

## Appendix 017 C

# About Muons in LENR

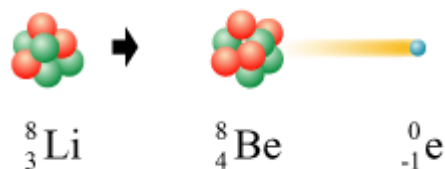


Referring to our previous comment “**Report 017B**”:

<http://www.hydrobetatron.org/017b-ultimo-report.html>

about L. Holmlid’s experimental work, a *special feature* of Open Power Pat. Appl. must be underlined: an effort is made to search configurations able to convert directly nuclear energy into electric one.

Here we wish bring to attention the possibilities offered by adjusting the reaction conditions for driving the kind of decay (or kind of emitted particles ). *As an example of discussion*, an interaction of  $\text{Li}^7$  with deuterium might emit a thermal neutron; if successively captured by an outer layer of  $\text{Li}^7$ , if it may create  $\text{Li}^8$  (instable), this decays into  $\text{Be}^8$  according to a beta process, followed by a transformation of  $\text{Be}^8$  in two  $\text{He}^4$ ;



the negative particle emission, bringing a part of developed nuclear energy, if captured by a metallic target, can produce a negative potential to drive an electric current. Obviously, the reactor structure must be suitable to permit separate transmutations in suitable regions. Thus the device might achieve cogeneration of thermal/electric energy.

Experimental data reported in : *L. Holmlid et al.* , “Muon detection studied by pulse-height energy analysis: novel converter arrangements”:

<http://scitation.aip.org/content/aip/journal/rsi/86/8/10.1063/1.4928109>

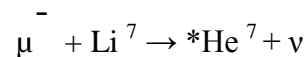
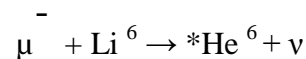
**confirm** the possibility of driving the fusion reactions towards a chain emission of mesons, decaying into energetic *muons*, finally decaying into **electrons**.

Muons are instable particles highly energetic (average lifetime 1-30  $\mu$ s, depending on their energy owing to relativistic time dilation), bringing a mass 200 times the electron one, easily influenced by electric and magnetic fields, usually originated from decaying of mesons coming by collisions of protons on matter.

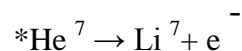
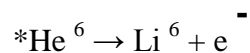
Holmlid reports the fusion-driven emission of neutral cluster fragments of ultra dense Hydrogen, rapidly converting to mesons, decaying into *muons*.

Muons interact with matter, falling into low energy orbitals around nuclei, forming *muonic atoms*; then, when a muon  $\mu^-$  is captured into the nucleus, produces an excited nucleus with a proton transformed into a neutron.

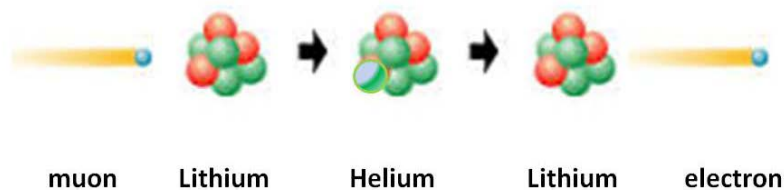
We propose, *as an example of discussion*:



followed by a beta decay:

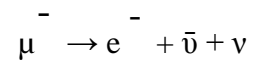


showing a *possible pure catalytic function* of lithium in the process for **electron producing**.

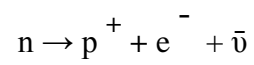


The electron energy content depends on kind of formed isotope and its excitation level.

A parallel reaction of decay of free muon is also possible:



The possible emission of a neutron from excited nucleus must be prevented, choosing the suitable nucleus to be bombarded, to avoid the *external* decay beta reaction (15 min lifetime):



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