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PROPOSAL TO DEVELOP THE NEW "NETRON GUN"

THERMAL NEUTRON SOURCE (TEC=TNS)

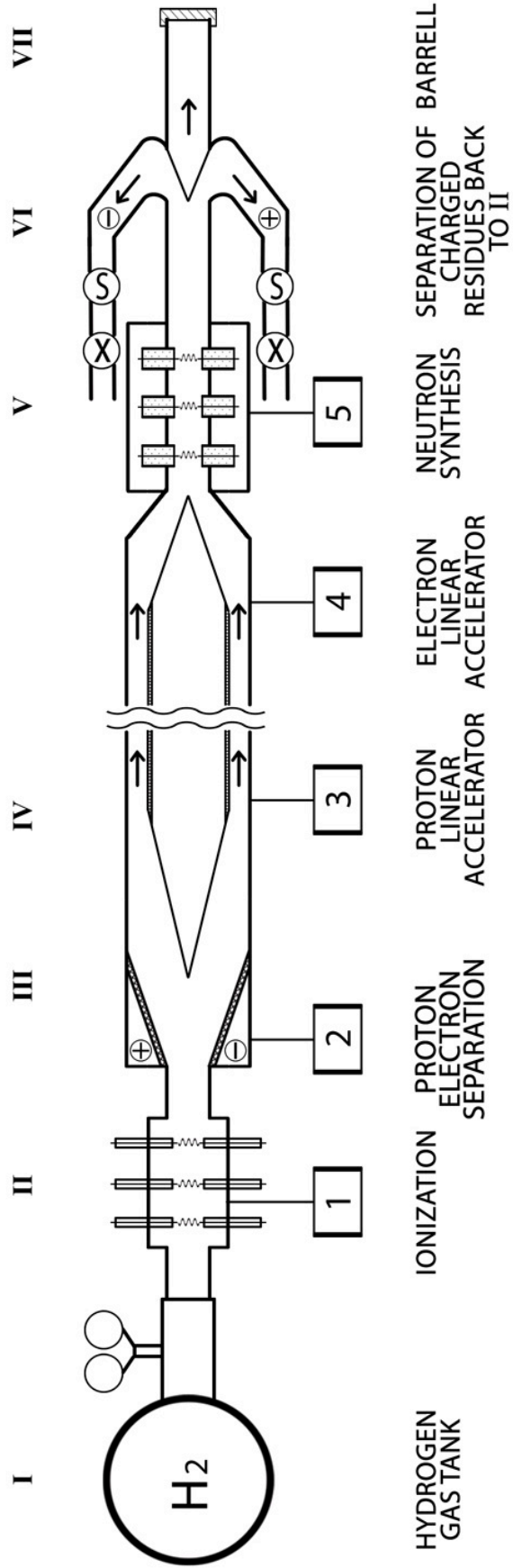
Following decades of research initiated in the 1980s at Harvard University under DOE contracts [1], Dr. Ruggero M. Santilli, a U.S. citizen and TEC Chief Scientist [2], has achieved the industrial synthesis of low energy neutrons from the hydrogen [3]. The currently available TEC-TNS (international patent pending by TEC) consists of a cylindrical vessel with 1' OD and 2' L containing hydrogen gas at 30 PSI pressure, said vessel comprising internal tungsten electrodes and means for the remote control of their gap. A particular form of rapid DC discharge at high voltage (at least 15kV) and high energy (at least 10 kJ per discharge) between the internal electrodes ionizes hydrogen into protons and electrons, aligns them with them proper spin coupling, and compress them, resulting in the synthesis of neutrons that exist the vessel for their detection via neutron detectors, gamma emission and activation of natural elements. The synthesized neutrons have low energy due to the low energy available in a plane perpendicular to the discharge. Due to these features, TEC-TNS has been proposed to the DTRA for the detection of smuggled nuclear weapons www.thunder-energies.com/DTRA=Grant=Proposal.pdf

THE NEUTRON GUN

The above synthesis of neutrons suggests the possible existence of a basically new gun, called the "neutron gun," which is expected to comprise the following sequential, main stations depicted in the main diagram: a tank of hydrogen gas at pressure (say, 2K psi) releasing the hydrogen to the gun at a controlled rate (Station I); the ionization of hydrogen gas in flight into protons and electrons via DC discharges (Station II); the separation of protons and electrons into two beams via electrostatic or other means (Station III); the coherent acceleration of said two beams via linear accelerators as used in particle physics (Station IV); the recombination of the accelerated proton and electron beams into the gun barrel and their synthesis in flight of neutrons via the use of the TEC-TNS technology (Station V); separation of residual protons and electrons and their return to the original ionization station with suitable check valves for the control of the flow (Station VI); while synthesized neutrons continues to move at speed through the barrel and finally exit through the nozzle (Station VII).

Notes. That the nozzle is enclosed by a lexan or equivalent material wall (which is transparent to neutrons); The recirculation of unbounded protons and electrons, then allows the neutron gun to be sealed for the protection of soldiers and of the environment. The gun will not be silent, since the series of rapid discharges of Station V, when operated at 20kV and 50 kJ, create a sound similar to that of automatic guns. The range of the neutron gun is currently unknown. However, of a sufficiently small sectional area (e.g., of a few mm square) and for sufficient energy of the neutrons (e.g., of the order of MeV), the range of the neutron gun is expected to be of the order of kilometers. The neutron gun is expected to be operated at a distance for the safety of the operator, and to have a shield for lateral neutron emissions which is not indicated in the diagram for simplicity. A neutron gun with the latter feature is expected to be lethal because of the disintegration of matter at its nuclear core. Residual radiation is evidently expected, but with mean life of the order of minutes when the target is given by natural elements in our environment/

TEC NEUTRON GUN



POWER SOURCES OF THE NEUTRON GUN

Power Unit I: Three commercially available high voltage DC generators for 1" long arcs within the hydrogen gas at pressure.

Power Unit II: One commercially available high voltage DC generator for electrostatic separation of charges.

Power Unit III: One specially designed generator for a linear accelerator of positive particles

Power unit IV: One specially designed generator for a linear accelerator of negative charges.

Power Unit IV: Three specially designed generators for high voltage high energy DC arcs

REFERENCES

[1] I. Gandzha and J. Kadeisvili, *New Sciences for a New Era: Mathematical, Physical and Chemical Discoveries of Ruggero Maria Santilli*, Sankata Printing Press, Nepal (2011), <http://www.santilli-foundation.org/docs/RMS.pdf>

[2] R. M. Santilli CV <http://www.world-lecture-series.org/santilli-cv>; Scientific Awards: <http://santilli-foundation.org/~santilli-nobel-nominations.htm>; Nominations for the Nobel Prize in Physics and separately in Chemistry. <http://nobelprizeweb.com>; Scientific archives <http://www.santilli-foundation.org/news.html>; Corporate archives: <http://thunder-energies.com/index.php/ct-menu-item-1>

[3] R. M. Santilli and A. Nas, "Confirmation of the Laboratory Synthesis of Neutrons from a Hydrogen Gas," *Journal of Computational Methods in Sciences and Engineering*, Vol. 14 (2014) 405–414. www.thunder-energies.com/docs/neutron-synthesis-2014.pdf 12 minute film on the TEC-TNS: www.world-lecture-series.org/newtron-synthesis-08-14



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