hydrogen is not justified with the alkali metals as it has a good resemblance with the halogens also with respect to physical and chemical properties.

In order to remove the aforesaid objections , number of modifications have been proposed by the various researchers such as circular, pyramidal , spiral cubic but either these periodic tables elaborated with the complex shapes or they violated the present study trend of the periodic classification of elements suggested in Modern or long form of periodic table.

In this communication, an attempt has been made to present new shape of the periodic table with the suitable position of the Hydrogen along with the incorporation of f- block elements (Lanthanides and Actinides) at their right position in the single unique shape of the periodic table.

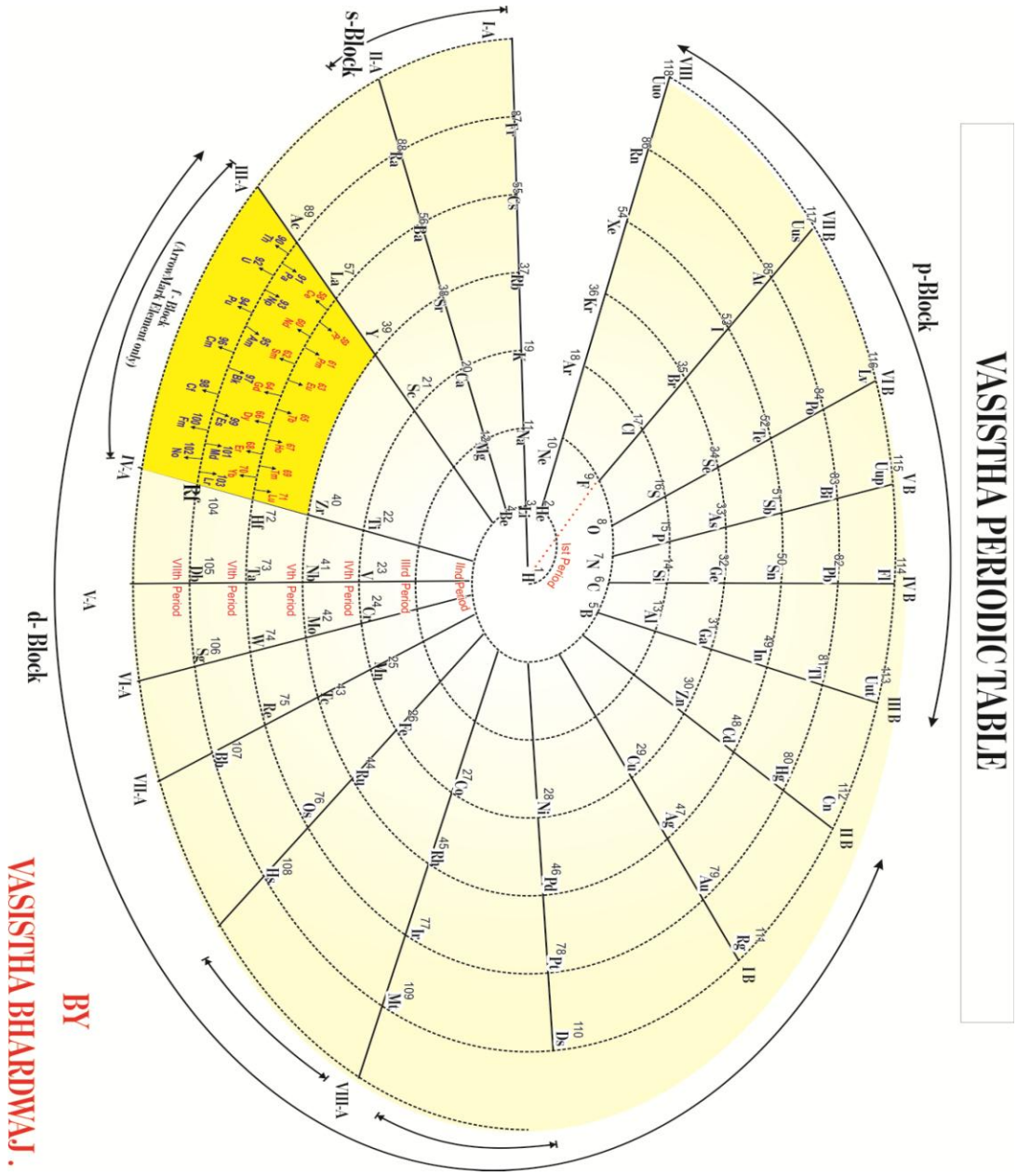
The special feature of the presented periodic table is that it is in the conformity of the existing study trend of Long form of periodic table with the same numbers of groups and periods bearing the same sequence of the elements. In the presented(Vasistha Periodic Table) periodic table the elements are adjusted according to their increasing atomic numbers showing all the 18 groups on the straight lines of an spiral elliptical geometry and all these lines are directed towards one of the foci of the ellipse while the periods have been adjusted along with the elliptical paths of spiral elliptical geometry.

A gap between the inert gases (group 18th) and Alkali Metals(Ist group) has been shown in the proposed form of periodic table to show the beginning of the every new period with alkali metal and ending at inert elements of group 18th.

Researchers have tried to remove the two main objections of the modern periodic Tables in the suggested form of Vasistha Periodic Table. Firstly in order to show the resemblance of hydrogen with halogens, the hydrogen is placed at the center which is lying directly before the chord of the Halogens while it has been shown as the member of IA group as per the modern periodic table. Secondly the suggested new design of periodic table also remove the second objection of proper placement of Lanthanides and Actinides as all the 14 Lanthanide and 14 Actinide have been incorporated at their proper places i.e. in period 6th and 7th.

It is important to mention here that in the present design of Modern periodic table, all the 118 elements (upto UUO)) have been adjusted on the seven spiral ellipses, but in future, if g and h sub-shells are also discovered, the new elements would be adjusted by increasing the elliptical chords and spiral elliptical paths in the suggested design.

The suggested design of Modern Periodic table is an attempt to co-relate all the physical and chemical properties and homologues relationship of the elements by maintaining the existing trend of modern or long form of periodic table in a single Unique Shape of a presented design.



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