Review of: "Neutronic Chain Reactions for Polonium-210 Production"

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Potential competing interests: No potential competing interests to declare.

This manuscript reports *the possibility to produce polonium-210 via a self-sustaining nuclear chain reaction*involving self-propagating neutron multiplication in bismuth salts.

I do not know about the originality of the paper, even search on Wikipedia one can find a reference to this technique described by the same author. Indeed, you Wikipedia searching for polonium-201 in the section production one can find: reference 12

[12] Lim, Solomon (2023). "Neutronic Chain Reactions for Polonium-210 Production". *SSRN*. doi:10.2139/ssrn.4469519

I had major problems with the results presented by the author.

The author shows in figure 13 and 14 the spectra of alpha and beta particles produced in the reaction, in the paper there is not anything about how the particles were detected, the detectors used, their position and when the particles were detected.

Figure 13 shows a sharp peak centered at 5.30 MeV, I wonder where the detector was in order to have such clean spectra.

Another point is about the production rate of polonium-210, how much polonium-210 was produced after seventy hours?

The author should pay more attention about the bibliography.

The order of the references is confused in the article, there is no sequentiality, the numbers go and down without any logic sequence.

There are references present in the bibliography but nor reported in the articles, as the 13, 30, 31 ….

The references should be scientific articles, it does not seem the case some references as the reference 32.

The last note, the paper is at a single name, but in the abstract it is written “In this paper we report …”. It should be corrected.

I do not know if the fact that this manuscript is already pubblished on the*SSRN journal could compromise the publication of this hournal. Anyway, t*aken in whole my comments, I recommend some major modifications of this manuscript before it

is published.