Structure 1.3 · Electron configurations

International Baccalaureate · IB Diploma · Chemistry · HL · Vocabulary in context

Word	Example
electromagnetic spectrum /ɪˌlektrəʊməgˈnetɪk ˈspektrəm/	Radio waves and X-rays are both in the **electromagnetic spectrum**. X
photon /ˈfəʊtɒn/	A **photon** is a small packet of light energy.
continuous spectrum	A hot lamp gives a **continuous spectrum** of all colours.
line emission spectrum	A **line emission spectrum** shows separate bright lines.
energy level /ˈenədʒi ˈlevl/	The electron jumps to a higher **energy level**.
excited state /ekˈsaɪtɪd steɪt/	An atom in an **excited state** has extra energy.
quantized /ˈkwɒntaɪzd/	Electron energies are **quantized**: only some values are allowed.
converge /kənˈvɜːdʒ/	The lines **converge**: they get closer and closer together.
convergence limit	At the **convergence limit**, the lines meet.
principal quantum number /ˈprɪnsɪpl ˈkwɒntəm ˈnʌmbə/	The **principal quantum number** n = 2 means the second shell. n = 2
sublevel	The p **sublevel** contains three orbitals. p
atomic orbital	An **atomic orbital** shows where an electron is likely to be.

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degenerate /dɪˈdʒenəreɪt/	Orbitals with the same energy are **degenerate**.
Aufbau principle	The **Aufbau principle** fills the lowest orbitals first.
Pauli exclusion principle	The **Pauli exclusion principle** allows two electrons in each orbital.
opposite spins	Two electrons sharing an orbital have **opposite spins**.
Hund's rule	**Hund's rule** puts one electron in each orbital before pairing them.
full electron configuration	A **full electron configuration** lists every sublevel, such as 1s2 2s2 2p6. 1s2 2s2 2p6
condensed configuration	A **condensed configuration** starts with a noble gas, such as [Ne] 3s1. [Ne] 3s1
orbital diagram	An **orbital diagram** uses boxes and arrows.
negative ion	An atom gains electrons to form a **negative ion**.
positive ion /ˈpɒzɪtɪv ˈaɪɒn/	An atom loses electrons to form a **positive ion**.
transition element /trænˈsɪʃn ˈelɪmənt/	Iron is a **transition element**.
first ionization energy	Sodium has a low **first ionization energy**.
nuclear charge /ˈnjuːklɪə tʃɑːdʒ/	Chlorine has a larger **nuclear charge** than sodium.
shielding /ˈʃiːldɪŋ/	Inner electrons give **shielding**: they block some of the pull of the nucleus.

Word	Example
successive ionization energy	Each **successive ionization energy** is larger than the one before.

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