Appendix 5

Decay-level schemes

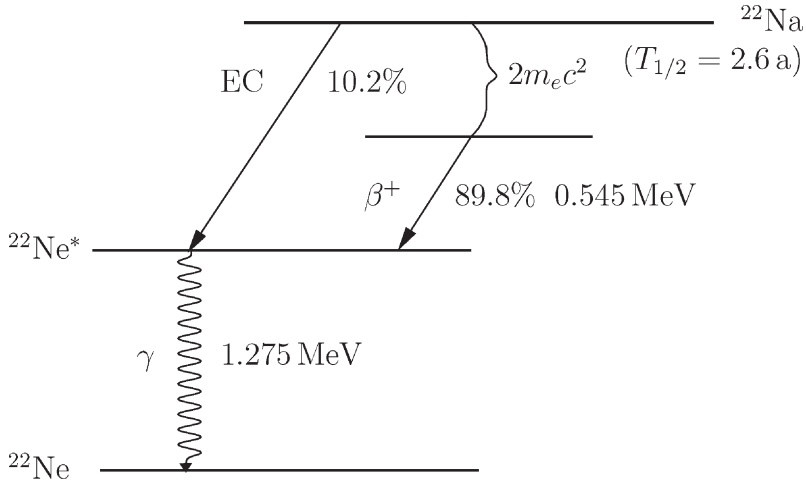
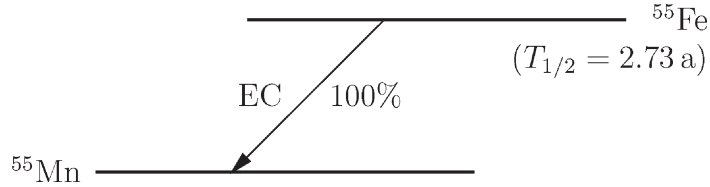


Fig. A5.1. Decay-level scheme of ^{22}Na.



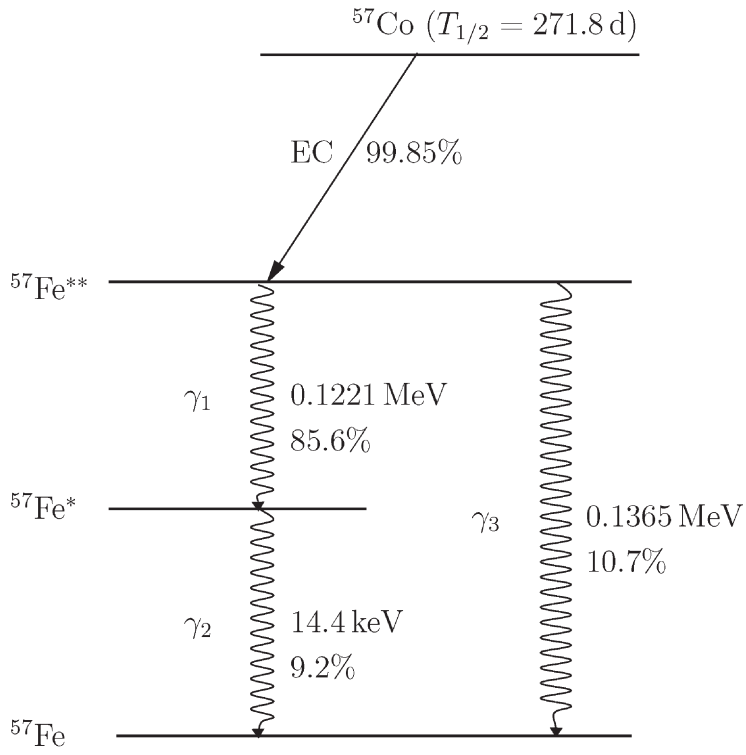
Characteristic X rays from ^{55}Mn:

$K_\alpha = 5.9\,\mathrm{keV}$

$K_\beta = 6.5\,\mathrm{keV}$

Fig. A5.2. Decay-level scheme of ^{55}Fe.

https://doi.org/10.1017/9781009401531.027 Published online by Cambridge University Press



Conversion electrons:

$\mathrm{K}(\gamma_1) = 0.115\,\mathrm{MeV}$
$\mathrm{L}(\gamma_1) = 0.121\,\mathrm{MeV}$
$\mathrm{K}(\gamma_2) = 0.0073\,\mathrm{MeV}$
$\mathrm{L}(\gamma_2) = 0.0136\,\mathrm{MeV}$
$\mathrm{K}(\gamma_3) = 0.1294\,\mathrm{MeV}$
$\mathrm{L}(\gamma_3) = 0.1341\,\mathrm{MeV}$

Fig. A5.3. Decay-level scheme of ^{57}Co.

https://doi.org/10.1017/9781009401531.027 Published online by Cambridge University Press

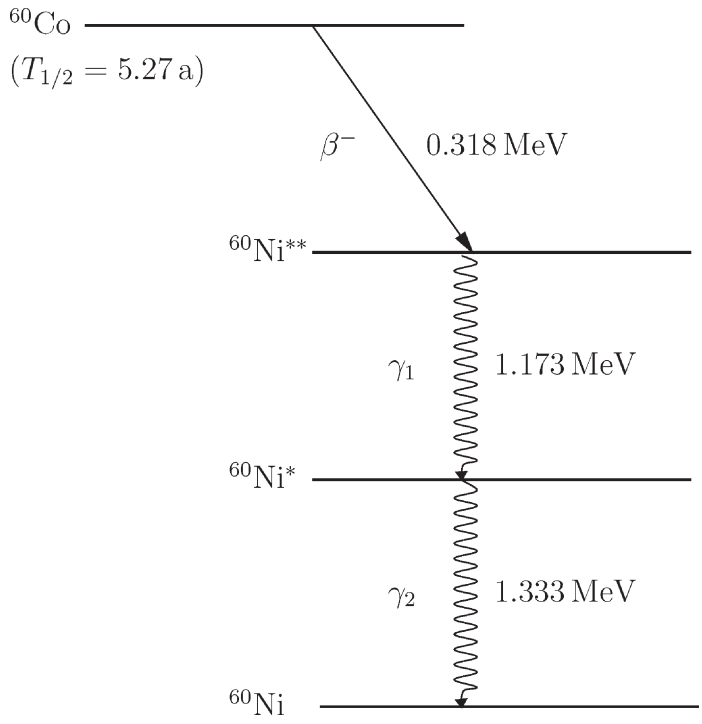


Fig. A5.4. Decay-level scheme of ^{60}Co.

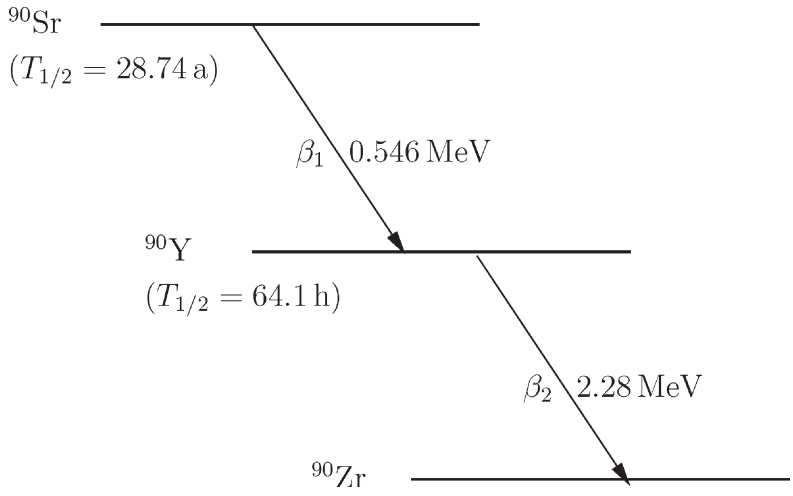


Fig. A5.5. Decay-level scheme of ^{90}Sr.

https://doi.org/10.1017/9781009401531.027 Published online by Cambridge University Press

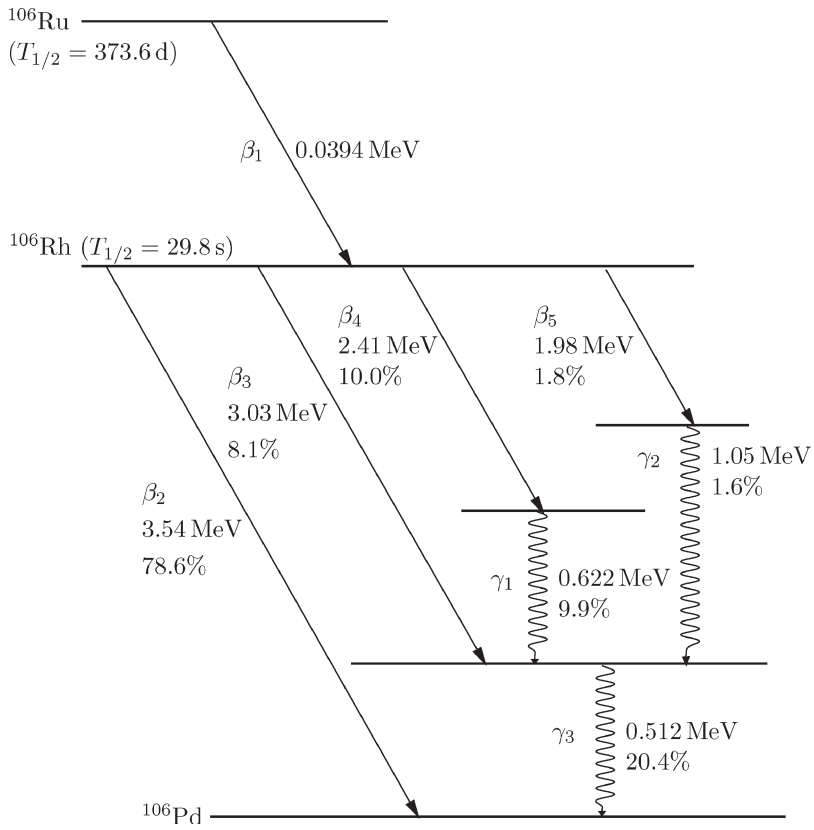
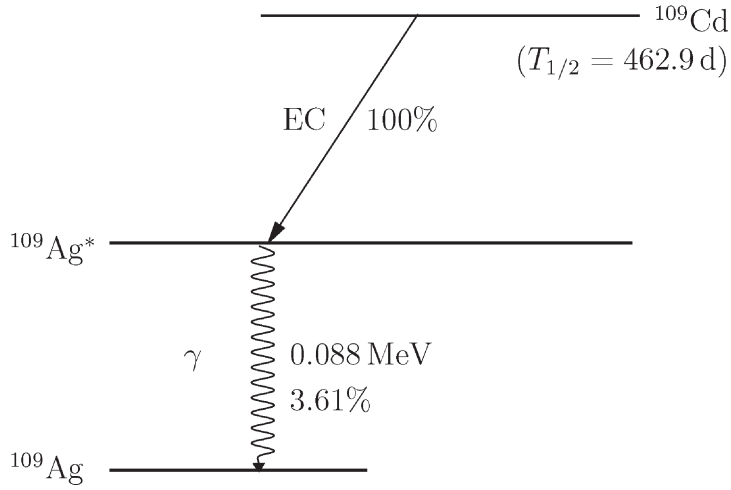


Fig. A5.6. Decay-level scheme of ^{106}Ru.

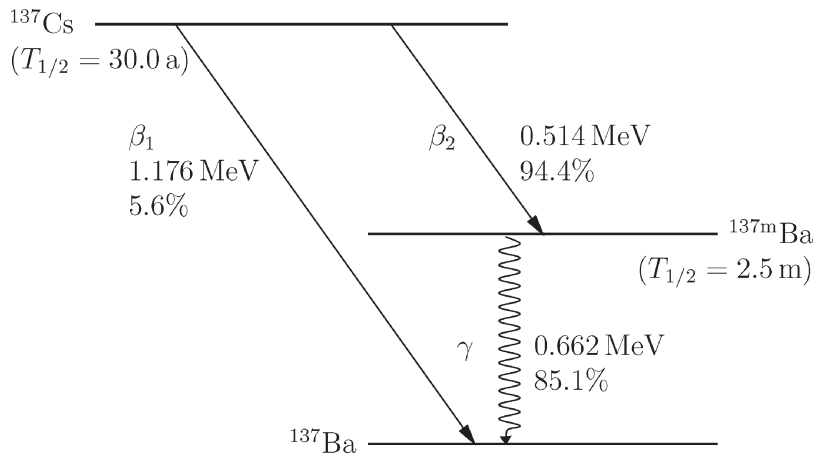
https://doi.org/10.1017/9781009401531.027 Published online by Cambridge University Press



Conversion electrons:
K (γ) = 0.0625 MeV
L(γ) = 0.0842 MeV
M (γ) = 0.0873 MeV

K_α X rays: 0.022 MeV
K_β X rays: 0.025 MeV

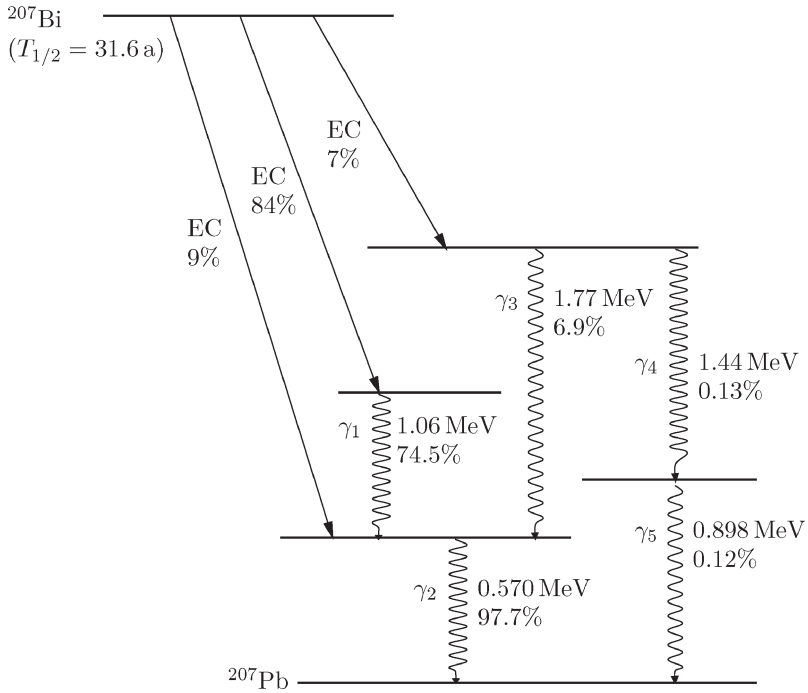
Fig. A5.7. Decay-level scheme of ^{109}Cd.



Conversion electrons:
K (γ) = 0.624 MeV
L(γ) = 0.656 MeV

Fig. A5.8. Decay-level scheme of ^{137}Cs.

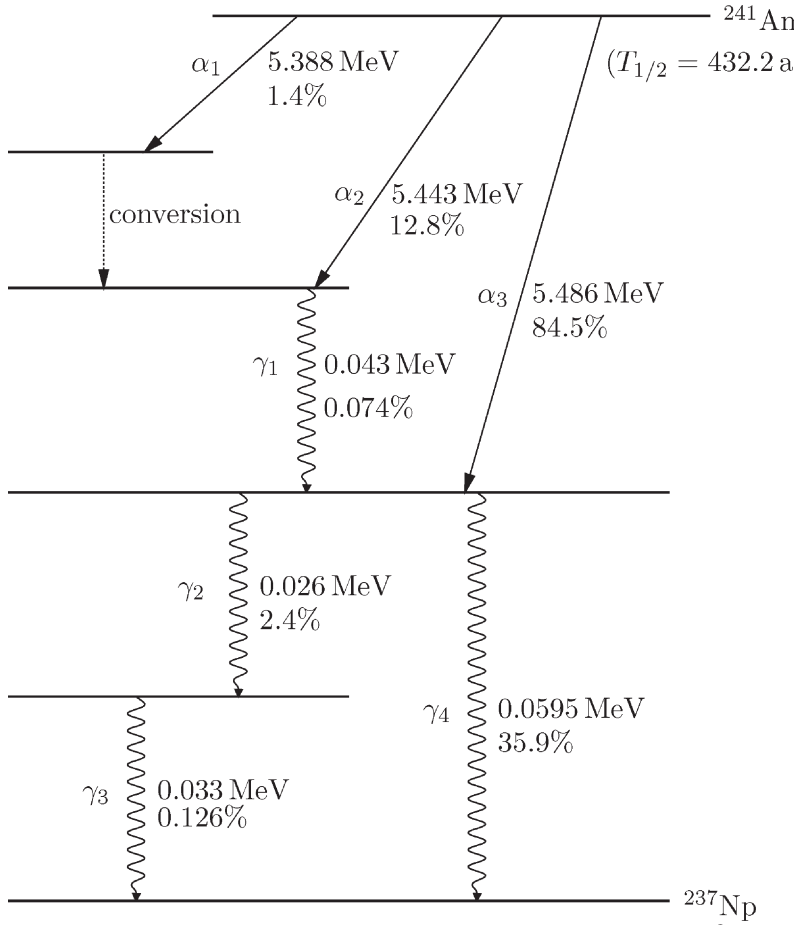
https://doi.org/10.1017/9781009401531.027 Published online by Cambridge University Press



Conversion electrons:
K (γ_1) = 0.976 MeV
L (γ_1) = 1.048 MeV
K (γ_2) = 0.482 MeV
L (γ_2) = 0.554 MeV
K (γ_3) = 1.682 MeV
L (γ_3) = 1.754 MeV
K (γ_4) = 1.352 MeV
L (γ_4) = 1.424 MeV
K (γ_5) = 0.810 MeV
L (γ_5) = 0.882 MeV

Fig. A5.9. Decay-level scheme of ^{207}Bi.

https://doi.org/10.1017/9781009401531.027 Published online by Cambridge University Press



Conversion electrons:

K (γ_i) kinematically not possible
L (γ_1) = 0.0210 MeV
L (γ_2) = 0.0039 MeV
L (γ_3) = 0.0108 MeV
L (γ_4) = 0.0371 MeV

Fig. A5.10. Decay-level scheme of ^{241}Am.

https://doi.org/10.1017/9781009401531.027 Published online by Cambridge University Press

Periodic Table of Elements

Group																	
Ia	IIa	IIIb	IVb	Vb	VIb	VIIb	VIIIb	VIIIb	VIIIb	Ib	IIb	IIIa	IVa	Va	VIa	VIIa	VIIIa
1 **H** Hydrogen 1.01																	2 **He** Helium 4.00
3 **Li** Lithium 6.94	4 **Be** Beryllium 9.01											5 **B** Boron 10.81	6 **C** Carbon 12.01	7 **N** Nitrogen 14.01	8 **O** Oxygen 16.00	9 **F** Fluorine 19.00	10 **Ne** Neon 20.18
11 **Na** Sodium 22.99	12 **Mg** Magnesium 24.31											13 **Al** Aluminium 26.98	14 **Si** Silicon 28.09	15 **P** Phosphorus 30.97	16 **S** Sulfur 32.07	17 **Cl** Chlorine 35.45	18 **Ar** Argon 39.95
19 **K** Potassium 39.10	20 **Ca** Calcium 40.08	21 **Sc** Scandium 44.96	22 **Ti** Titanium 47.87	23 **V** Vanadium 50.94	24 **Cr** Chromium 52.00	25 **Mn** Manganese 54.94	26 **Fe** Iron 55.85	27 **Co** Cobalt 58.93	28 **Ni** Nickel 58.69	29 **Cu** Copper 63.55	30 **Zn** Zinc 65.39	31 **Ga** Gallium 69.72	32 **Ge** Germanium 72.64	33 **As** Arsenic 74.92	34 **Se** Selenium 78.96	35 **Br** Bromine 79.90	36 **Kr** Krypton 83.80
37 **Rb** Rubidium 85.47	38 **Sr** Strontium 87.62	39 **Y** Yttrium 88.91	40 **Zr** Zirconium 91.22	41 **Nb** Niobium 92.91	42 **Mo** Molybdenum 95.94	43 **Tc** Technetium 97.91	44 **Ru** Ruthenium 101.07	45 **Rh** Rhodium 102.91	46 **Pd** Palladium 106.42	47 **Ag** Silver 107.87	48 **Cd** Cadmium 112.41	49 **In** Indium 114.82	50 **Sn** Tin 118.71	51 **Sb** Antimony 121.76	52 **Te** Tellurium 127.60	53 **I** Iodine 126.90	54 **Xe** Xenon 131.29
55 **Cs** Cesium 132.91	56 **Ba** Barium 137.33	57-71 Lanthanides	72 **Hf** Hafnium 178.49	73 **Ta** Tantalum 180.95	74 **W** Tungsten 183.84	75 **Re** Rhenium 186.21	76 **Os** Osmium 190.23	77 **Ir** Iridium 192.22	78 **Pt** Platinum 195.08	79 **Au** Gold 196.97	80 **Hg** Mercury 200.59	81 **Tl** Thallium 204.38	82 **Pb** Lead 207.20	83 **Bi** Bismuth 208.98	84 **Po** Polonium 208.98	85 **At** Astatine 209.99	86 **Rn** Radon 222.02
87 **Fr** Francium 223.02	88 **Ra** Radium 226.03	89-103 Actinides	104 **Rf** Rutherfordium 261.11	105 **Db** Dubnium 262.11	106 **Sg** Seaborgium 263.12	107 **Bh** Bohrium 262.12	108 **Hs** Hassium 277.15	109 **Mt** Meitnerium 268.14	110 **Ds** Darmstadtium 271.15	111 **Rg** Roentgenium 272.15							

Lanthanide series	57 **La** Lanthanum 138.91	58 **Ce** Cerium 140.12	59 **Pr** Praseodymium 140.91	60 **Nd** Neodymium 144.24	61 **Pm** Promethium 144.91	62 **Sm** Samarium 150.36	63 **Eu** Europium 151.96	64 **Gd** Gadolinium 157.25	65 **Tb** Terbium 158.93	66 **Dy** Dysprosium 162.50	67 **Ho** Holmium 164.93	68 **Er** Erbium 167.26	69 **Tm** Thulium 168.93	70 **Yb** Ytterbium 173.04	71 **Lu** Lutetium 174.97
Actinide series	89 **Ac** Actinium 227.03	90 **Th** Thorium 232.04	91 **Pa** Protactinium 231.04	92 **U** Uranium 238.03	93 **Np** Neptunium 237.05	94 **Pu** Plutonium 244.06	95 **Am** Americium 243.06	96 **Cm** Curium 247.07	97 **Bk** Berkelium 247.07	98 **Cf** Californium 251.08	99 **Es** Einsteinium 252.08	100 **Fm** Fermium 257.09	101 **Md** Mendelevium 258.10	102 **No** Nobelium 259.10	103 **Lr** Lawrencium 262.11

For each element the atomic number (top left) and atomic mass (bottom) is given. The atomic mass is weighted by the isotopic abundance in the Earth's crust.

Fig. A5.11. Periodic table of elements.