

Muon alchemy: Transmuting elements with the inclusion of negative muons

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Recent experiments have revealed that the chemical nature of helium atom is changed into that of hydrogen by the inclusion of a negative muon [1]. Here we explore the effects of replacing electrons by negative muons in atoms with $Z = 1-20$. These studies have been performed with the non-relativistic any particle molecular method implemented on the LOWDIN software. Results for atomic and molecular properties of these exotic systems are presented.

[1] D. G. Fleming, et al. Science 331, 448 (2011)