## LENR Transmutation of Stable Sr and K isotopes in Activated Microbiological Syntrophic Anaerobic Association

Alla Kornilova<sup>1</sup>, <sup>#</sup>Vladimir Vysotskii<sup>2</sup>, Sergey Gaydamaka<sup>1</sup> <sup>1</sup>Moscow State University, Russia <sup>2</sup>Taras Shevchenko National University of Kyiv, Ukraine <sup>#</sup>E-mail: vivysotskii@gmail.com,

In our previous works [1-4], the effective method for accelerated deactivation of the  $Cs^{137}$  isotope during nuclear reaction of transmutation  $Cs^{137}+p=Ba^{138}$  in growing microbiological cultures was presented.

At the present time we are solving the problem of accelerated transmutation of another very dangerous radioactive  $Sr^{90}$  isotope. The paper presents the results of study of a possible mechanism of  $Sr^{88}+p=Y^{89}$  transmutation of a stable  $Sr^{88}$  analog of the same radioactive isotope. The research was carried out on the basis of optimal anaerobic syntrophic associations grown on waste from the food and light industries.

A typical series of experiments lasted 21 days under anaerobic conditions and using special external distant control methods, and the result of the experiments is a significant decrease in the concentration of strontium, as well as an increase in the concentration of ytrium isotope.

In addition, a significant increase in the concentration of calcium was found as a result of the  $K39+p=Ca^{40}$  as well as a decrease in the concentration of potassium.

In our opinion, these reactions were stimulated by the same processes of optimization of nuclear reactions at low energies due to the formation of coherent correlated states in growing microbiological associations [5,6], as in the case of  $Cs^{137}$  isotope tansmutation.

[1]. Vysotskii V.I., Kornilova A.A. Nuclear transmutation of stable and radioactive isotopes in biological systems. Pentagon Press, India, 2010, 187 p.

[2]. Vysotskii V.I, Kornilova A.A. Annals of Nuclear Energy, 2013, v. 62: p.626-633.

[3].Vysotskii V.I., Kornilova A.A. Effective LENR and transmutation of stable and radioactive isotopes in growing biological systems, Cold Fusion. Advances in Condensed Matter Nuclear Science, Ed. by Jean-Paul Biberian, Elsevier, 2020. CHAPTER 12., pp. 205-232.

[4]. Kornilova A.A., Vysotskii V.I., Gaydamaka S.N., Gladchenko M.A.. Nuclear reactions in living nature: the possibility of biological processing and deactivation of liquid radioactive waste. Physical and Mathematical Modeling of Earth and Environment Processes. Springer Proceedings in Earth and Environmental Sciences. Springer, book series (SPEES), 2019, pp 213-230.

[5]. Vysotskii V.I., Vysotskyy M.V., "Coherent correlated states and low-energy nuclear reactions in non-stationary systems", European Phys. Journal A, v. 49, issue 8: 99, 2013.

[6]. Vysotskii V.I., Vysotskyy M.V., Universal mechanism of LENR in physical and biological systems on the base of coherent correlated states of interacting particles. Cold Fusion. Advances in Condensed Matter Nuclear Science, Ed. by Jean-Paul Biberian, Elsevier, 2020. CHAPTER 17., pp. 333-370.