There are only 92 stable elements in nature

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Abstract

Using the stable number theory[3] we prove that there are only 92 stable elements in nature and obtain the correct valence electron configurations of the elements.In Mendeleev periodic table the elements (1-18, 29-36 and 46) have correct valence electron configurations and the elements (19-28, 37-45 and 47-92) have wrong valence electron configurations. The elements have no periods.

In studying the stability of the many-body problem we suggest two principles [1-9].

(1) The prime number principle. A prime number is irreducible in the integers, it seems therefore natural to associate it with the most stable subsystem. We prove that 1, 3, 5, 7, 11, 23, 47 are the most stable primes.

(2) The symmetric principle. The most stable configuration of two prime numbers is then stable symmetric system in nature. We prove that 2, 4, 6, 10, 14, 22, 46, 94 are the most stable even numbers. The stability can be defined as long life and existence in nature, and instability as short life or non-existence in nature.

In this paper by using the prime number principle and the symmetric principle we make the new electron configurations of the elements. Total quantum number n and orbital quantum number l determine the new electron configurations of the elements

Electron shells:

$n=1$	2	3	4	5	6...
K	L	M	N	O	P...

Electron subshells:

$2(2l+1)=2$	6	10	14	18	22...
s	p	d	f	g	h...

An atomic subshell that contains its full quota of electrons is said to be closed. A closed s subsell $(l=0)$ holds two electrons, a closed p subshed $(l=1)$ six electrons, a closed d subshell $(l=2)$ ten electrons, a closed f subshell $(l=3)$ fourteen electrons, these subshells are the most stable, a closed g subshell $(l=4)$ eighteen electrons is the most unstable. Using the symmetric principle it has been proved the $2(2l+1)=2,6,10$ and 14 are stable and $2(2l+1)=18$ is unstable. The $s, p.d$, and f subshells are stable and the g subshell is unstable.

Table 1 shows the new electron configurations of the elements. From 1 to 92 of the atomic numbers every subshell is stable. It has been proved that the last stable element that occurs naturally is uranium with an atomic number of 92 and there are only 92 stable elements in nature. Since $5g$ subshell is unstable, the elements 93-110 are unstable. Since $5g$ is unstable,

$6s, bp, 6d, 6f, 6g$ and $6h$ subshells are unstable. Therefore the elements 111-182 are unstable.

Many of the chemical and physical properties of the elements are related to the number of electrons in the outermost shell, the electrons that are valence electrons in these atoms. In table 1 there are correct valence electron configurations of the elements. In Mendeleev periodic table the elements (1-18, 29-36 and 46) have correct valence electron configurations and the elements (19-28, 37-45 and 47-92) have wrong valence electron configurations. The elements have no periods.

Conclusion. In table 1 s, p, d and f are stable subshells. Therefore the elements 1 to 92 are stable. In table 1 $5g$ is the unstable subshell. Therefore the elements 93 to 110 are unstable. Using the table 1 chemists study the chemical properties of the elements 1 to 92 and discover many of the new chemical compounds. Pythagoras believes that all things are numbers. But Jiang believes that all things are stable numbers [1-9].

这是人类第一次用数论证明并给出新元素电子结构和正确价电子结构, 这是化学基础. 化学家研究新元素电子结构将会发现很多新化合物。门捷列夫元素周期表是错的,元素 1-18, 用实验证明价电子是正确的, 估算元素 29-36 和 46 价电子是正确的, 但其它元素价电子是不正确的, 元素没有周期性。目前化学研究是猜想没有理论指导。本文是蒋春暄 1981 年提出”素数原理和对称原理” 两个原理一个应用。化学是计算问题. 只能用正确价电子才能找到新化合物。本文给化学和生物化学提供一个理论基础。首先理论计算而后在实验室可找到这种化合物和生物结构.

Table 1. New Electron Configuration of the Elements

Z	Sym	*K*	*L*		*M*			*N*				*O*				
		1*s*	2*s*	2*p*	3*s*	3*p*	3*d*	4s	4p	4d	4f	5s	5p	5d	5f	5g
1	H	1														
2	He	2														
3	Li	2	1													
4	Be	2	2													
5	B	2	2	1												
6	C	2	2	2												
7	N	2	2	3												
8	O	2	2	4												
9	F	2	2	5												
10	Ne	2	2	6												
11	Na	2	2	6	1											
12	Mg	2	2	6	2											
13	Al	2	2	6	2	1										
14	Si	2	2	6	2	2										
15	P	2	2	6	2	3										
16	S	2	2	6	2	4										
17	Cl	2	2	6	2	5										
18	Ar	2	2	6	2	6										
19	K	2	2	6	2	6	1									
20	Ca	2	2	6	2	6	2									
21	Sc	2	2	6	2	6	3									
22	Ti	2	2	6	2	6	4									
23	V	2	2	6	2	6	5									
24	Cr	2	2	6	2	6	6									
25	Mn	2	2	6	2	6	7									
26	Fe	2	2	6	2	6	8									
27	Co	2	2	6	2	6	9									
28	Ni	2	2	6	2	6	10									
29	Cu	2	2	6	2	6	10	1								
30	Zn	2	2	6	2	6	10	2								
31	Ga	2	2	6	2	6	10	2	1							
32	Ge	2	2	6	2	6	10	2	2							
33	As	2	2	6	2	6	10	2	3							
34	Se	2	2	6	2	6	10	2	4							
35	Br	2	2	6	2	6	10	2	5							
36	Kr	2	2	6	2	6	10	2	6							
37	Rb	2	2	6	2	6	10	2	6	1						
38	Sr	2	2	6	2	6	10	2	6	2						
39	Y	2	2	6	2	6	10	2	6	3						
40	Zr	2	2	6	2	6	10	2	6	4						
41	Nb	2	2	6	2	6	10	2	6	5						
42	Mo	2	2	6	2	6	10	2	6	6						
43	Tc	2	2	6	2	6	10	2	6	7						
44	Ru	2	2	6	2	6	10	2	6	8						
45	Rh	2	2	6	2	6	10	2	6	9						
46	Pd	2	2	6	2	6	10	2	6	10						

Table 1.（Continued）

Z	Sym	*K*	*L*		*M*			*N*				*O*				
		1*s*	2*s*	2*p*	3*s*	3*p*	3*d*	4s	4p	4d	4f	5s	5p	5d	5f	5g
47	Ag	2	2	6	2	6	10	2	6	10	1					
48	Cd	2	2	6	2	6	10	2	6	10	2					
49	In	2	2	6	2	6	10	2	6	10	3					
50	Sn	2	2	6	2	6	10	2	6	10	4					
51	Sb	2	2	6	2	6	10	2	6	10	5					
52	Te	2	2	6	2	6	10	2	6	10	6					
53	I	2	2	6	2	6	10	2	6	10	7					
54	Xe	2	2	6	2	6	10	2	6	10	8					
55	Cs	2	2	6	2	6	10	2	6	10	9					
56	Ba	2	2	6	2	6	10	2	6	10	10					
57	La	2	2	6	2	6	10	2	6	10	11					
58	Ce	2	2	6	2	6	10	2	6	10	12					
59	Pr	2	2	6	2	6	10	2	6	10	13					
60	Nd	2	2	6	2	6	10	2	6	10	14					
61	Pm	2	2	6	2	6	10	2	6	10	14	1				
62	Sm	2	2	6	2	6	10	2	6	10	14	2				
63	Eu	2	2	6	2	6	10	2	6	10	14	2	1			
64	Gd	2	2	6	2	6	10	2	6	10	14	2	2			
65	Tb	2	2	6	2	6	10	2	6	10	14	2	3			
66	Dy	2	2	6	2	6	10	2	6	10	14	2	4			
67	Ho	2	2	6	2	6	10	2	6	10	14	2	5			
68	Er	2	2	6	2	6	10	2	6	10	14	2	6			
69	Tm	2	2	6	2	6	10	2	6	10	14	2	6	1		
70	Yb	2	2	6	2	6	10	2	6	10	14	2	6	2		
71	Lu	2	2	6	2	6	10	2	6	10	14	2	6	3		
72	Hf	2	2	6	2	6	10	2	6	10	14	2	6	4		
73	Ta	2	2	6	2	6	10	2	6	10	14	2	6	5		
74	W	2	2	6	2	6	10	2	6	10	14	2	6	6		
75	Re	2	2	6	2	6	10	2	6	10	14	2	6	7		
76	Os	2	2	6	2	6	10	2	6	10	14	2	6	8		
77	Ir	2	2	6	2	6	10	2	6	10	14	2	6	9		
78	Pt	2	2	6	2	6	10	2	6	10	14	2	6	10		
79	Au	2	2	6	2	6	10	2	6	10	14	2	6	10	1	
80	Hg	2	2	6	2	6	10	2	6	10	14	2	6	10	2	
81	Tl	2	2	6	2	6	10	2	6	10	14	2	6	10	3	
82	Pb	2	2	6	2	6	10	2	6	10	14	2	6	10	4	
83	Bi	2	2	6	2	6	10	2	6	10	14	2	6	10	5	
84	Po	2	2	6	2	6	10	2	6	10	14	2	6	10	6	
85	At	2	2	6	2	6	10	2	6	10	14	2	6	10	7	
86	Rn	2	2	6	2	6	10	2	6	10	14	2	6	10	8	
87	Fr	2	2	6	2	6	10	2	6	10	14	2	6	10	9	
88	Ra	2	2	6	2	6	10	2	6	10	14	2	6	10	10	
89	Ac	2	2	6	2	6	10	2	6	10	14	2	6	10	11	
90	Th	2	2	6	2	6	10	2	6	10	14	2	6	10	12	
91	Pa	2	2	6	2	6	10	2	6	10	14	2	6	10	13	
92	U	2	2	6	2	6	10	2	6	10	14	2	6	10	14	

Table 1.(Continued)

Z	Sym	*K*	*L*		*M*			*N*				*O*				
		1*s*	2*s*	2*p*	3*s*	3*p*	3*d*	4s	4p	4d	4f	5s	5p	5d	5f	5g
93	Np	2	2	6	2	6	10	2	6	10	14	2	6	10	14	1
94	Pu	2	2	6	2	6	10	2	6	10	14	2	6	10	14	2
95	Am	2	2	6	2	6	10	2	6	10	14	2	6	10	14	3
96	Cm	2	2	6	2	6	10	2	6	10	14	2	6	10	14	4
97	Bk	2	2	6	2	6	10	2	6	10	14	2	6	10	14	5
98	Cf	2	2	6	2	6	10	2	6	10	14	2	6	10	14	6
99	Es	2	2	6	2	6	10	2	6	10	14	2	6	10	14	7
100	Fm	2	2	6	2	6	10	2	6	10	14	2	6	10	14	8
101	Md	2	2	6	2	6	10	2	6	10	14	2	6	10	14	9
102	No	2	2	6	2	6	10	2	6	10	14	2	6	10	14	10
103	Lr	2	2	6	2	6	10	2	6	10	14	2	6	10	14	11
104	Rf	2	2	6	2	6	10	2	6	10	14	2	6	10	14	12
105	Db	2	2	6	2	6	10	2	6	10	14	2	6	10	14	13
106	Sg	2	2	6	2	6	10	2	6	10	14	2	6	10	14	14
107	Bh	2	2	6	2	6	10	2	6	10	14	2	6	10	14	15
108	Hs	2	2	6	2	6	10	2	6	10	14	2	6	10	14	16
109	Mt	2	2	6	2	6	10	2	6	10	14	2	6	10	14	17
110	Ds	2	2	6	2	6	10	2	6	10	14	2	6	10	14	18

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