An Easy Way of Nuclear Conversion

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Although the results maybe contradict nuclear physics, the authors dare to publish the obtained data in our experiments. By the electric discharge in the water between carbon sticks or aluminium plate and carbon stick, the increase of calcium, magnesium or silicon content in each electrodes was recognized. It seems to be the conversion of carbon or aluminium into another elements with this treatment.

KEYWORDS

nuclear conversion, electric discharge, carbon stick, calcium, magnesium, silicon

Introduction

We have had a doubt about a rate of the elements composing the earth which has much light atoms than the heavier atoms. About that it maybe comes the conjecture that the light atoms will convert into the heavier atoms by the acquisition of various large energy. Accordingly, carbon was chosen as light, common and stable solid atom and electrical energy was tried to give to it. An electric discharge was selected as a means of energy supply, but for it burnes out in the air, the experiments were enforced in the water. Aluminium besides carbon as an electrode was used as well and the metallic elements existing in the original and discharged samples were examined by an inductively coupled plasma (ICP).

Expremental

Sample and Discharge Carbon stick (dia. 6 mm, length 300 mm), to make the electrode, was cut off about 30mm and coiled with a copper wire on their end. The electric discharge was enforced in the water by using welding transformer or DC rectifier. The voltage from 60 to 110 in the former and from 10 to 50 in the latter were used. Aluminium plate (thickness 1 mm, width about 20 mm)was used the electrode as well, the discharge was repeatedly enforced on it.

Analysis The carbon powder which were made of the discharged or nondischarged car-

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bon stick by filing and the splinter of carbon stick scattered by the discharge were exactly weighed (from several decades to hundreds milligrams) and 5 ml of aqua regia was added to them. After being left a night they were filtered and those volume were adjusted to 50 ml with water. The metals included in these samples were detected by ICP. As principal metals for a detection, calcium, magnesium and iron were chosen. The discharged aluminium plate was cut off about 15 mm square and above mentioned treatment was enforced to it.

pH, Electric conductivity and Gas chromatography pH and electric conductivity of used water were measured after being discharged for a minute at 25 V, the discharge and measurement were repeated for 10 times on the same water. The results were shown in Fig.1. For a detection of component in a gas generated during the discharge, oxygen was added little by little to it and the spark discharge for this mixture was repeated each time. After that the remained gas was passed into 20 % KOH solution contained guaiacol and it was inspected with gas chromatography.

Analysis by Radioactivation Each about one gram of discharged and nondischarged carbon powder were separately packed in a small bag made of polyethylene, and they were irradiated in a reactor (UTR-KINKI) for 12 hours at 1 W power.

Results and Discussion

The results showed in Table I were obtained from the discharge used the welding trans-

Table I

No	Volt	Weight (mg)	Found (ppm)			Converted Value into 500 mg (ppm)			Ratio for Sample		
			Ca	Mg	Fe	Ca	Mg	Fe	Ca	Mg	Fe
1	S	543.9	1.239	0.1103	4.385	1.139	0.1014	4.031	1.00	1.00	1.00
2	60	613.9	1.715	0.1300	4.610	1.397	0.1050	3.755	1.23	1.04	0.93
3	60	583.4	1.508	0.1470	5.260	1.292	0.1260	4.508	1.69	1.24	1.12
4	70	629.0	1.379	0.1300	4.770	1.096	0.1030	3.792	0.96	1.02	0.94
5	70	400.9	1.103	0.1590	3.000	1.378	0.1980	3.742	1.21	1.95	0.93
6	80	326.4	0.972	0.1270	2.940	1.489	0.1950	4.504	1.31	1.92	1.12
7	80	390.4	0.932	0.1030	3.530	1.194	0.1320	4.521	1.05	1.30	1.12
aqua regia			0.629	0.0390	0.205						
8	S	434.8	0.985	0.0650	3.047	1.133	0.0750	3.504	1.00	1.00	1.00
9	90	435.9	1.682	0.2870	3.440	1.929	0.3290	3.949	1.70	4.39	1.13
10	90	468.6	0.997	0.0740	3.774	1.064	0.0790	4.027	0.94	1.05	1.15
11	100	561.4	1.323	0.0900	3.436	1.178	0.0800	3.060	1.04	1.07	0.88
12	100	371.7	1.294	0.0820	2.520	1.741	0.1100	3.390	1.54	1.47	0.97
13	110	470.9	1.552	0.2550	3.390	1.648	0.2710	3.599	1.46	3.62	1.03
14	110	444.9	1.761	0.0850	3.112	1.979	0.0960	3.457	1.75	1.28	1.00
aqua regia			0.456	0.0490	0.282						
Averaged Value Original Sample						1.136	0.0882	3.768	1	1	1
Discharged Sample						1.449	0.1579	3.859	1.13	1.78	1.02

(S:original Sample)

former. In addition to that, analytical results of aqua regia were added to this Table.

As the anticipated results were not clearly recognized from these analytical results, the DC rectifier was used to the subsequent experiments. According to the power of the rectifier, the experiments were enforced under 50 A. The results were shown in Table II.

Table II

No	Volt	Pole	Weight (mg)	Found (ppm)			Converted Value into 500 mg (ppm)			Ratio for Sample		
				Ca	Mg	Fe	Ca	Mg	Fe	Ca	Mg	Fe
1	S		273.5	0.9053	0.1336	3.6360	1.655	0.244	6.647	1.00	1.00	1.00
2	10	+	153.9	2.7380	0.2109	1.6130	8.895	0.685	5.240	5.37	2.81	0.79
3	10	−	139.7	0.5415	0.0487	1.7250	1.938	0.174	6.174	1.17	0.71	0.93
4	20	+	124.6	0.9260	0.1758	1.6600	3.716	0.705	6.685	2.25	2.89	1.01
5	20	−	160.9	1.7230	0.1385	1.6000	5.354	0.430	4.972	3.24	1.76	0.75
6	30	+	198.7	1.0500	0.0840	2.2270	2.642	0.211	5.604	1.60	0.86	0.84
7	30	−	246.4	0.9147	0.0806	2.3020	1.856	0.164	4.671	1.12	0.67	0.70
8	S		342.4	1.2230	0.0881	4.071	1.786	0.129	5.945	1.00	1.00	1.00
9	40	+	221.4	0.6510	0.0397	2.223	1.470	0.088	5.020	0.99	0.68	0.85
10	40	−	233.8	0.9029	0.1048	2.398	1.931	0.224	5.128	1.08	1.74	0.86
11	50	+	168.7	0.4673	0.0287	1.505	1.385	0.085	4.461	0.78	0.66	0.75
12	50	−	189.7	0.9985	0.0675	2.414	2.632	0.178	6.363	1.47	1.38	1.07
13	60	+	193.7	0.7304	0.1542	1.320	1.885	0.398	3.407	1.06	3.09	0.57
14	60	−	194.4	2.915	0.2756	1.650	7.497	0.709	4.244	4.20	5.50	0.71
Averaged Value			Original Sample				1.721	0.187	6.296	1	1	1
			Discharged Sample				3.439	0.338	5.163	1.99	1.81	0.82

In Table II, the quantity of calcium and magnesium showed partially a little larger values than the original sample. It was presumed that the unparticipated part of the carbon stick for the discharge was mixed in the analytical sample. Accordingly, the following samples were made by the filing along to the discharged faces. The analytical results of these samples were shown in Table III. These results differed from Table I and II, the quantity of calcium and magnesium has increased in the whole samples.

The discharge in the above experiments was only repeated a instantaneous spark discharge. Although an electric current in those cases exceeded 50 A temporarily, much curent did not run in the consecutive discharge. Therefore, the discharge was continued until boiling of water. The results in these cases were shown in Table IV.

A large volume of gas generated in these discharge. The gas treated as the above was examined by gas chromatography, and the existence of carbon dioxide and hydrocarbon loo ks like methane were recognized.

Table III

No	Volt	Pole	Weight (mg)	Found (ppm)			Converted Value into 500 mg (ppm)			Ratio for Sample		
				Ca	Mg	Fe	Ca	Mg	Fe	Ca	Mg	Fe
1	S		380.0	0.9596	0.0793	4.7920	1.263	0.104	6.305	1.00	1.00	1.00
2	10	+	81.1	0.4056	0.0576	0.6923	2.501	0.355	4.268	1.98	3.41	0.68
3	10	−	80.5	0.3705	0.0523	0.7256	2.301	0.325	4.507	1.82	3.13	0.71
4	20	+	115.4	0.5595	0.0828	0.8267	2.424	0.359	3.582	1.92	3.45	0.57
5	20	−	151.3	0.3824	0.0507	1.0740	1.264	0.168	3.549	1.00	1.62	0.56
6	30	+	130.4	0.6995	0.1938	0.7568	2.682	0.743	2.902	2.12	7.14	0.46
7	30	−	164.3	0.6958	0.0419	1.0180	2.117	0.128	3.098	1.68	1.23	0.49
8	S		398.4	1.2040	0.0594	3.4410	1.511	0.075	4.319	1.00	1.00	1.00
9	40	+	124.9	0.8212	0.1440	0.8109	3.287	0.576	3.246	2.18	7.68	0.75
10	40	−	146.4	3.0770	0.1606	1.0110	10.51	0.548	3.453	6.95	7.31	0.80
11	50	+	134.3	1.0090	0.0694	0.8542	3.757	0.258	3.180	2.49	3.44	0.74
12	50	−	131.9	0.4188	0.0577	0.5395	1.588	0.219	2.045	1.05	2.92	0.47
13	60	+	175.1	0.5886	0.0479	0.8554	1.681	0.137	2.443	1.11	1.83	0.57
14	60	−	141.2	0.5174	0.0302	0.8242	1.832	0.107	2.919	1.21	1.43	0.68
Averaged Value			Original Sample				1.387	0.090	5.312	1	1	1
			Discharged Sample				3.002	0.372	3.355	2.17	4.13	0.63

Table IV

No	Volt	Pole	Weight (mg)	Found (ppm)			Converted Value into 500 mg (ppm)			Ratio for Sample		
				Ca	Mg	Fe	Ca	Mg	Fe	Ca	Mg	Fe
1	S		120.5	0.4158	0.0848	1.5290	1.7253	0.3519	6.3444	1.00	1.00	1.00
2	10	+	104.4	1.1230	0.0352	1.0910	5.3783	0.1686	5.2251	3.12	0.48	0.82
3	10	−	94.9	2.8210	0.0552	1.3650	14.863	0.2908	7.1918	8.61	0.83	1.13
4	20	+	156.0	3.9320	0.0525	2.0230	12.603	0.0168	6.4840	7.30	0.05	1.02
5	20	−	99.4	1.4910	0.0510	1.2350	7.5000	0.2565	6.2123	4.35	0.73	0.98
6	30	+	116.8	2.7140	0.0531	1.6130	11.618	0.2273	6.9050	6.73	0.65	1.09
7	30	−	120.5	2.7300	0.0676	1.6920	11.328	0.2805	7.0207	6.57	0.80	1.11
8	40	+	106.4	0.8361	0.0354	1.1040	3.9290	0.1664	5.1880	2.28	0.47	0.82
9	40	−	87.1	5.6970	0.0857	1.0890	32.704	0.4920	6.2514	19.0	1.40	0.99
			Filtrate	1.0060	0.0293	0.5042	Discharge for ca. 15min. at 10 V					
			Water	0.0019	0.0000	0.0227	Distilled					(10mℓ)

By the measurement of pH and electric conductivity of the used water, a descended curve in the former and an ascent straight line with acute angle in the latter were obtained (cf. Fig.1).

Moreover, both of the distilled and used water were analyzed with ICP. These results were added to the Table IV, too.

At the beginning, we expected the change to iron from carbon by the discharge, because

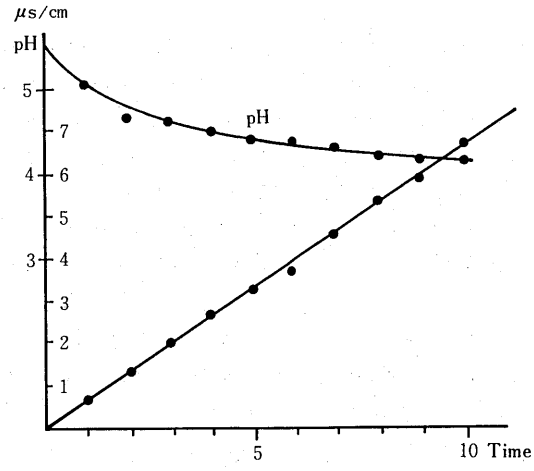

Fig.1 Change of pH and Electric Conductivity of Water by Discharge (25 V)

iron was widely distributed on the earth. However, we found the increase in quantity of other metals as showed in the Tables. On the other hand, it was recognized that in the discharge between aluminium plate and carbon stick, silicon element having a proton more than aluminium was detected in pretty amount (cf. Table V).

Table V

No	Volt	Pole	Weight (mg)	Found (ppm)			Converted Value into 500 mg (ppm)			Ratio		
				Mg	Al	Si	Mg	Al	Si	Mg	Al	Si
					×1,000			×1,000				
1	S		186.9	0.1549	3.543	0.8845	0.4143	9.478	2.3662	1	1	1
2	25	+	183.8	0.0956	3.411	2.635	0.2601	9.279	7.1681	0.63	0.98	3.03
3	25	−	241.0	0.1358	4.319	3.366	0.2817	8.961	6.9834	0.68	0.95	2.95

The authors cann't decide simply whether the increase in quantity of these elements come from the change of carbon from the conversion of comtaminated elements, but it looks like the change of carbon from the analytical results.

If analytical values of the original sample come out in the large figures, the ratio of the elements in discharged sample become smaller than it. As such results appeared in a few times, the authors enforced the another experiment. And the averaged values of eight samples discharged at 20, 30 and 40 V and of two original samples gathered from the end and the middle of carbon stick were shown in the Table VI.

Table VI Averaged Values (ppm) of Metallic Element in Sample (500mg)

Name	Ca	Mg	Fe	Al	Ni	Ti	Si
Original sample	3.58	0.23	3.85	2.03	0.17	0.66	3.06
Discharged sample	5.45	0.28	3.50	2.03	0.11	0.66	3.08

For the confirmation of an emission of radiant ray, the film for x-ray photograph

affixed both to out and inside of 1l beaker and the discharge was enforced in it. The outside films were not sensitized, but inside ones were affected by the radiant ray in all cases.

The discharged and original (nondischarged) samples packed separately in the polyethylene bag were irradiated in the reactor. After that, they were inspected with 2 π gasflow counter and multichannel pulseheight analyzer. From the difference of the measured values between the original and discharged samples and the appearance of some new peaks in the latter, the authors believed firmly the formation of another elements from the carbon with this experiment.

The discharge could not enforced at the quite same conditions, bacause the states of the electrode, electric current and others could not fixed. Consequently, the identical results was not obtained in the same conditional discharge.

From these results, the nuclear conversion looks like originate by the discharge on carbon or aluminium. If these matters are enlarged, it will be able to express that the light atoms has a possibility of conversion into heavier ones, when they get the large energy.

We desire earnestly the reexamination and reconfirmation of these resurch by other scholars.

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Ann. Rept. Kinki Univ. Atomic Energy Res. Inst.　　**Errata**

頁 Page	行 Line	誤 Error	正 Right
3	37	loo	loo-
41	26	(10^{-4} Bq／cm)	(10^{-4} Bq／cm^2)
47	24	Kinki University	Kinki University Reactor
49	9	吸引線量	吸収線量