

Question #76014, Chemistry / Other / Completed

In potassium why does the third energy level only hold 8 electrons

Answer:

For potassium: $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$

19 electrons!

Third level: $3s^2 3p^6$

Contains 8 electrons. There's 3d orbital exists. But according to the rules, first started to fill 4s orbital. That's why there's only 8 of them. (the order based on the Madelung rule for the configurations of neutral atoms; 4s is filled before 3d in the sequence Ar, K, Ca, Sc, Ti)*

* https://en.wikipedia.org/wiki/Electron_configuration

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