2005 Vol.43 No.5 pp.886-890 DOI:

Energies of $1s^2ng$ and $1s^2nh$ (n=5,6,7, and 8) States for Lithium Isoelectronic Sequence

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(Received: 2004-9-28; Revised:)

Abstract: The nonrelativistic energies for lithium isoelectronic sequence $1s^2ng$ and $1s^2nh$ (n=5, 6, 7, and 8) states from Z=3 to 8 are calculated by using a full core plus correlation (FCPC) method with multiconfiguration interaction wave functions. Relativistic and mass-polarization effects on the energy are evaluated as the first-order perturbation theory. Our predicted excitation energies are compared with previous experimental results in the literature.

PACS: 31.25.Jf, 31.30.Jv, 31.15.Pf

Key words: lithium-like system, full-core plus correlation, excitation energy

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