Some Thoughts on the Zpower Overunity Device

The overunity device of Dr. James B. Schwartz discussed here in 2015 https://revolution-green.com/the-dr-james-b-schwartz-err-challenge/ and again in 2019 https://revolution-green.com/zpower-free-energy-solid-state-device/ uses a series of aluminum and bismuth plates with some internal coils that are obviously driven either with sine waves or are pulsed. As this seems to have been successfully demonstrated to produce its own power it is worth considering what is special about the combination of Al, Bi and a magnetic field. Well my trusty old "Reference Data for Radio Engineers", fourth edition (date about 1964 but as the tattered book has lost some pages I'm not sure about that) has an interesting table of chemical elements in order of their potentials, reproduced here.

Electromotive force

Series of the elements

element	volts	ion	element	volts	ion
Lithium	2.9595	Li^{+}	Tin	0.136	Sn^{++}
Rubidium	2.9259	Rb^{+}	Lead	0.122	Pb^{++}
Potassium	2.9241	K^{+}	Iron	0.045	Fe^{+++}
Strontium	2.92	Sr^{++}	Hydrogen	0.000	H^{+}
Barium	2.90	Ba^{++}	Antimony	−0.10	Sb^{+++}
Calcium	2.87	Ca^{++}	Bismuth	−0.226	Bi^{+++}
Sodium	2.7146	Na^{+}	Arsenic	−0.30	As^{+++}
Magnesium	2.40	Mg^{++}	Copper	−0.344	Cu^{++}
Aluminum	1.70	Al^{+++}	Oxygen	−0.397	O^{-}
Beryllium	1.69	Be^{++}	Polonium	−0.40	Po^{++++}
Uranium	1.40	U^{++++}	Copper	−0.470	Cu^{+}
Manganese	1.10	Mn^{++}	Iodine	−0.5345	I^{-}
Tellurium	0.827	Te^{--}	Tellurium	−0.558	Te^{++++}
Zinc	0.7618	Zn^{++}	Silver	−0.7978	Ag^{+}
Chromium	0.557	Cr^{++}	Mercury	−0.7986	Hg^{++}
Sulphur	0.51	S^{--}	Lead	−0.80	Pb^{++++}
Gallium	0.50	Ga^{+++}	Palladium	−0.820	Pd^{++}
Iron	0.441	Fe^{++}	Platinum	−0.863	Pt
Cadmium	0.401	Cd^{++}	Bromine	−1.0648	Br^{-}
Indium	0.336	In^{+++}	Chlorine	−1.3583	Cl^{-}
Thallium	0.330	Tl^{+}	Gold	−1.360	Au^{+++}
Cobalt	0.278	Co^{++}	Gold	−1.50	Au^{+}
Nickel	0.231	Ni^{++}	Fluorine	−1.90	F^{-}

Figure 1. Elements and their potentials.

Note that Al has a positive potential while Bi has a negative potential. Wikipedia has a page devoted to Electronegativity as a concept that describes the tendency of an atom to attract electrons (or electron density) towards itself where Flourine is the most negative. It also mentions Electropositivity as a measure of an element's ability to donate electrons where the alkali metals are the most electropositive of all. It then muddies the waters with a scale of Electronegativity that are all positive values, but it is clear that the above table is showing which elements belong to which group. Thus Al tends to shed electrons and Bi tends to attract electrons. This suggests strongly that a bimetallic contact between Al and Bi will produce a voltage, and from the table we can expect that to be about 1.9V. Of course we can't have a practical closed circuit with just one bimetallic contact, so we end up with zero volts. To get a useful voltage one of the bimetallic contacts must be in a different environment to the other, as is well known in the use of thermocouples where temperature plays its part. Al-Bi thermocouples are not effective for temperature sensing presumably because temperature does not significantly affect the voltage. However that Zpower device uses magnetic fields, so I ask myself does a magnetic field influence the measured contact potential for Al-Bi? I can find no evidence whether it does, so maybe some experimentation is the way to find out. It should be possible to have a closed circuit with two Al-Bi contacts in series connected to a voltmeter, then place a coil near one contact in such a way that its alternating magnetic field does not induce current into that closed circuit. That should tell us something. My gut feeling is that there will be a measurable effect if the magnetic vector potential **A** field is normal to the contacting plane (but care must be taken that this is not produced by induced voltage across that element of the closed circuit).