# Is the chemistry of lawrencium peculiar?

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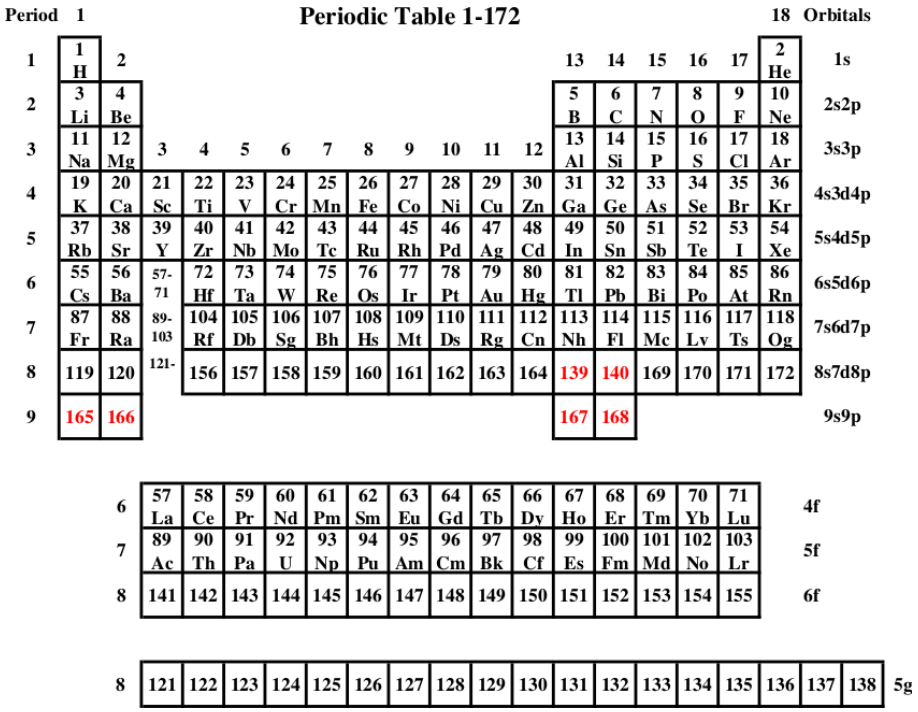
The Periodic Table (PT) is about chemistry. Lawrencium (Lr, $Z = 103$) is a short-lived man-made element. Its position in the PT had been debated for some time.[1] Recent experimental work [2] confirmed the theoretical predictions of its ground state,[3] which is different from that of its lanthanide counterpart lutetium. Lr is $7s^2(7p_{1/2})^1$, not $7s^26d^1$. In this study, we find that lawrencium atomic ionization potentials and molecular electronic structures are similar to lutetium in various regards. The molecular systems considered include hydrides, trichlorides, monocarbonyls and other organometallic molecules, from zero- to trivalent lawrencium[4].

We conclude that the peculiar atomic ground state of Lr does *not* lead to special chemistry, thus further supporting the current position of lawrencium in the PT.

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