

Abstract Submitted
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Bound nucleons have unique masses that govern elemental properties EUGENE PAMFILOFF, Optigon Research and Development, retired — It is known that measured binding energies associated with elements require equivalent energy to break the nuclear bond of a nucleus. Based upon the proposals contained in a recent published work [1] and with support from experimental high-energy data, it can be shown that a portion of listed binding energies are attributed to bound nucleons having a unique mass for every element. The figures show, relative to the hydrogen proton, that of the: a) 1.112 MeV binding energy per nucleon for ^2H , 44% or 0.486 MeV represents a change in mass for the proton and neutron; b) of 5.629 MeV binding energy per nucleon for ^7Li , 87% or 4.890 MeV represents a change of mass for each nucleon; c) likewise, ^{56}Fe has 8.811 MeV binding energy per nucleon and of this 92% or 8.119 MeV represents a change in mass for each nucleon; and ^{232}Th has 7.639 MeV binding energy per nucleon and of this, 90% or 6.848 MeV represents a change in mass for each nucleon. This demonstrates that the nucleons of each element have unique masses. It can be shown that if three protons are removed from ^{82}Pb the result is not ^{79}Au . We conclude and predict that in addition to the Z number, elemental properties are determined by the unique proton and neutron masses for each element. [1] <mailto:megforce@physast.uga.edu> megforce@physast.uga.edu “The Order of the Forces”

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