

Oxidation state of lithium species. XPS binding energies of lithium 1s electrons in salts, the metal and intercalated in molybdenum sulfide

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The binding energies of Li (1s) electron in a series of lithium salts, the metal, and lithium intercalated in molybdenum sulfide measured with respect to Au (4f7/2) agree with both the expected ionic character and oxidation state of lithium in the compounds. Thus, the binding energy increases with increasing charge on the observed atom. The E_b value (55.6 eV) as well as the sensitivity to air observed for lithium in the compound $\text{Li}_{0.8}\text{MoS}_2$ are similar to the metal.