Referee Report to the 53rd Nuclear Physics P.A.C. on the Project

Study of deep subcritical electronuclear systems and possibilities of their application for energy production, transmutation of radioactive waste and research in the field of radiation material science. Part III. Quasi-infinite target

This project is an original and clever application of the concept of Accelerator Driven Systems (ADS) devoted to the transmutation of the spent nuclear fuel in less armful nuclear material, production of energy from the transmutation processes, and study of the effect of radiations on materials.

The submitted report describes in some detail the progress achieved during the year 2020 and a plan for the year 2021. I would like to stress the excellent work implemented in the simulations, which are certainly of important value for the actual construction of the equipment surrounding the main target and used mainly for monitoring purposes.

The whole project is unique and of tremendous value. My opinion is that it should receive continuative support.

The program for the year 2021, described in seven main points, is well organized although quite dense. Also considering the limitations consequential to the current pandemic, I would suggest spreading the program over the year 2022. I also would like to mention that, at first glance, and for the limited information included in the report, the proposed budget seems to be underestimated. I recommend a reevaluation of the budget during the year 2021 as the work will progress.

I therefore recommend without hesitation full support to this project in the years 2021 with first priority.

January 19, 2021 Emanuele Vardaci

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