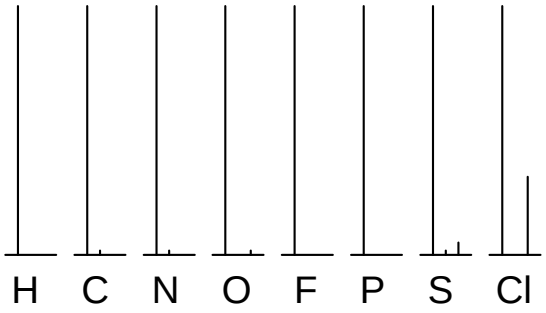
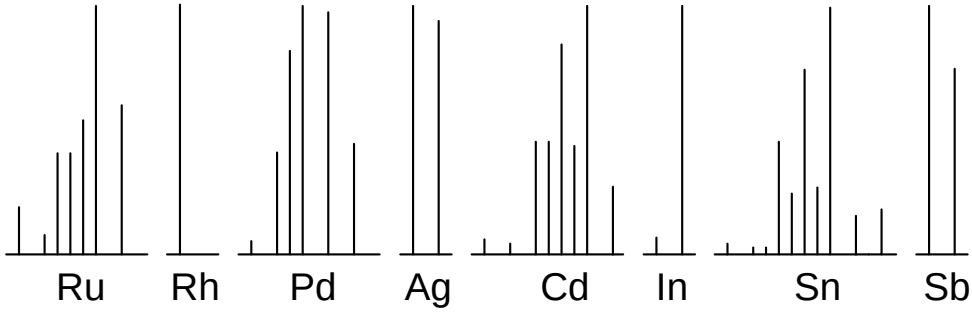


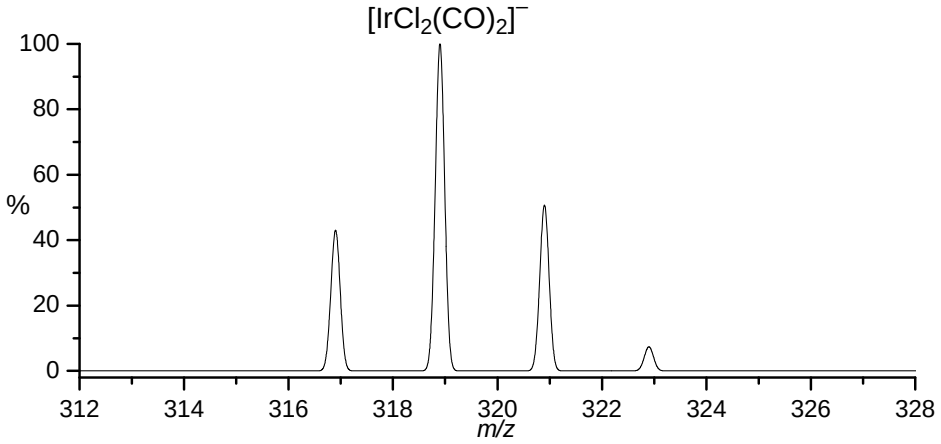
Isotope patterns of elements common in **organic** chemistry: largely **monoisotopic**.



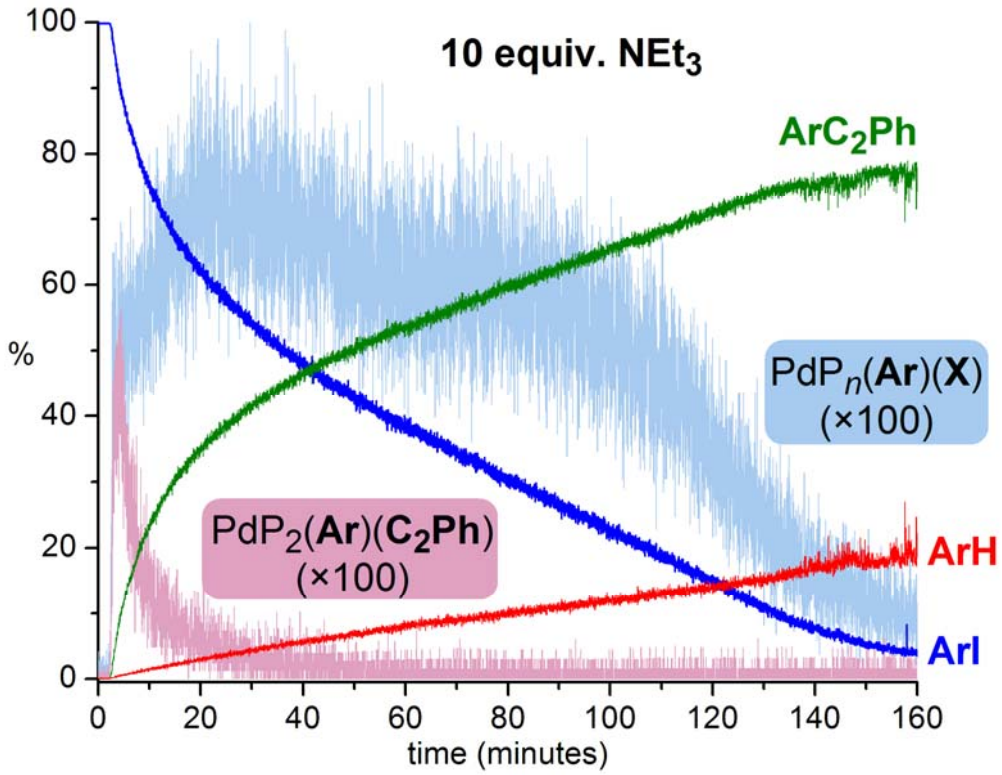
Examples of the diagnostic, **polyisotopic** signatures common for the **transition metals**: the isotope patterns of elements 44-51.

Ion composition	***m/z***	**Fractional abundance**		**Rel. abundance**
$^{191}Ir\ ^{35}Cl_2\ (CO)_2$	317	$(0.37)(0.76)^2$	= 0.214	43 %
$^{193}Ir\ ^{35}Cl_2\ (CO)_2$	319	$(0.63)(0.76)^2$	= 0.364	100 %
$^{191}Ir\ ^{35}Cl\ ^{37}Cl\ (CO)_2$		$(0.37)(0.76)(0.24)\ \times 2$*	= 0.135	
$^{193}Ir\ ^{35}Cl\ ^{37}Cl\ (CO)_2$	321	$(0.63)(0.76)(0.24)\ \times 2$*	= 0.230	50 %
$^{191}Ir\ ^{37}Cl_2\ (CO)_2$		$(0.37)(0.24)^2$	= 0.021	
$^{193}Ir\ ^{37}Cl_2\ (CO)_2$	323	$(0.63)(0.24)^2$	= 0.036	7 %

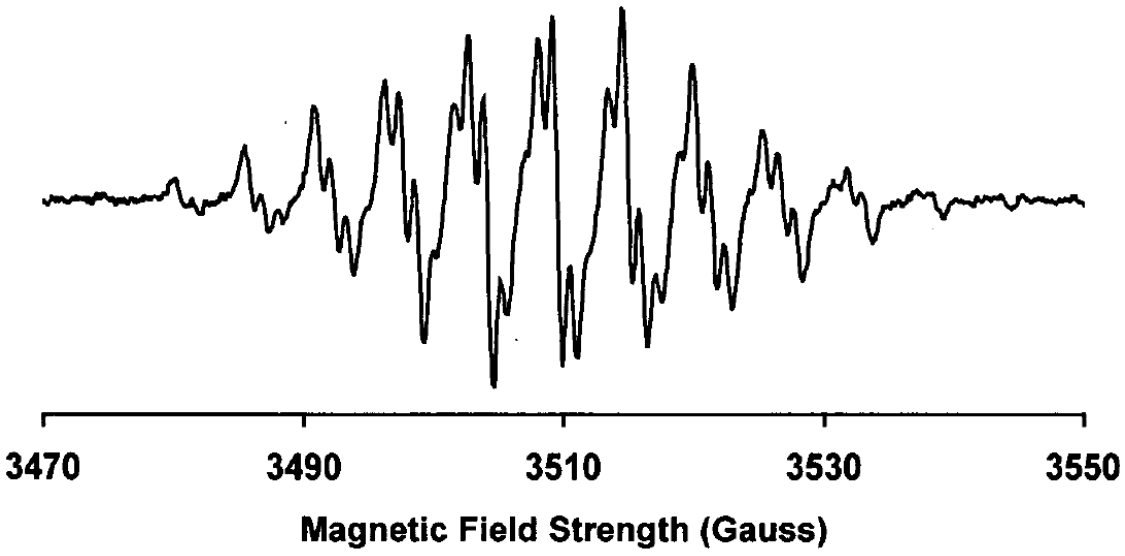
* ×2 because the ion intensity is made up of contributions from $^{35}Cl\ ^{37}Cl$ and $^{37}Cl\ ^{35}Cl$.



Calculated isotope pattern of $[IrCl_2(CO)_2]^-$.



ESI-MS intensity data over time for all key species containing Ar = $[p\text{-}C_6H_4CH_2PPh_3]^+$ $[PF_6]^-$ in a copper-free Sonogashira cross-coupling reaction. The intensity of the Pd-containing intermediates (P = PPh_3) has been multiplied by 100.



An **electron paramagnetic resonance** (EPR) spectrum. The technique can reveal information about the symmetry of the complex and how the unpaired electron is delocalised.