Table 1. Physicochemical parameters of group VIII metals determining their reactivity with carbon nanotubes under the electron beam.

Metal	Cohesive energy[32] [kJ mol^{-1}]	M–C σ-bond energy[a)] [kJ mol^{-1}]	M–C π-bond energy[b)] [kJ mol^{-1}]	Stable carbide[33]
Os	1713	1040	84	No
Ru	1142	898	160	No
Fe	898	802	90	Yes

[a)]Calculated for σ-bonding of corresponding metal atoms with a tetra-vacancy defect in a SWNT sidewall; binding energies for mono- and di-vacancy follow the same trend of relative energies;
[b)]Calculated for the concave side of a carbon nanotube.