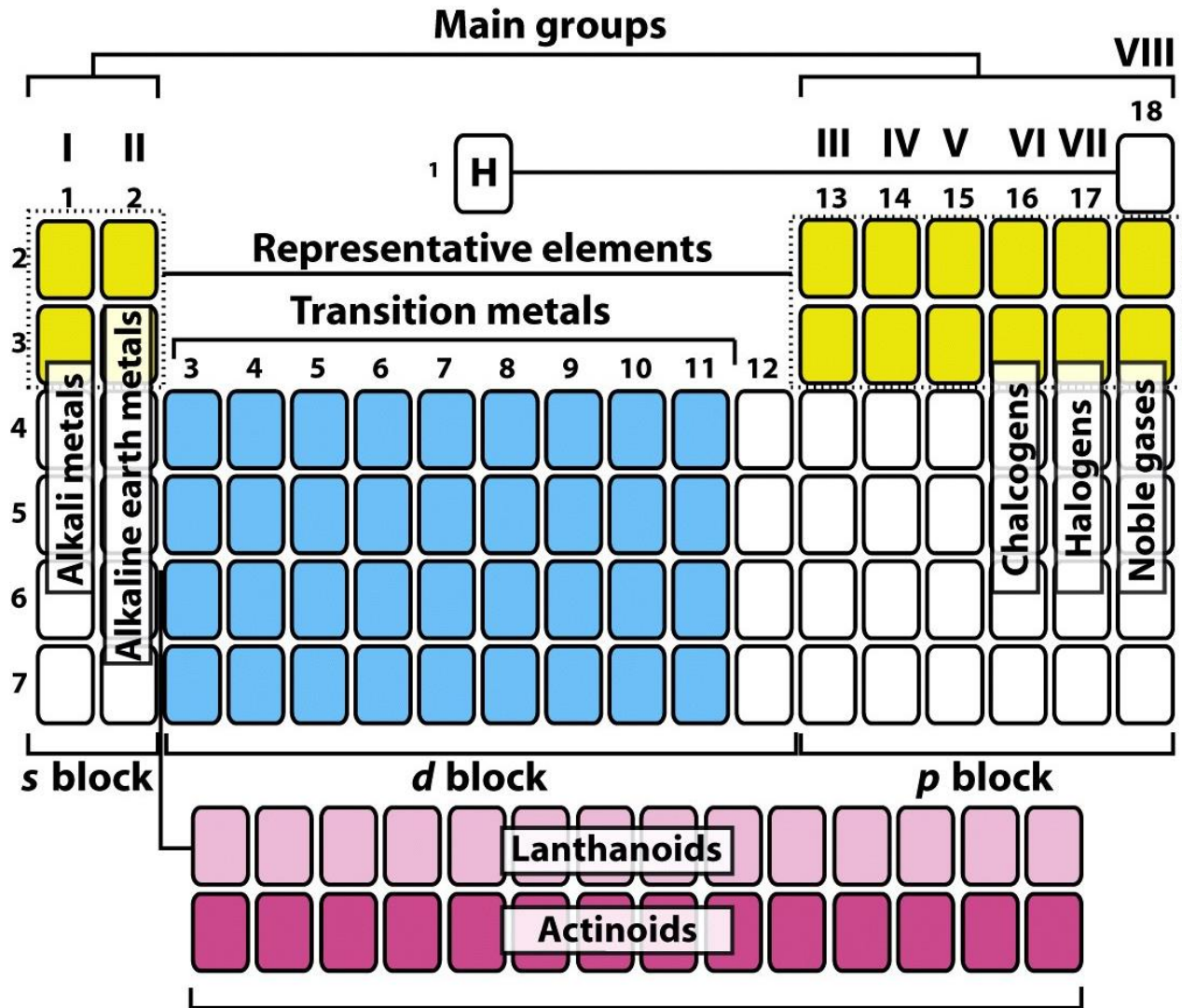


<http://www.rsc.org/periodic-table>



# *The 32-column version of the periodic table published by IUPAC*

H																	He															
Li	Be															B	C	N	O	F	Ne											
Na	Mg															Al	Si	P	S	Cl	Ar											
K	Ca															Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
Rb	Sr															Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
Cs	Ba	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr		Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og

7	8	9	10	11	12	
Mn	Fe	Co	Ni	Cu	Zn	Al
Tc	Ru	Rh	Pd	Ag	Cd	Ga
Re	Os	Ir	Pt	Au	Hg	In
						Tl

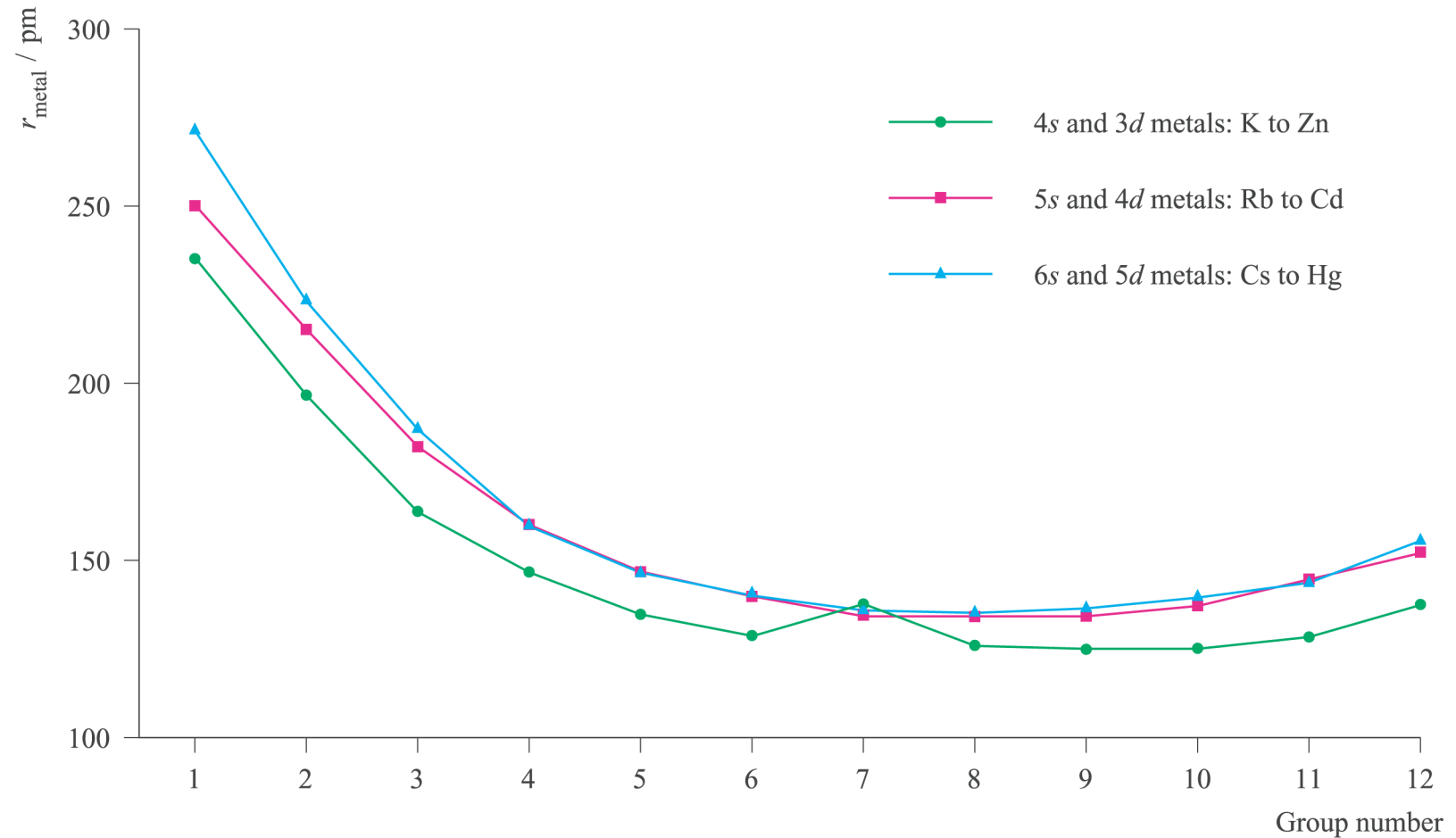
**Platinum  
metals**

**Coinage  
metals**

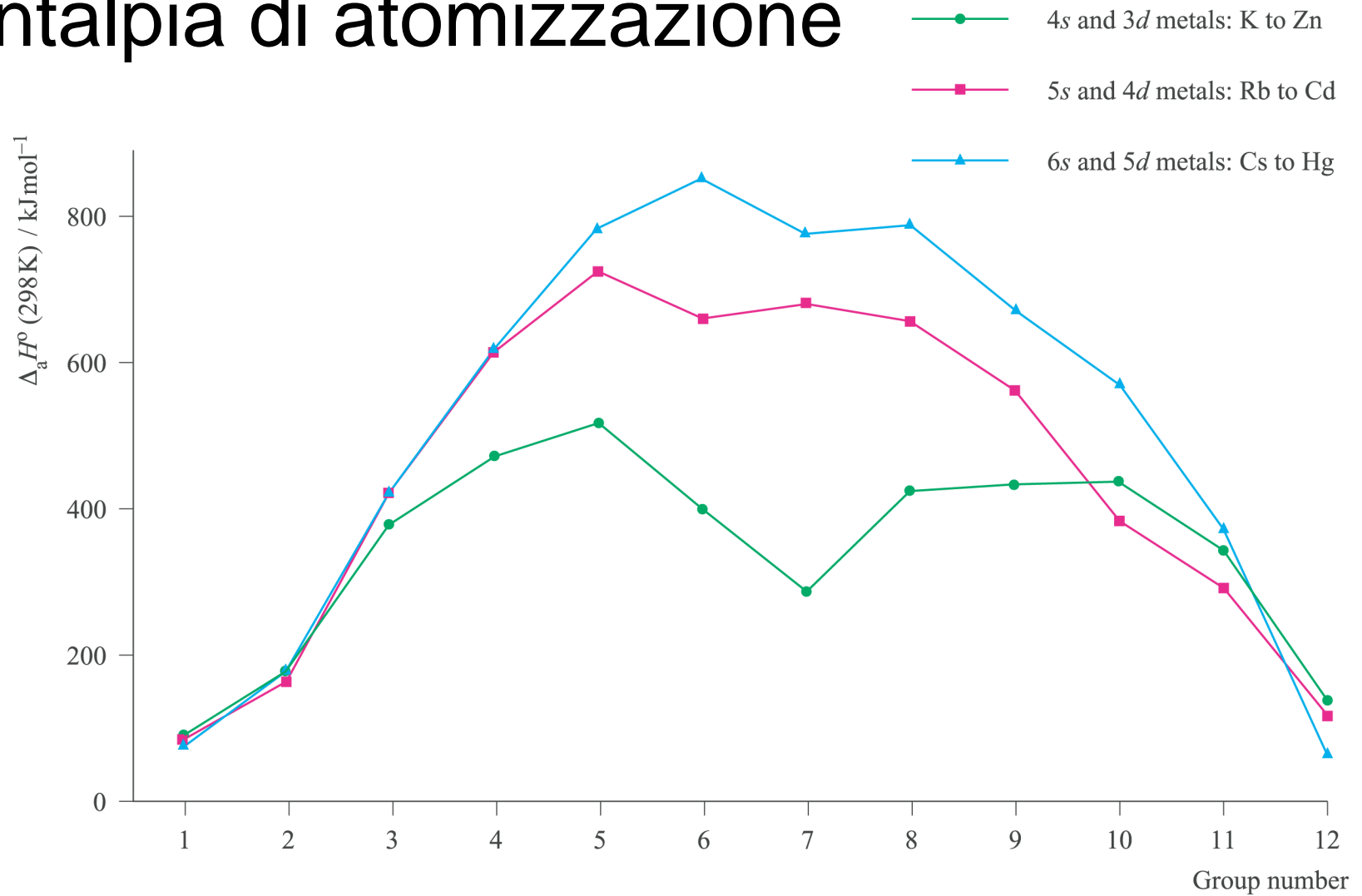
# Platinum group metals

<https://www.youtube.com/watch?v=Fg2WzCzKpYU>

# Raggio atomico



# Entalpia di atomizzazione



# Punti di fusione

Melting temperature/°C

3000

2000

1000

0

W 3410°C

Mo

V

Hf

Be

Mg

Ba

Li

Na

K

Zn

Rb

Sn

Cs

Bi

10

30

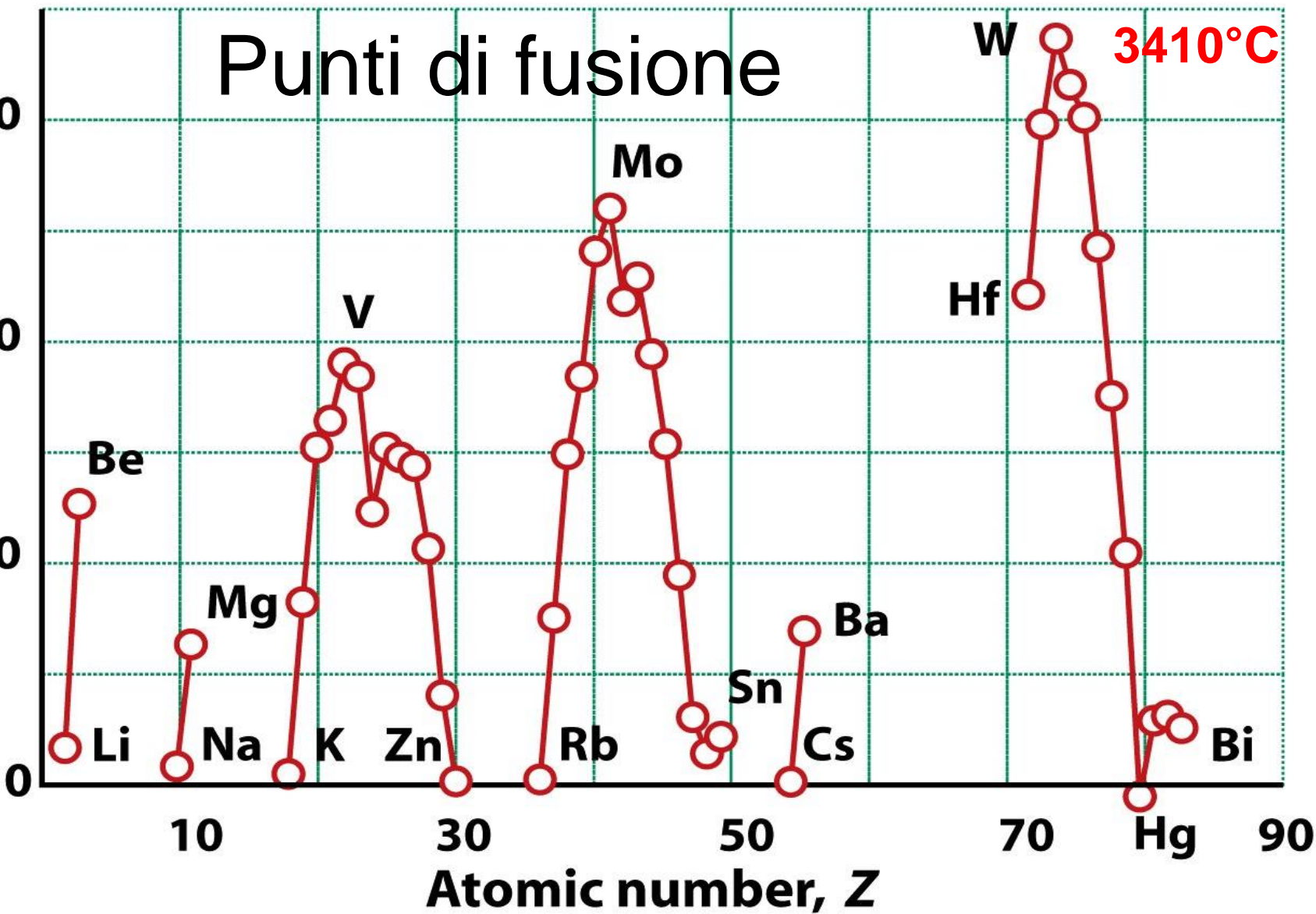
50

70

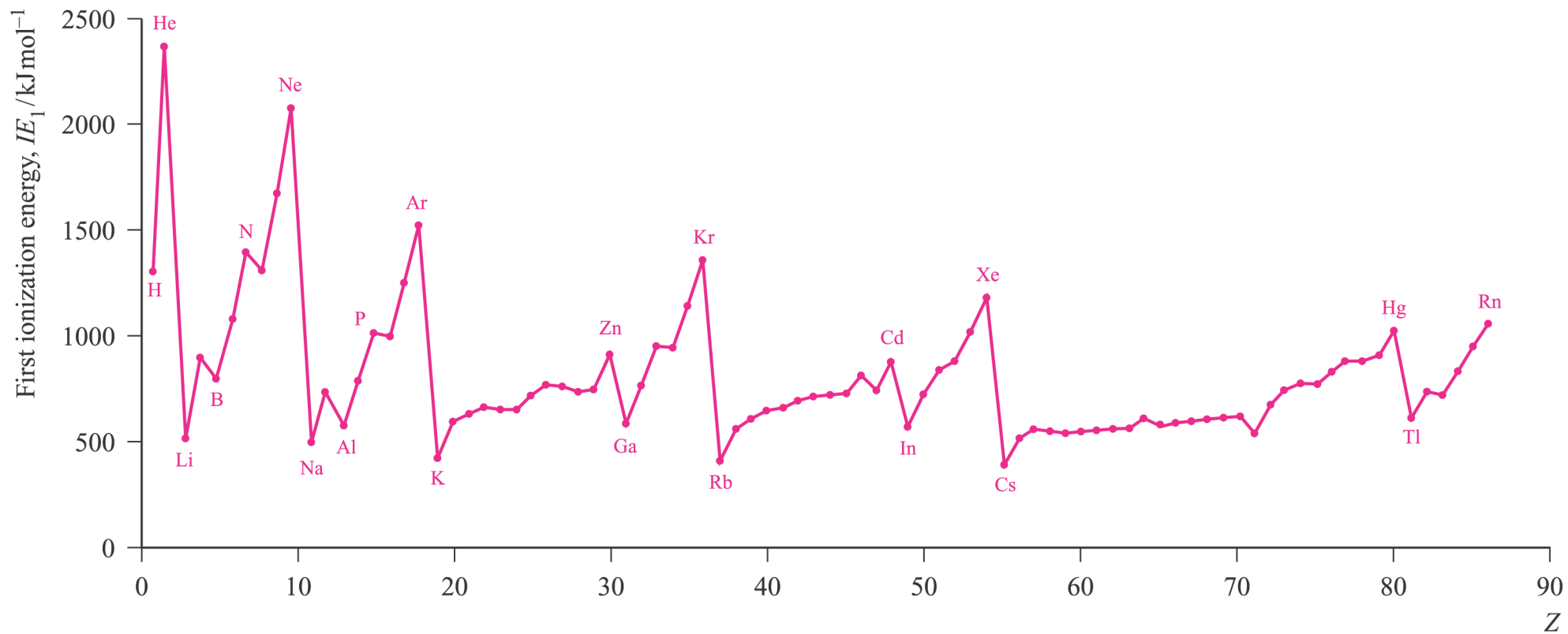
Hg

90

Atomic number, Z



# Energia di ionizzazione





# Potenziali standard di semireazione

Reduction half-equation	$E^0 / \text{V}$
$\text{Ca}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Ca}(\text{s})$	-2.87
$\text{Ti}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Ti}(\text{s})$	-1.63
$\text{V}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{V}(\text{s})$	-1.18
$\text{Cr}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Cr}(\text{s})$	-0.91
$\text{Mn}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Mn}(\text{s})$	-1.19
$\text{Fe}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Fe}(\text{s})$	-0.44
$\text{Co}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Co}(\text{s})$	-0.28
$\text{Ni}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Ni}(\text{s})$	-0.25
$\text{Cu}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Cu}(\text{s})$	+0.34
$\text{Zn}^{2+}(\text{aq}) + 2\text{e}^{-} \rightleftharpoons \text{Zn}(\text{s})$	-0.76

---

Colour of light <i>absorbed</i>	Approximate wavelength ranges / nm	Corresponding wavenumbers (approximate values) / $\text{cm}^{-1}$	Colour of light <i>transmitted</i> , i.e. complementary colour of the absorbed light
Red	700–620	14 300–16 100	Green
Orange	620–580	16 100–17 200	Blue
Yellow	580–560	17 200–17 900	Violet
Green	560–490	17 900–20 400	Red
Blue	490–430	20 400–23 250	Orange
Violet	430–380	23 250–26 300	Yellow

† When an electronic spectrum exhibits more than one absorption in the visible region, the simplicity of the colour wheel does not hold.

$$40 \text{ kcal (167 kJ)} \div 72 \text{ kcal (300 kJ)}$$

Colour  
of light  
*absorbed*

In a 'colour wheel'<sup>†</sup>  
representation,  
complementary colours  
are in opposite sectors

Red  
Orange  
Yellow  
Green  
Blue  
Violet



---

<sup>†</sup> When an electronic spectrum exhibits more than one absorption in the visible region, the simplicity of the colour wheel does not hold.

# Stati di ossidazione dei metalli del blocco d, prima serie

Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
	0	0	0	0	0	0	0	[0]	
		1	1	1	1	1	1	<b>1</b>	[1]
	2	2	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>3</b>	3	<b>3</b>	<b>3</b>	3	<b>3</b>	<b>3</b>	3	3	
	<b>4</b>	<b>4</b>	4	4	4	4	4	[4]	
		<b>5</b>	5	5					
			<b>6</b>	6	6				
				<b>7</b>					

# Stati di ossidazione dei metalli del blocco d, seconda serie

---

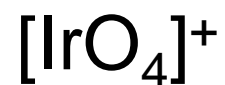
Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd
			0	0	0	0	0		
				1		1		<b>1</b>	[1]
	2	2	2	[2]	2	2	<b>2</b>	2	<b>2</b>
<b>3</b>	3	3	3	3	<b>3</b>	<b>3</b>		3	
	<b>4</b>	4	4	<b>4</b>	4	4	4		
		<b>5</b>	5	<b>5</b>	5	5			
			<b>6</b>	6	6	6			
				<b>7</b>	7				
					8				

# Stati di ossidazione dei metalli del blocco d, terza serie

---


La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg
			0	0	0	0	0	[0]	
				1		1		1	<b>1</b>
	2	2	2	2	2	2	<b>2</b>	[2]	<b>2</b>
<b>3</b>	3	3	3	<b>3</b>	3	<b>3</b>		<b>3</b>	
	<b>4</b>	4	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>		
		<b>5</b>	<b>5</b>	<b>5</b>	5	5	5	5	
			<b>6</b>	<b>6</b>	6	6	6		
				<b>7</b>	7				
					8				

---

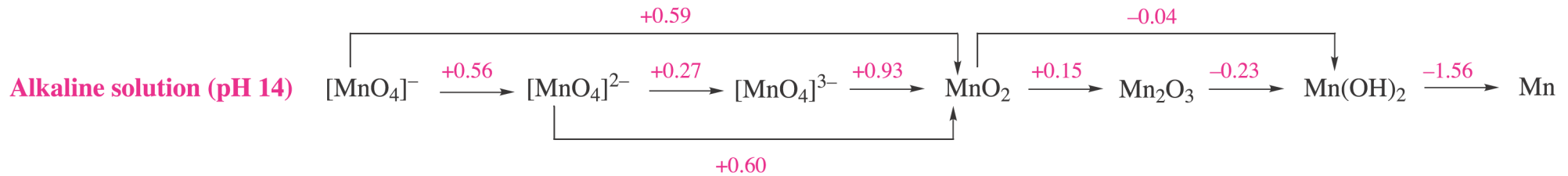
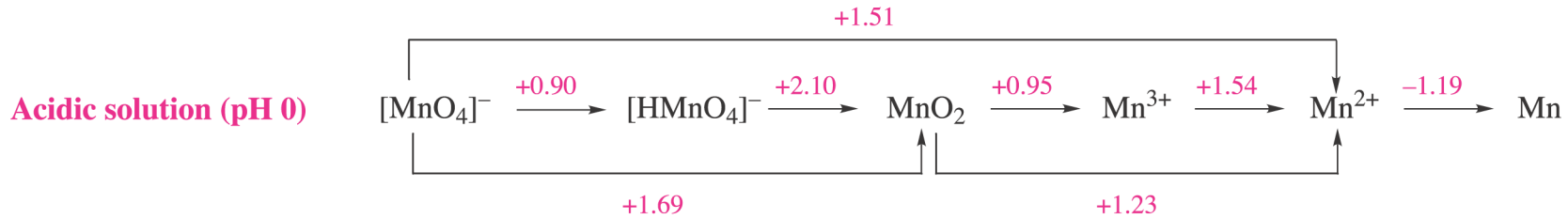


# Identification of an iridium-containing compound with a formal oxidation state of IX

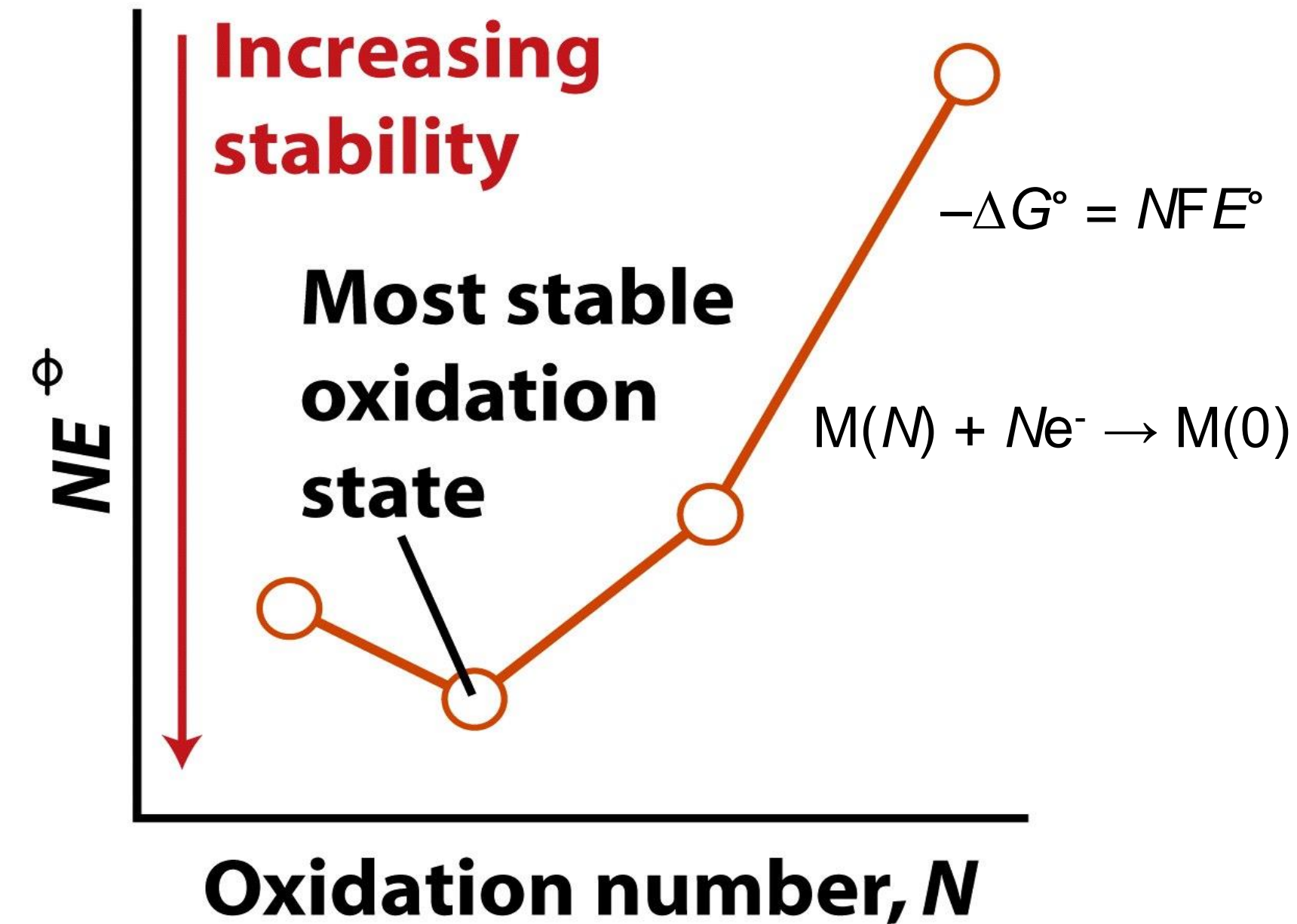
Guanjun Wang, Mingfei Zhou , James T. Goettel, Gary J. Schrobilgen , Jing Su, Jun Li, Tobias Schlöder & Sebastian Riedel 

*Nature* **514**, 475–477 (23 October 2014) | [Download Citation](#) 

# Diagrammi di Latimer

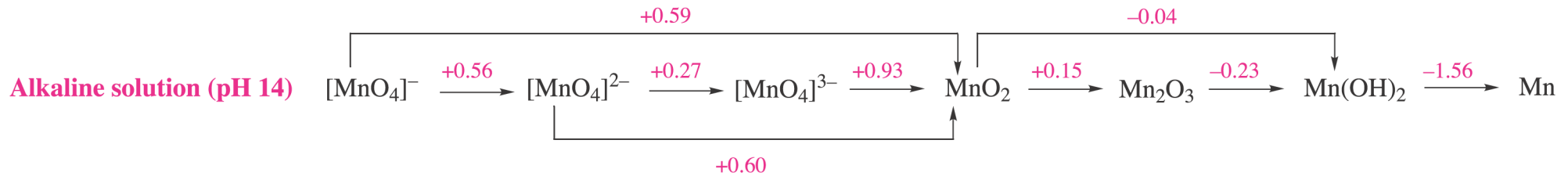
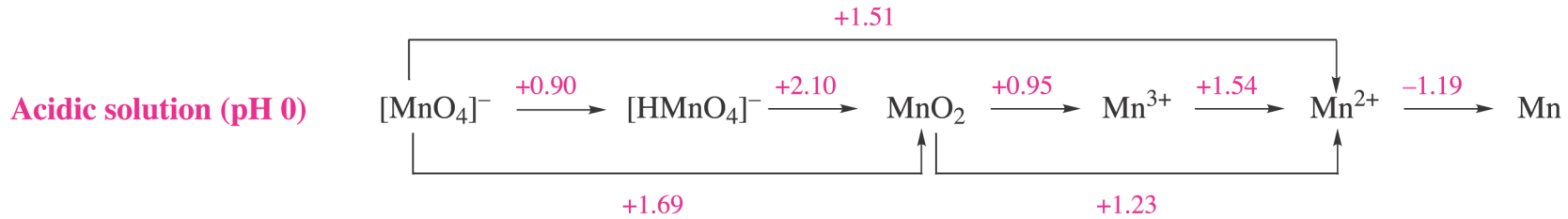


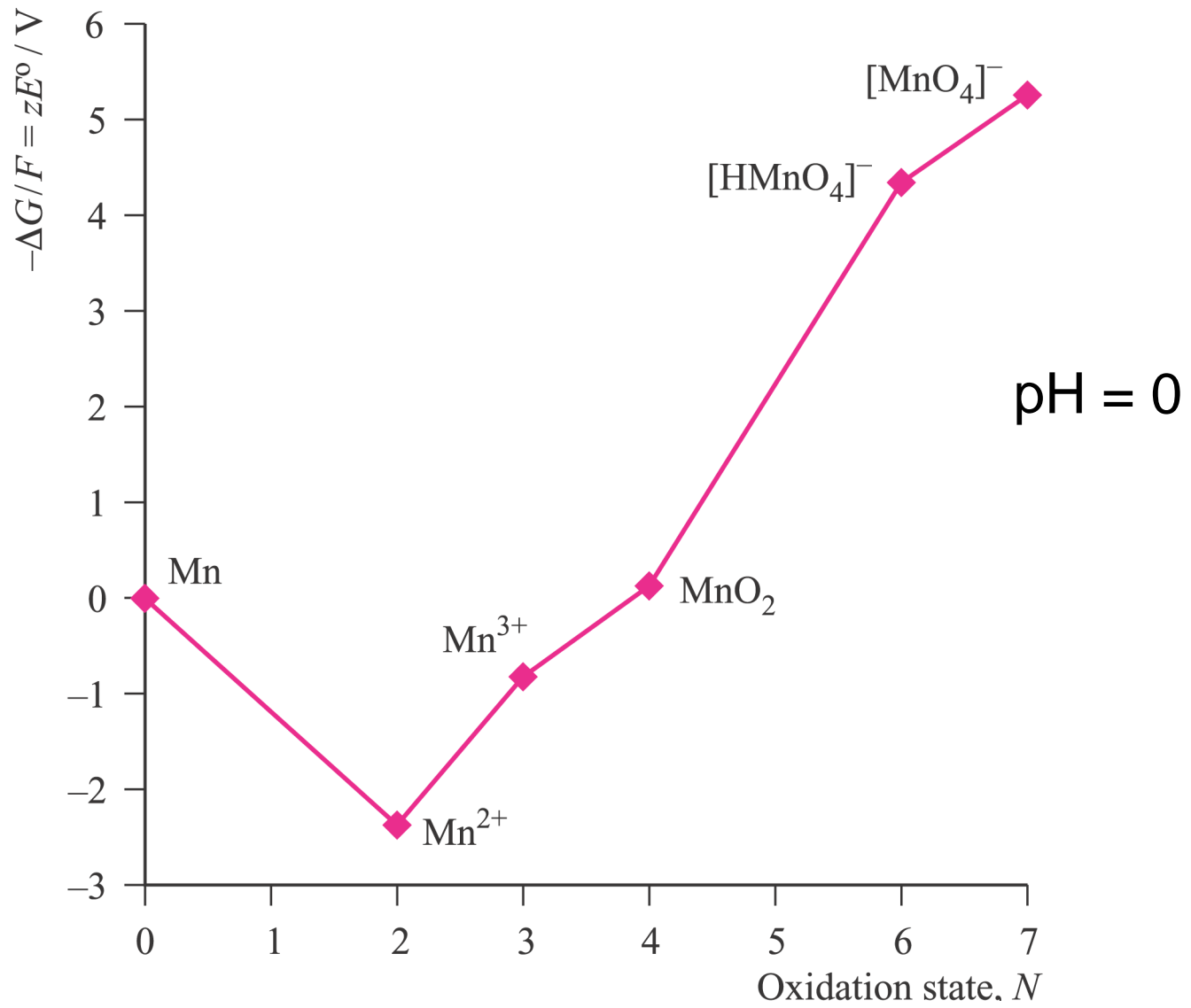


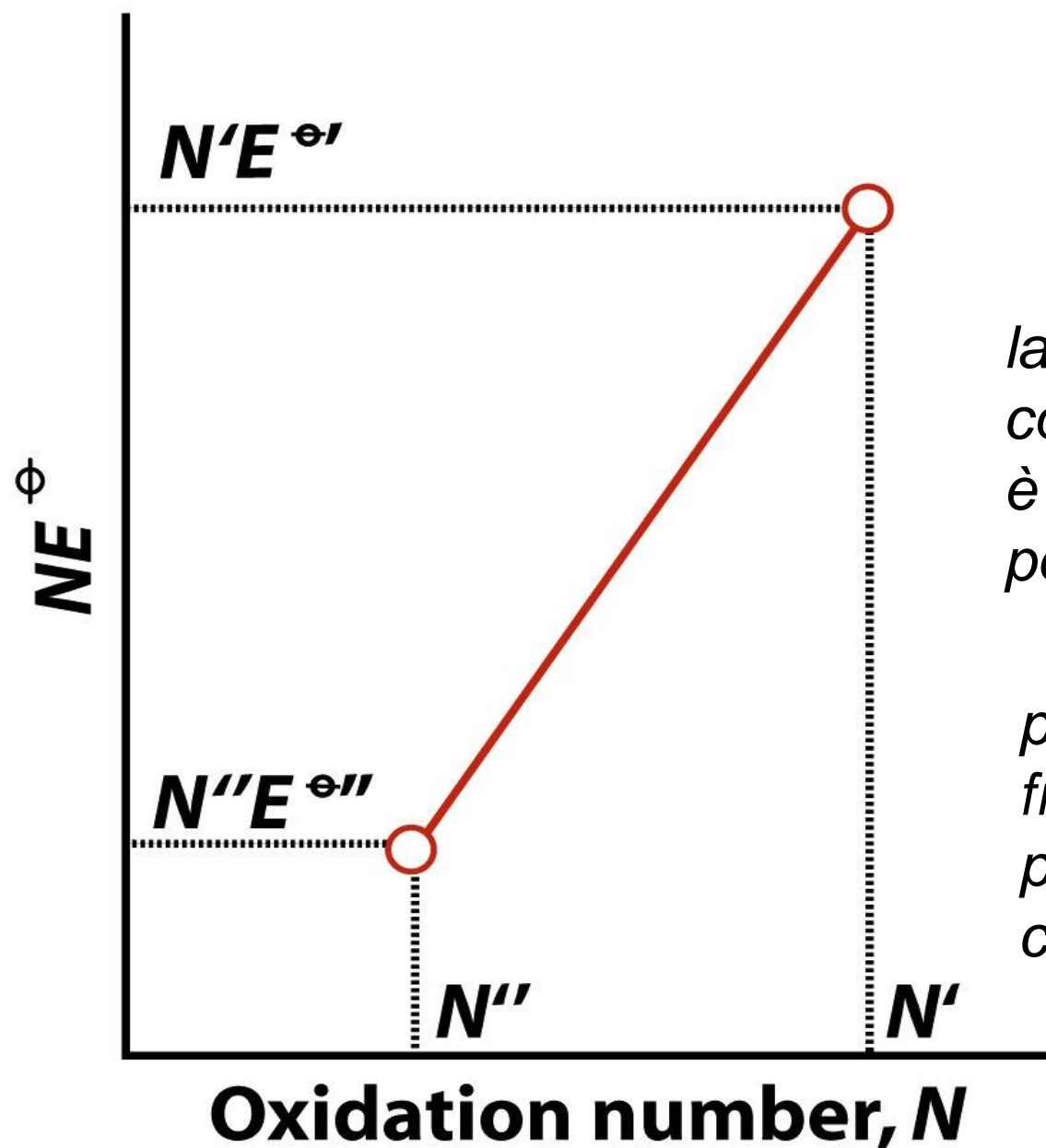


**Diagrammi di Frost - Ebsworth**

# Diagrammi di Latimer

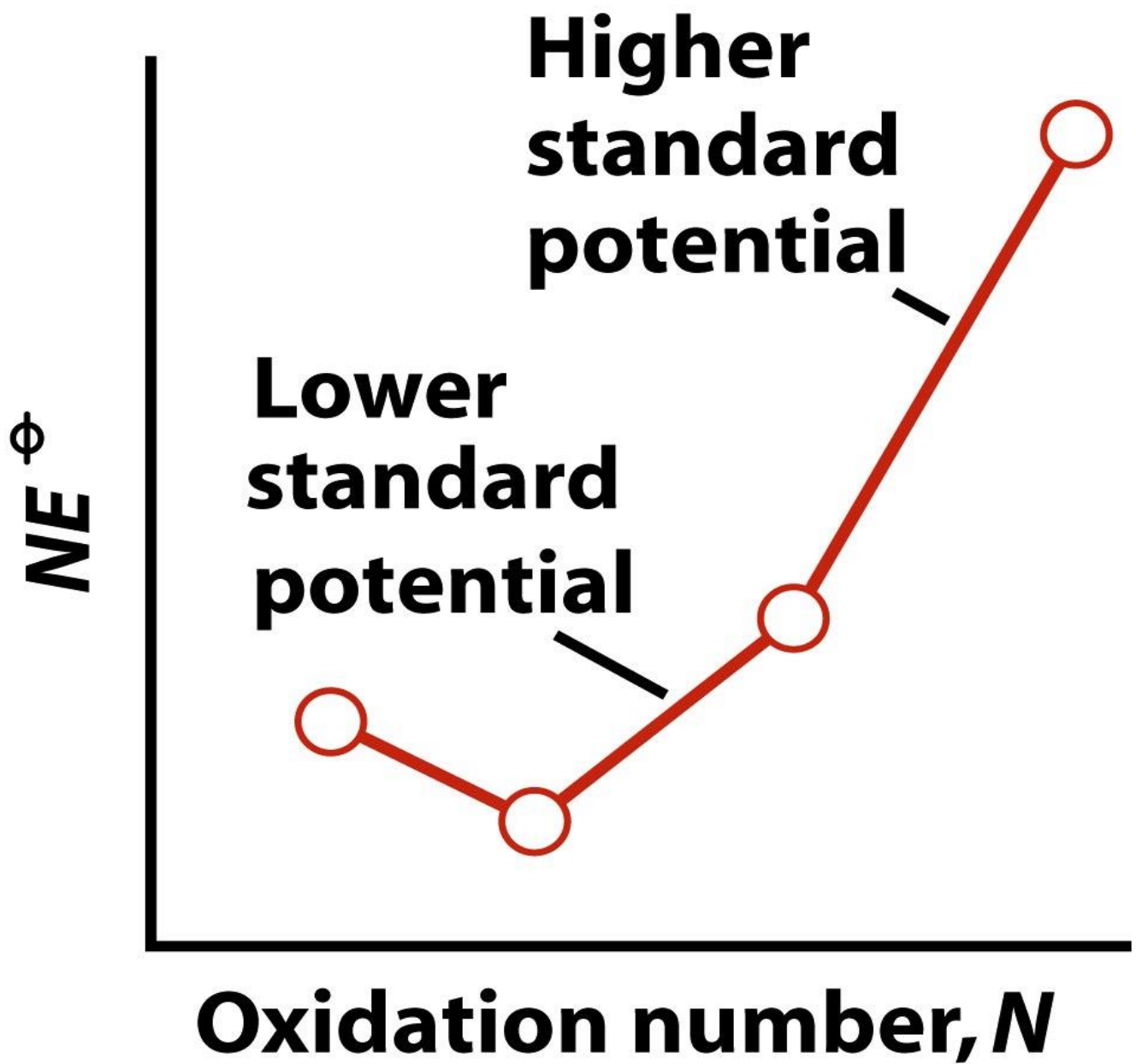


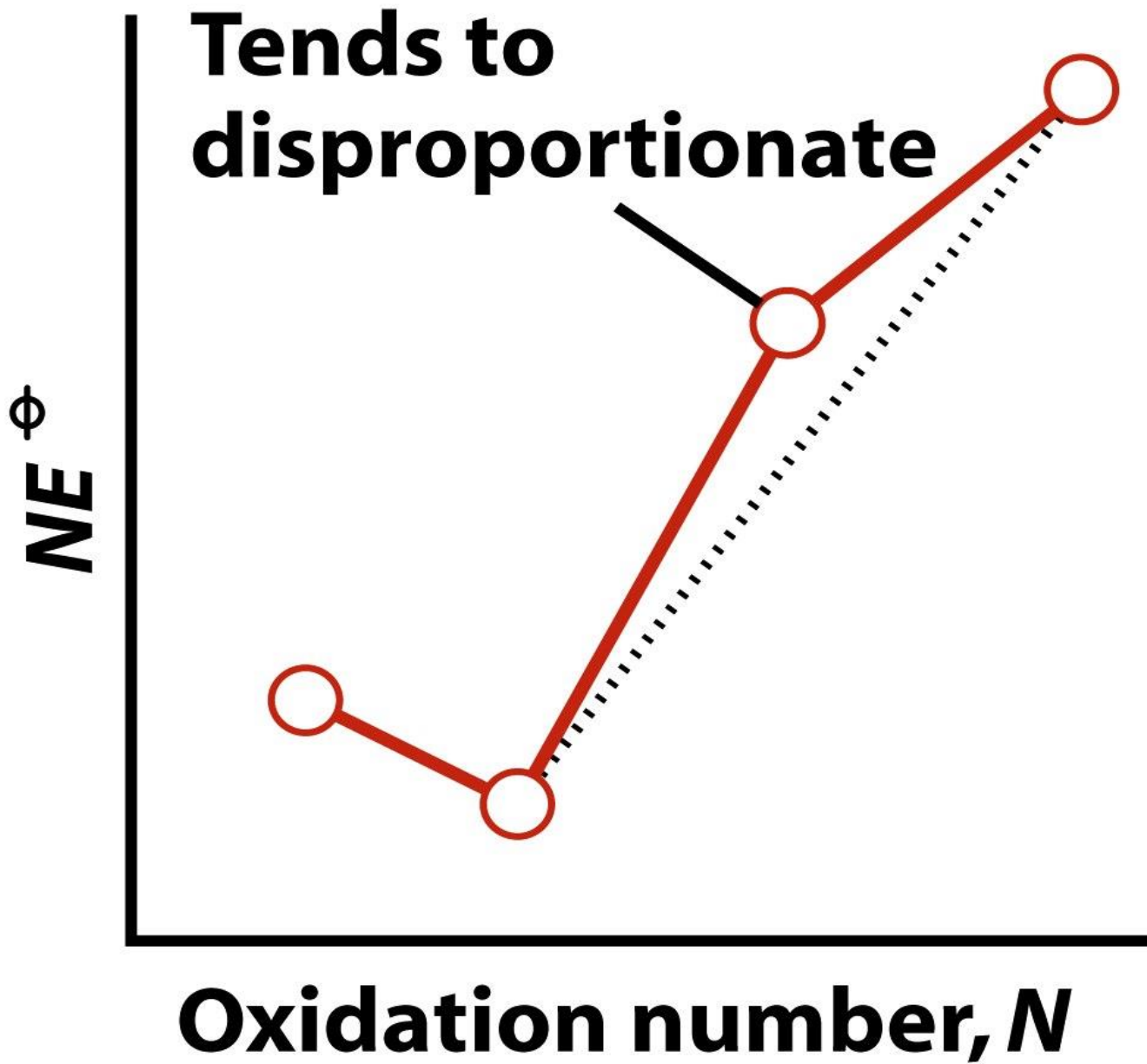


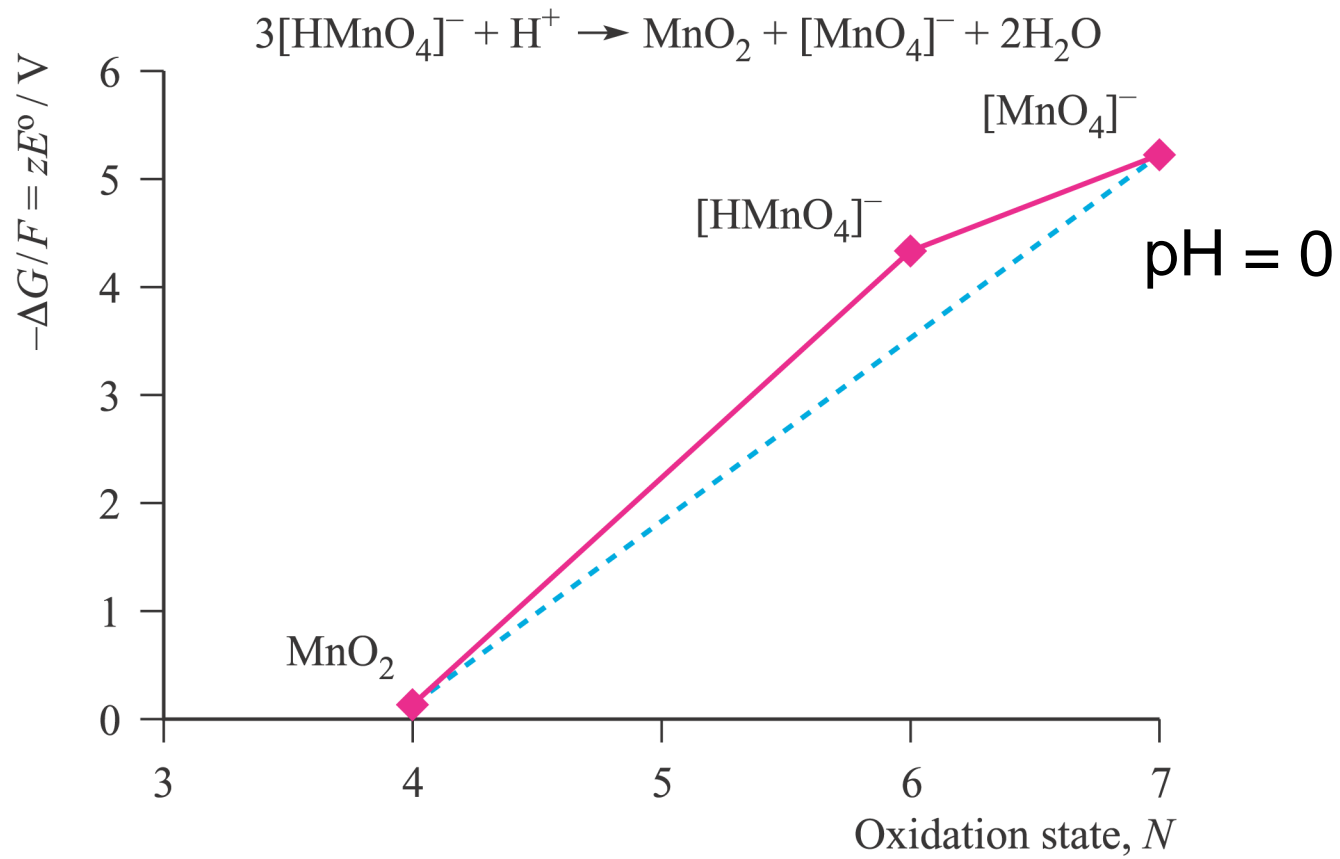


*la pendenza della linea che congiunge due punti qualsiasi è uguale al potenziale standard per quella coppia*

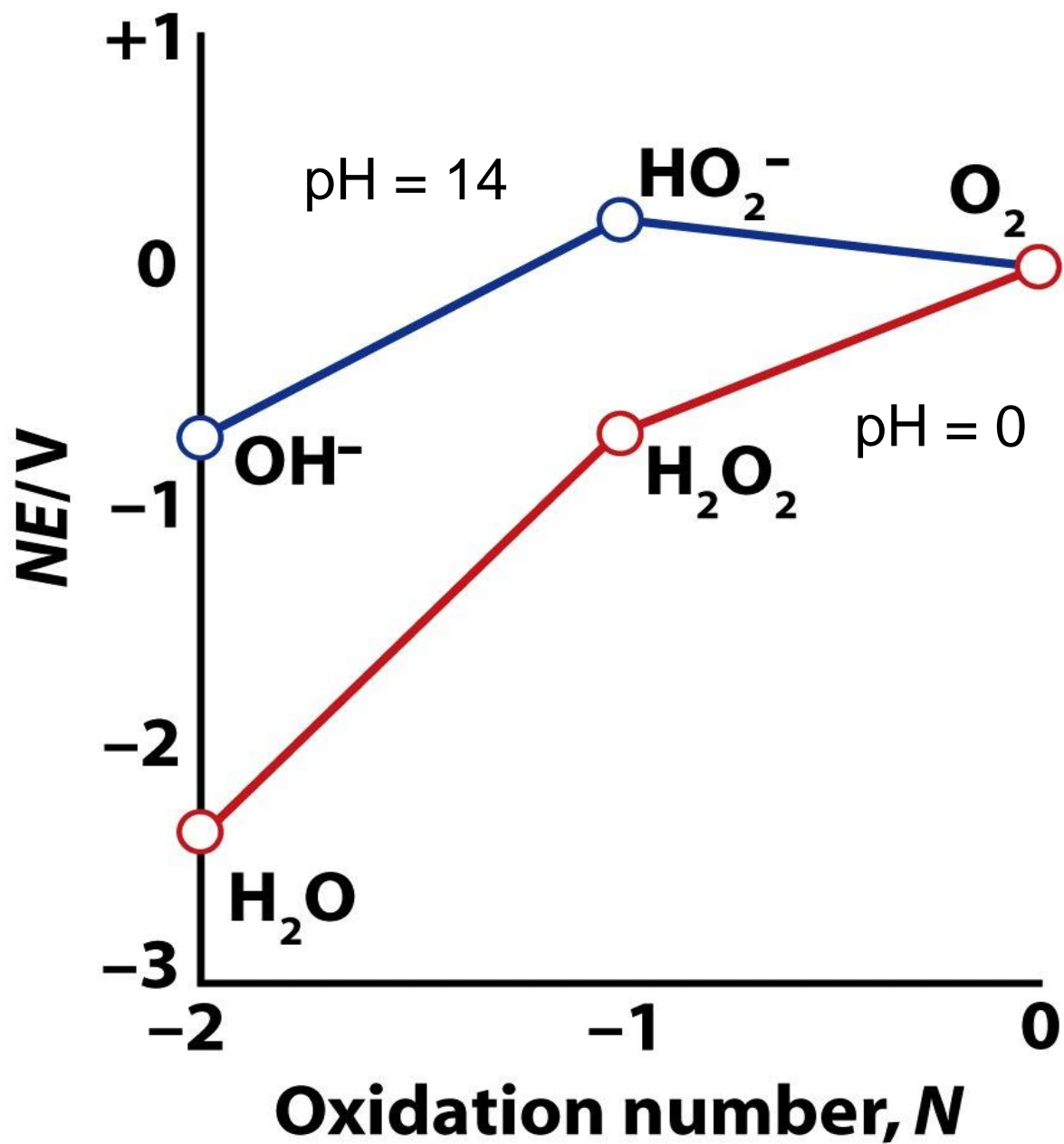
*più ripida è la congiungente fra due punti nel diagramma e più alto è il potenziale della coppia corrispondente*



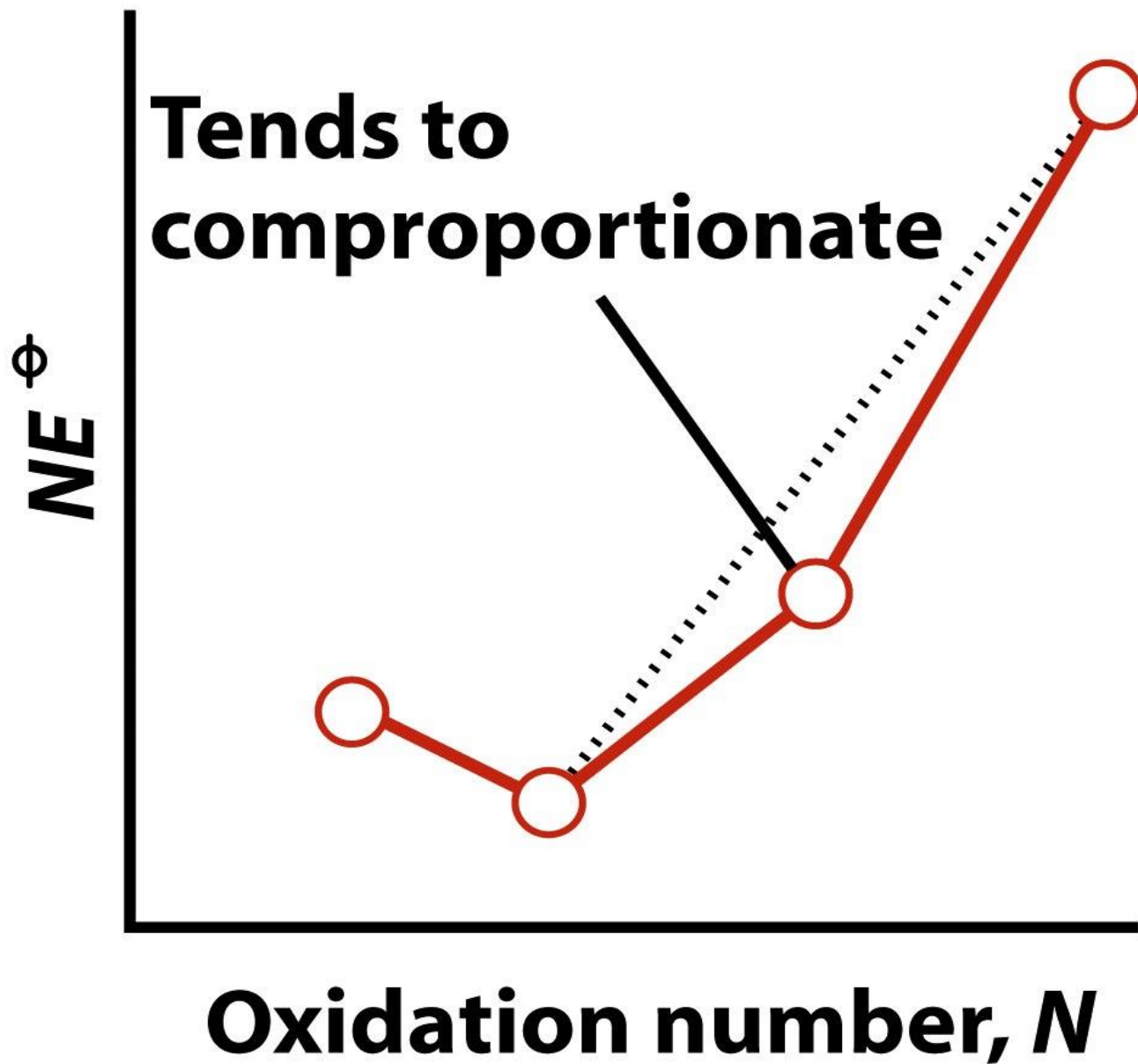


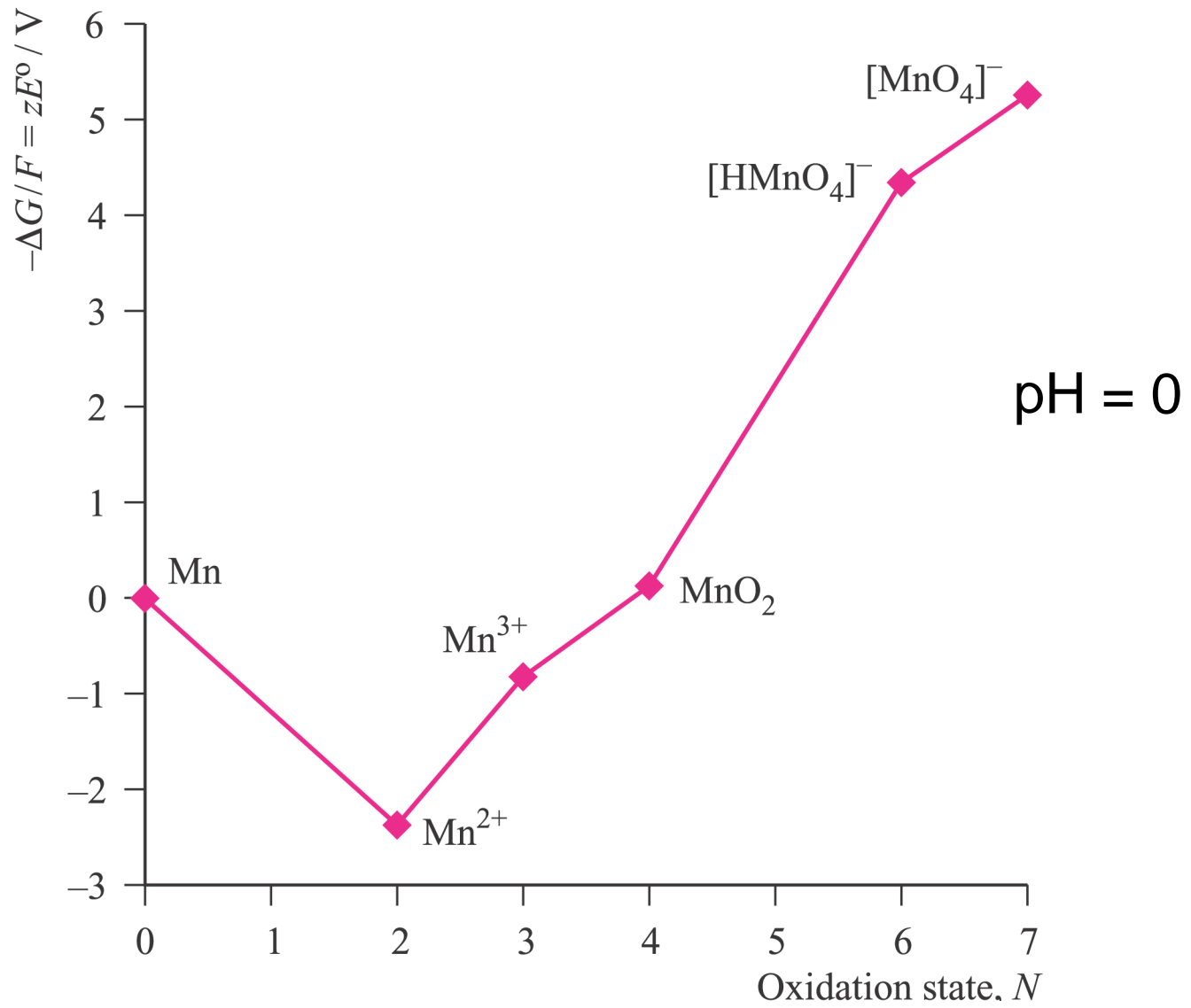


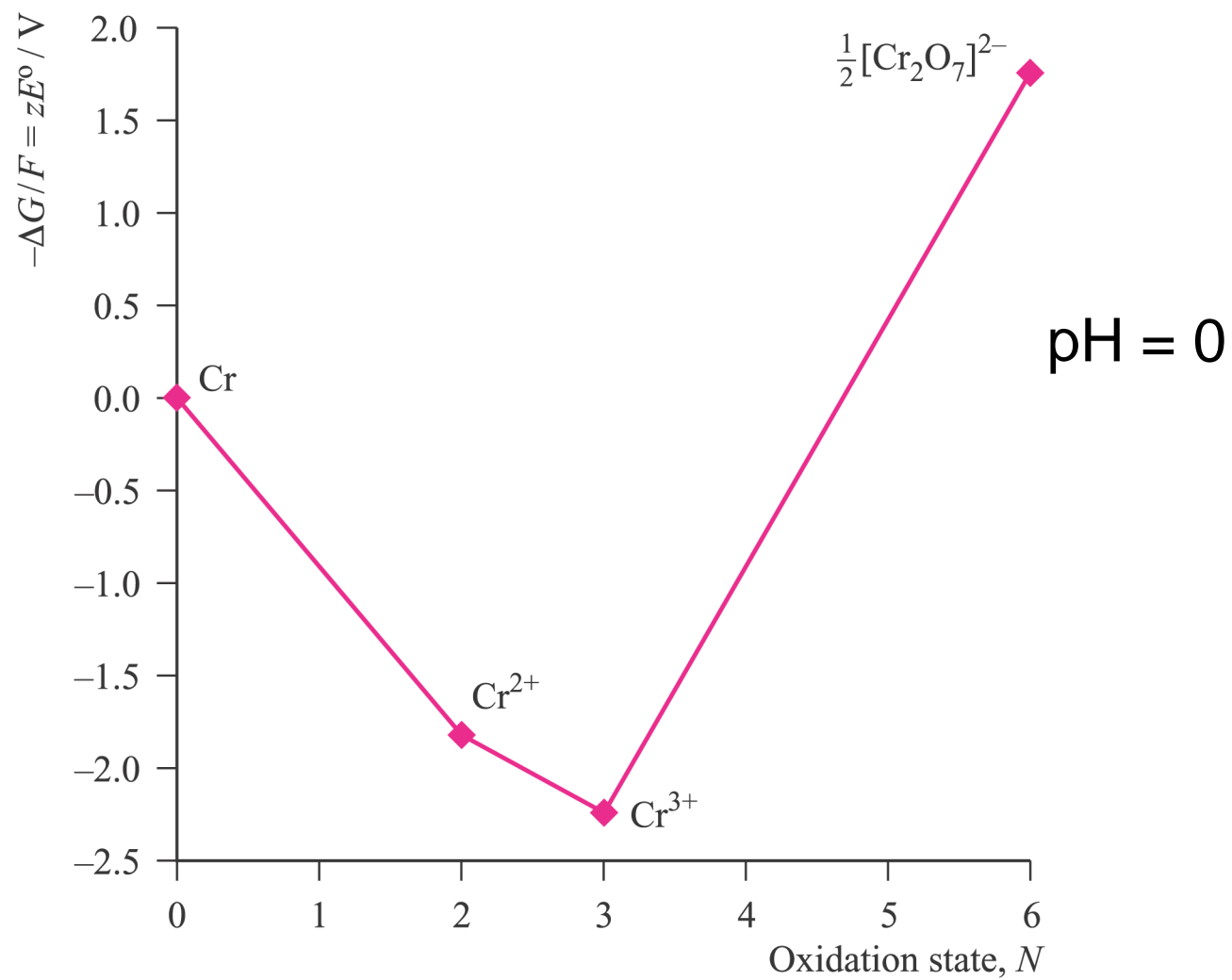
(b)











(a)

[http://www.periodicvideos.com/videos/mv\\_chromium\\_trioxide.htm](http://www.periodicvideos.com/videos/mv_chromium_trioxide.htm)

