New 3-D Periodic Model of Elements

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1 Introduction NEW 3-D PERIODIC MODEL OF ELEMENTS

MODERN PERIODIC TABLE (LONG FORM OF PERIODIC TABLE)
is a tabular display of the 118 known chemical elements organized by selected properties of their atomic structures. Elements are presented by increasing atomic number.
The layout of the periodic table demonstrates recurring ("periodic") chemical properties. Elements are listed in order of increasing atomic number . Rows are arranged so that elements with similar properties fall into the same columns (groups or families). According to quantum mechanical theories of electron configuration within atoms, each row (period) in the table corresponded to the filling of a quantum shell of electrons. There are progressively longer periods further down the table, grouping the elements into s-, p-, d- and f-blocks.

2 De-merits of modern periodic table-

1) Hydrogen has been placed at the top of alkali metal family because its electronic configuration (1s1). On similar basis, Helium (1s2) should have been included in group 2 of alkaline earth metals. But it is placed in group 18 of noble gases. 2) Lanthanoids and actinoids should have been accommodated in the main body of the periodic table. But these have been placed separately at the bottom of the periodic table.

3 Design Outline:

This new table is made in 3-D model which can easily be made in 2-D perspective also.Unlike modern periodic table, this table follows definite series starting from Hydrogen (Z=1) and follows the atomic number law.
As there were several groups and periods in modern periodic table, instead of using these, seven horizontal lines and six curve lines, 4 semicircles and 2 loops are made which lie behind the horizontal lines. And special 'X Curves'.
Any element can be located by referring to H and C , Cr and L, X co-ordinates.

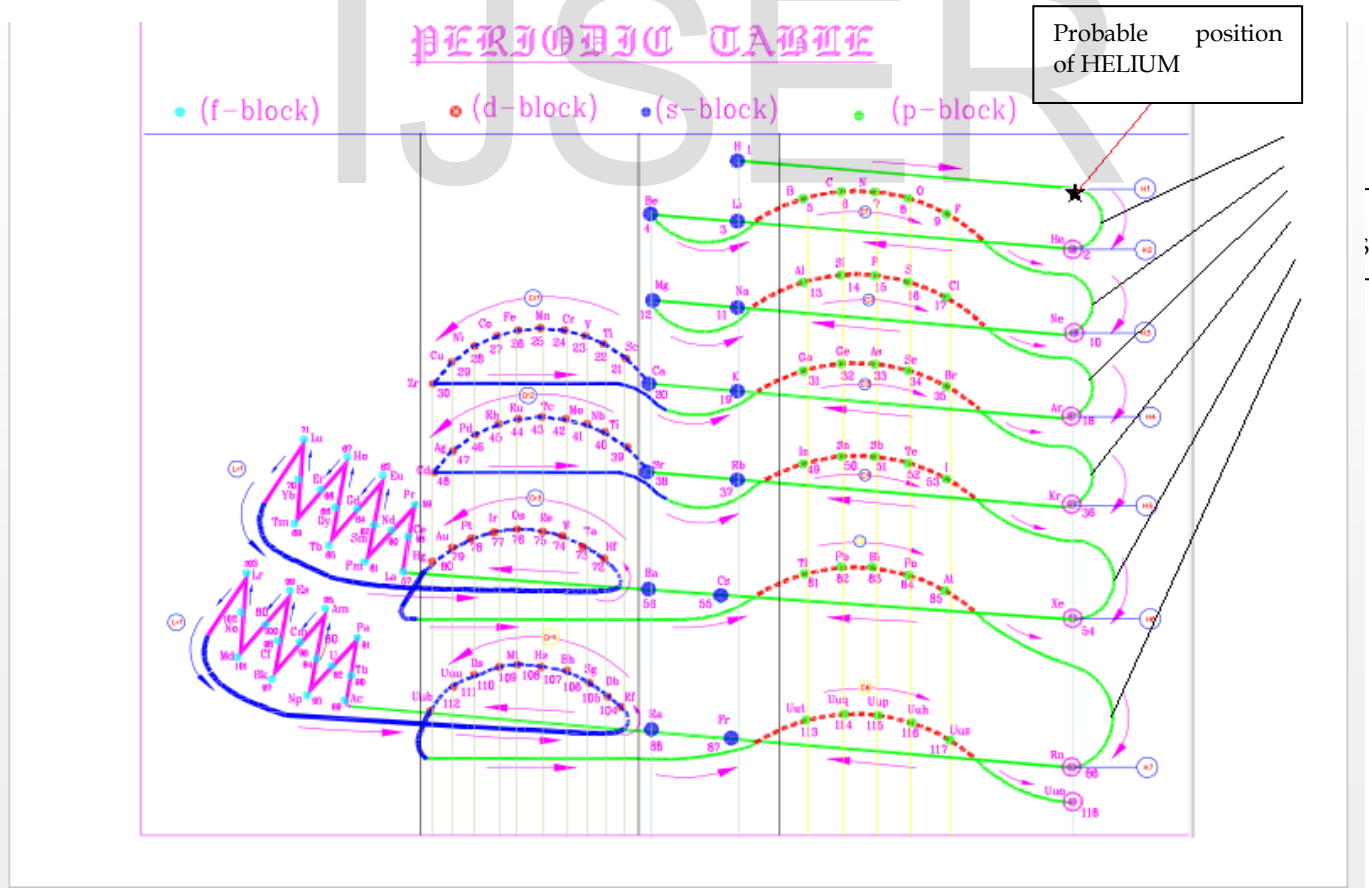
4 Innovative Component:

New design of periodic table.
Horizontal lines are named as H1, H2,H3,H4,H5,H6 and H7, Curved lines named as C1, C2…C6 and semicircles named as Cr1, Cr2, Cr3 and Cr4. Similarly loops are named L1 and L2. These all can be further extended if new elements discovered while this action could have affected the whole structure of the existing modern periodic table.
H1 is unique containing only Hydrogen for proper positioning based on the unique properties of "HYDROGEN"
H2-to H7 each contain 3 elements in them.
C1 to C6 contain 5 elements each.
Cr1 to Cr4 contain 10 elements each, but as there is no such confirmation on periodic properties of Lanthanum and actinium so they have been placed in Lanthanoids and actinoids series. This can be modified.
Each Loop contains 15 elements.
The s, p, d, f-blocks are arranged in four different parts of the table.
For convenience these blocks are arranged in horizontal rows, curved rows, semi circular rows and loops so that one can easily learn the elements of these blocks.
The "s" block is in Horizontal rows.
The "p" block is in Curved rows but after following the pattern, the noble gases are in Horizontal lines.
The "d" block is in semi-circular rows.
The "f" block is in L1 and L2 loops.
The "X" block or curves are the part of P block only. They are specially given name because they contain all the noble gases.
Example: Suppose it is required to find the element that is in Cr1 at 8th position, i.e.- Ni(Z=28). This can be easily located through this table.

5 TEST RESULTS:

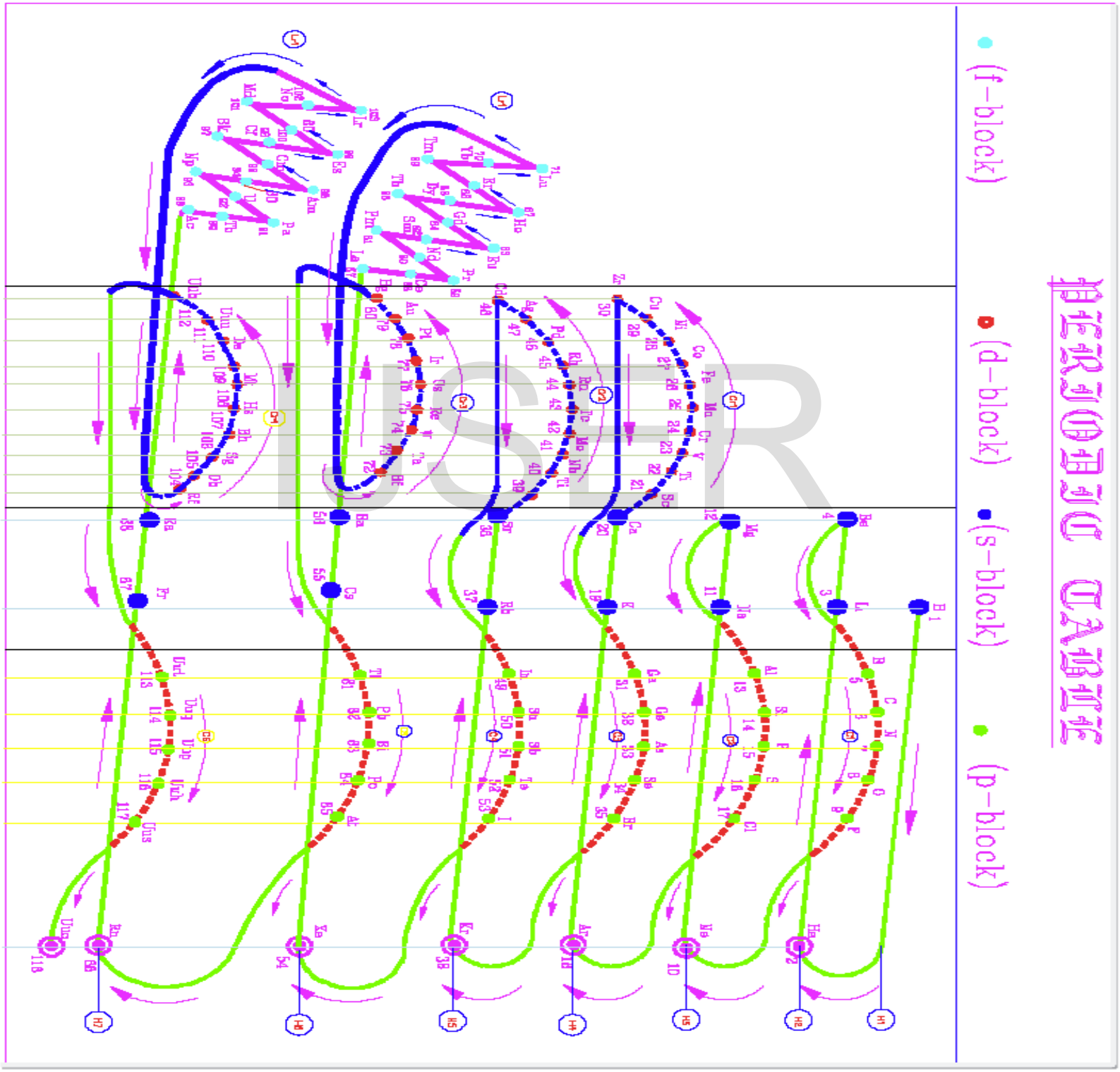
Overcoming the demerits of modern periodic table.
As Hydrogen is placed in the H1 row, He is placed next, thus elements with similar electronic configuration are placed together. There are no f and d blocks between them which affect their position.
Lanthanoids and actinoids are placed following the atomic number law and definite position which do not affect the positions of other elements.
's', 'p', 'd' and 'f' blocks are placed discretely, unlike in modern periodic table where 'f' block is inside the 'd' block and there was no distinction.
Moreover the positions of Helium and other noble gases are very versatile. They can be placed anywhere on their respective curves(X CURVES) which are present after every horizontal line. That rectifies and solves the issues related with the positioning of He. As different researchers and scholars have different opinions about positioning of He. The most postulated and suitable positions of He are-
1.With Hydrogen 2.With NOBLE GASES

So in this periodic table. As the groups have been divided on the bases of lines, curves, loops and semi circles along with the typical rectangular bock S,P,D,F. So suppose one wants to place Helium with Hydrogen but being a noble gas it should be placed with other noble gases. So he can place Helium at the starting of X curve that is the end of the horizontal line 'L1' end with Hydrogen in series but, helium would still be in the rectangular P block(or if considered it is in horizontal line H1 which is part of S block) so it depends on the researchers how they want to consider the position of Helium, i.e.in(horizontal line H1 which is part of S block) or the "X" curves which are part of P block. And also X-curves present after every horizontal line define the unique positions of noble gases which are part of P block. This is how the most contrary positions of hydrogen and helium are decided. This will be easier to understand with image of periodic table.



containing

6 FIGURES



7 END SECTIONS

7.1 Index Terms

Modern periodic table
Lanthanoids and Actinoids
Noble Gases
X curves

7.2 Acknowledgments

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