

exceptions to periodic trends in 1st IE

recall: in a row

left \rightarrow right: ... \uparrow IE

exceptions

① transition metal

recall: e⁻ configuration & periodic table

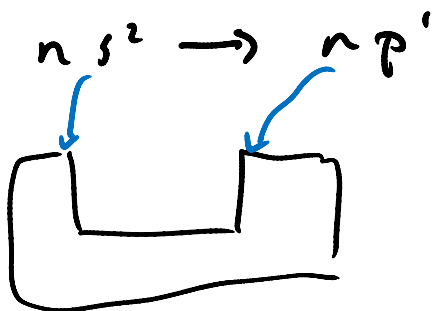
left \rightarrow right:

e⁻ enter inner shell e⁻

\downarrow

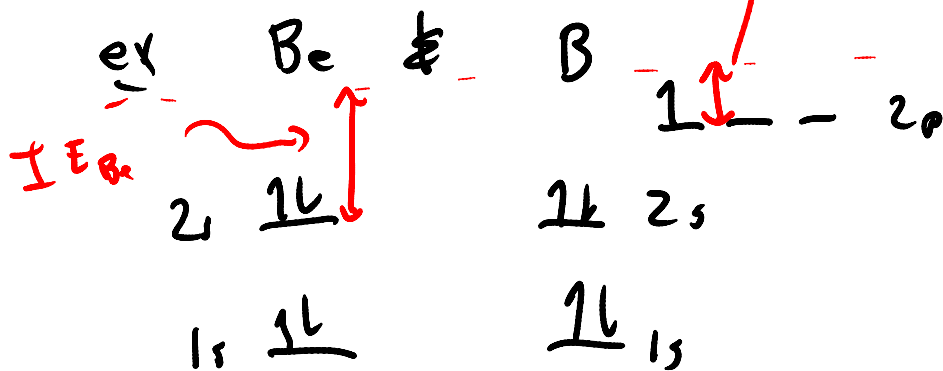
$\uparrow s$ } $\rightarrow \uparrow Z_{eff} \rightarrow \uparrow F_{attr} \rightarrow \uparrow IE$
 $\uparrow Z$ }

②



"e⁻ is lone"

\downarrow
n = 2



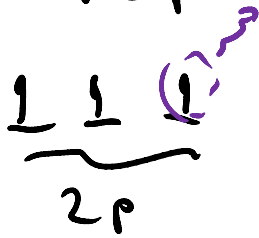
$$IE_{Be} > IE_B$$

$$\text{or } IE_B < IE_{Be}$$

③ $n p^3 \rightsquigarrow n p^4$

ex $u \quad \& \quad 0$

$[\quad] 2 p^3 \quad [\quad] 2 p^4$



easier to remove e^-

$\leftarrow \downarrow$ Fatt

\downarrow
need to do less work to remove e^-

\rightarrow need less energy to remove e^-

$\rightarrow \downarrow$ I E