



ChemTech

International Journal of ChemTech Research

CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555

Vol.9, No.11 pp 426-431,2016

Evaluation of the energy of subshells for Al-atom and some like electronic series

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Abstract: The total energy of subshells (1s, 2s, 2p, 3s and 3p) and some important atomic properties were calculated in this research for systems which have atomic number $Z=13-15$ (Al-atom, Si^+ and P^{2+} ions) using HF wave function, where the effect of increasing the nuclear charge on the studied properties was observed. The resulted data were obtained numerically using computer program (Mathcad) and these results are evaluated in atomic units.

Keywords : multi-particles system, Slater determinates, Hartree-Fock approximation, atomic units.
