Editor's Comment:

I have reviewed the paper entitled 'Design of a Novel Shield of Nuclear Medicine with New Allow', shown as manuscript number 2015_PSIJ_16603. I recommend the following:

- Grammar, syntax & punctuation – while the English used in this text is understandably articulate, the paper suffers from numerous minute errors in grammar, spelling and punctuation. I believe it should be polished before being included in your publication

- Tables & Figures – the paper contains a single table, which is not well described or explained. It seems to me that an illustration showing the physical architecture of the layered material described by the authors would be useful and instructive. Further, it seems to me that a comparative graphic which demonstrates the results obtained from the Monte Carlo simulation would be useful and informative. Further, it would be useful to see a graphic which describes the results of gamma, neutron and related particle penetration over time and at varying degrees of propagation at the source would also be valuable.

- Environmental Issues – the authors assert that the new layered material containing bismuth and cadmium alloys is environmentally safe because it can somehow be repurposed. This is not consistent with existing literature and ignores a fundamental issue which all G-20 nations are struggling with. The capture and repurposing of these two materials constitutes a serious challenge which ought not to be glossed over. If the layered shield material is sufficiently effective to solve the problems described in the paper, the authors owe it to their readers and other researchers to identify the problems associated with recycling bismuth and cadmium as a way of facilitating a responsible introduction of the technology to the market place.

If these elements could be added to the paper, I believe it would be useful as an explanation of a new IP that advances the state of the art. If, in fact, this material could be demonstrated to effectively moderate radioactive emissions propagated by high level nuclear waste materials, for example, it could lead to the development of a much needed advancement. An issue that the paper does not deal with but which is crucial to such a discussion is the role of neutron embrittlement in the use and deployment of this material.

An important practical application of this layered material is that if it could be shown to effectively encapsulate alpha-emitter radionuclides to acceptable levels, ti might then be possible to design and construct alpha-voltaic power systems which automatically recharge themselves by capturing and converting emitted energy to useful applications. This has not been possible in the past because all high-level radionuclides exert significant short term embrittlement on the encapsulation materials. If this layered material solves that problem, then the world of self-recharging batteries and energy accumulator technologies would surely be upon us.

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