

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Introduction to SC-Potential** FLORENTIN SMARANDACHE, University of New Mexico, Gallup, VICTOR CHRISTIANTO — A new type of potential for nucleus, which is different from Coulomb potential or Yukawa potential, is introduced. This new called Smarandache-Christianto potential may have effect for radius range within  $r = 5-10$  fm. For experimental verification of this potential, we find possible applications in the context of Condensed Matter Nuclear reaction. According to Takahashi's research, it is more likely to get condensed matter nuclear reaction using cluster of deuterium ( $4D$ ) rather than using  $D+D$  reaction (as in hot-fusion, in this process Coulomb barrier is very high). In recent work, Takahashi shows that in the TSC framework it is also possible to do CMNS reaction not only with  $DDDD$ , but also with  $DDDH$ ,  $DDHH$ ,  $DHHH$ , or  $HHHH$ , where the reaction can be different. In other words, TSC can be a mixture of heavy and light water (as in neutrosophic logic). More interestingly, his EQPET/TSC (*tetrahedra symmetric condensate*) model, Takahashi can predict a new potential called STTBA (*sudden-tall thin barrier approximate*) which includes negative potential (reverse potential) and differs from Coulomb potential. The SC-potential, which has sinusoidal form, can be viewed as a generalization of Takahashi's TSC/STTBA potential.

Florentin Smarandache  
University of New Mexico, Gallup

Date submitted: 05 Oct 2010

Electronic form version 1.4