

Nuclear Transmutation Effects after Exposing Electrodes to Electricity?

Presenter:

Matthias Grabiak

(representing Quantum Rabbit LLC)

Experiments exposing electrodes made of purified samples of various elements to electricity have shown a surprising appearance of other elements not originally present. Since conventional physics would predict that the Coulomb barrier between **multiply charged nuclei** should be absolutely impossible to overcome in low energy nuclear reactions, further research is warranted to assert that these observations are indeed evidence of nuclear reactions, and are not just caused by contamination. On the positive side, given the concentrations seen it may be possible look for an unusual isotopic composition of the unexpected elements, which would strengthen the claim that transmutation has taken place.

The Experimenters

- Edward Esko (edwardesko@gmail.com)
- Alex Jack
- Woody Johnson

The experimenters were not scientists in the usual sense, but were inspired by a holistic viewpoint suggesting that transmutation at low energies should be possible.

They decided to test the idea for themselves and set up a small laboratory in Nashua, NH, which they named **Quantum Rabbit**.

My Role

I was not involved in the experiments and only contacted the Quantum Rabbit team at a later time.

I do have a PhD in theoretical physics, but have not been active in the field for many years. Nonetheless, I have been discussing ideas with the Quantum Rabbit team.

I also published a critical report about the Quantum Rabbit experiments in the Infinite Energy magazine (Volume 16, Issue 92, 2010, p. 14)

Contact Info: Matthias Grabiak lenr@grabiak.net

Isn't LENR of Heavier Elements Absolutely Impossible???

- It is hard enough to explain how LENR of deuterium could be possible. The Coulomb barrier is an obstacle that is extremely hard to overcome.
- Quantum Rabbit experiments suggest transmutation of elements as heavy as Fe, Ag, Cu with a dramatically larger Coulomb barrier.
- **That seems like an outrageous claim.**

After all, these kinds of reaction won't even happen on the sun, where much higher energies and densities are available.

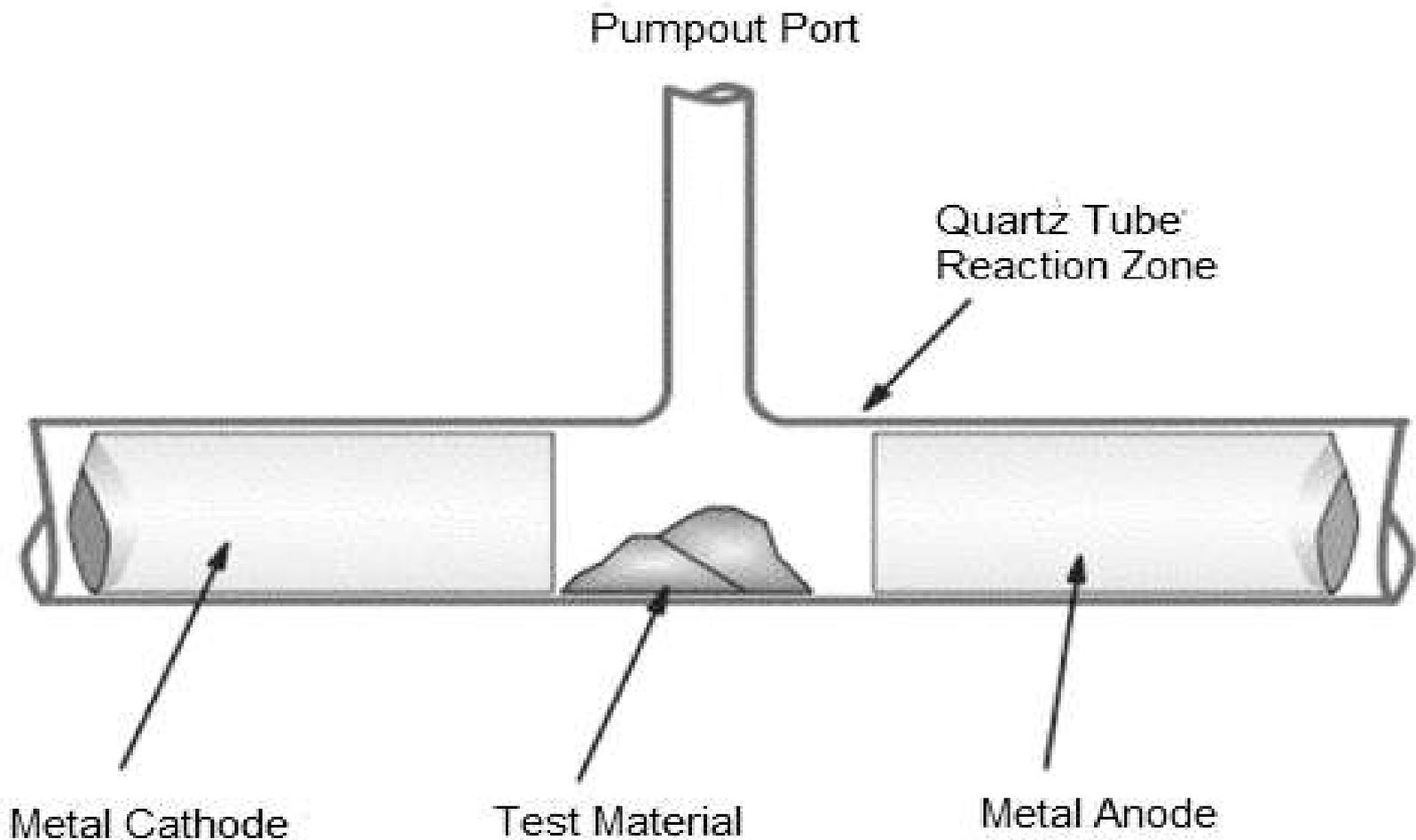
Dismiss the Evidence or Attempt Replication?

- Progress in science is only made by challenging existing understanding.
- The Quantum Rabbit Experiments are relatively cheap and easy to perform.
- Even if it is deemed very unlikely that there is a real effect, and not just experimental error, if the findings were confirmed it would have far-reaching consequences.

Dismiss the Evidence or Attempt Replication?

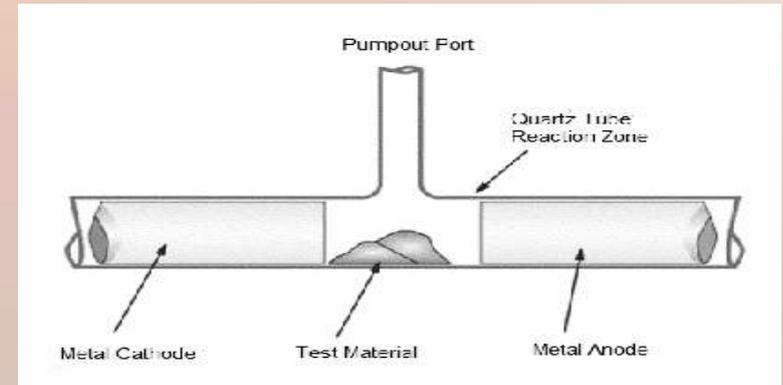
Why not be bold? Even if it turns out that the effect cannot be confirmed, not much will have been lost by trying.

Quantum Rabbit Test Tube Experiments



Quantum Rabbit Experiments

- Various kinds of test materials (Li, S) were placed between two electrodes
- Air was pumped out, oxygen pumped back at a pressure of a few Torr
- Electricity was applied to the electrodes and the test material was heated until it started evaporating
- Electrodes and test materials were sent to a laboratory for material analysis



Quantum Rabbit Experiments

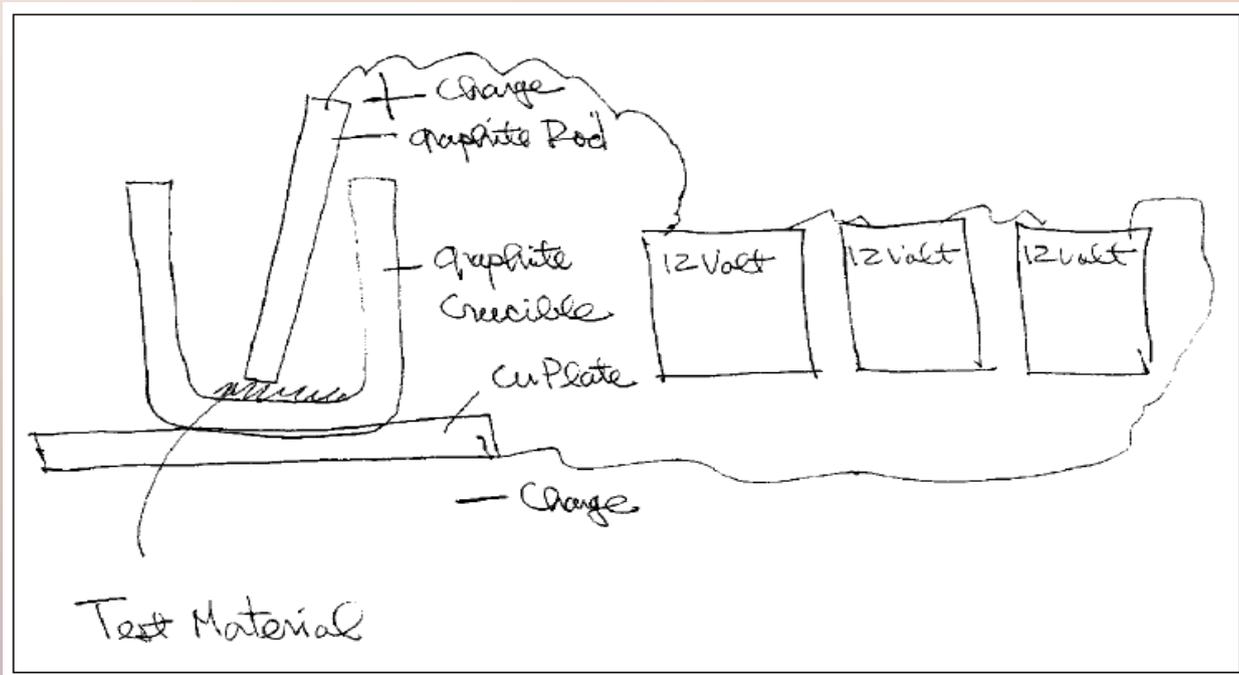
- Certified pure materials were used for electrodes and test materials
- Lab analysis of electrodes and test materials performed after the experiment showed traces of elements that were (supposedly) not present initially
- This could be a hint that the anomalous elements were produced by transmutation – **provided contamination can be ruled out**

Experimental Results

“Greatest Hits”

Reaction	End Product Concentration	Where Observed	Setup
$\text{Fe} + \text{Li} \rightarrow \text{Cu}$	1500 ppm	anode	stainless electrodes with Li test substance
$\text{Zn} + \text{S} \rightarrow \text{Pd}$	91 ppm	S residue	Cu/Zn electrode with S test substance
$\text{Zn} + \text{O} \rightarrow \text{Sr}$	14 ppm	anode	Cu/Zn electrode with S test substance
$\text{S} + \text{O} \rightarrow \text{Cr}$	198 ppm	S residue	Cu/Zn electrode with S test substance
$\text{Ag} + \text{Li} \rightarrow \text{Sn}$	3 ppm	Li residue	Cu/Ag electrodes with Li test substance
$\text{Cu} + \text{Li} \rightarrow \text{Ge}$	2190 ppm	cathode	Cu electrodes with Li test substance
$\text{C} + \text{O} \rightarrow \text{Si}$	138 ppm	cathode	graphite electrodes with S test substance

Quantum Rabbit Carbon Arc Experiments



- Graphite or silicone powders in pure graphite crucible
- Powder receiving 100 to 200 strikes from charged graphite rod

Quantum Rabbit Carbon Arc Experiments

- Old experiment, dating back to the 60s
- Graphite test material will acquire magnetic properties
- While originally attributed to iron created by transmutation, it has been found later that magnetic forms of carbon exist

Experiment not immediate proof of transmutation as originally thought.

Quantum Rabbit Carbon Arc Experiments

Nevertheless, material analysis shows appearance of other elements after the experiment:

Element	Composition Sample (ppm)
Silicon	10500
Magnesium	1800
Iron	4700
Copper	4200
Aluminum	7800
Titanium	440
Sulfur	580
Potassium	1000

Transmutation or Contamination?

- While the observed concentrations of assumed transmutation products have been impressive, contamination cannot be ruled out.
- It is desirable to have better equipped laboratories try to replicate the experiments under more strictly controlled experimental conditions than is possible at the Quantum Rabbit laboratory.

Additional Ideas

- Try to produce extremely rare elements. That would rule out contamination.
- Examine the isotopic composition of the end products.
- Transmutation → highly abnormal isotope mix
- Contamination → ordinary isotope mix

Additional Ideas

- Design experiments to maximize evidence from isotopic composition

Example: $\text{Mn} + \text{Li} \rightarrow \text{Ni}$

$\text{Mn} = \text{Mn}^{55}$

$\text{Li} \approx 92.5\% \text{Li}^6 + 7.5\% \text{Li}^7$

$\text{Ni} \approx 68\% \text{Ni}^{58} + 26\% \text{Ni}^{60} + 1\% \text{Ni}^{61} + 3.6\% \text{Ni}^{62} + 1\% \text{Ni}^{64}$

Mostly $\text{Ni}^{61} \rightarrow$ transmutation

Mostly Ni^{58} & $\text{Ni}^{60} \rightarrow$ contamination

Assuming a simple combination of nuclei. But even if extra processes like neutron emissions occur, it is unlikely that the resulting composition would have any resemblance to the ordinary composition of Ni.

Additional Ideas

- CR-39
- Check end products not only for expected transmutation products, but cross-check for other elements

Example:

$\text{Fe} + \text{Li} \rightarrow \text{Cu}$, consistent with with Quantum Rabbit observations.

But Cu not expected from $\text{Co} + \text{Li}$ or $\text{Ni} + \text{Li}$. Will it still show up in similar concentrations? If it does, it may hint at contamination.

Conclusions

- While interesting results have been obtained at the Quantum Rabbit laboratory, more research will be needed to provide solid confirmation that transmutation is occurring.
- Call to action to other research groups: Attempt to replicate the Quantum Rabbit experiments.

Contact Edward Esko for more information

edwardesko@gmail.com