Electronic Supplementary Material (ESI) for Dalton Transactions.

SUPPLEMENTARY INFORMATIONS

Chemistry of Group 9 Dimetallaborane Analogues of Octaborane(12)

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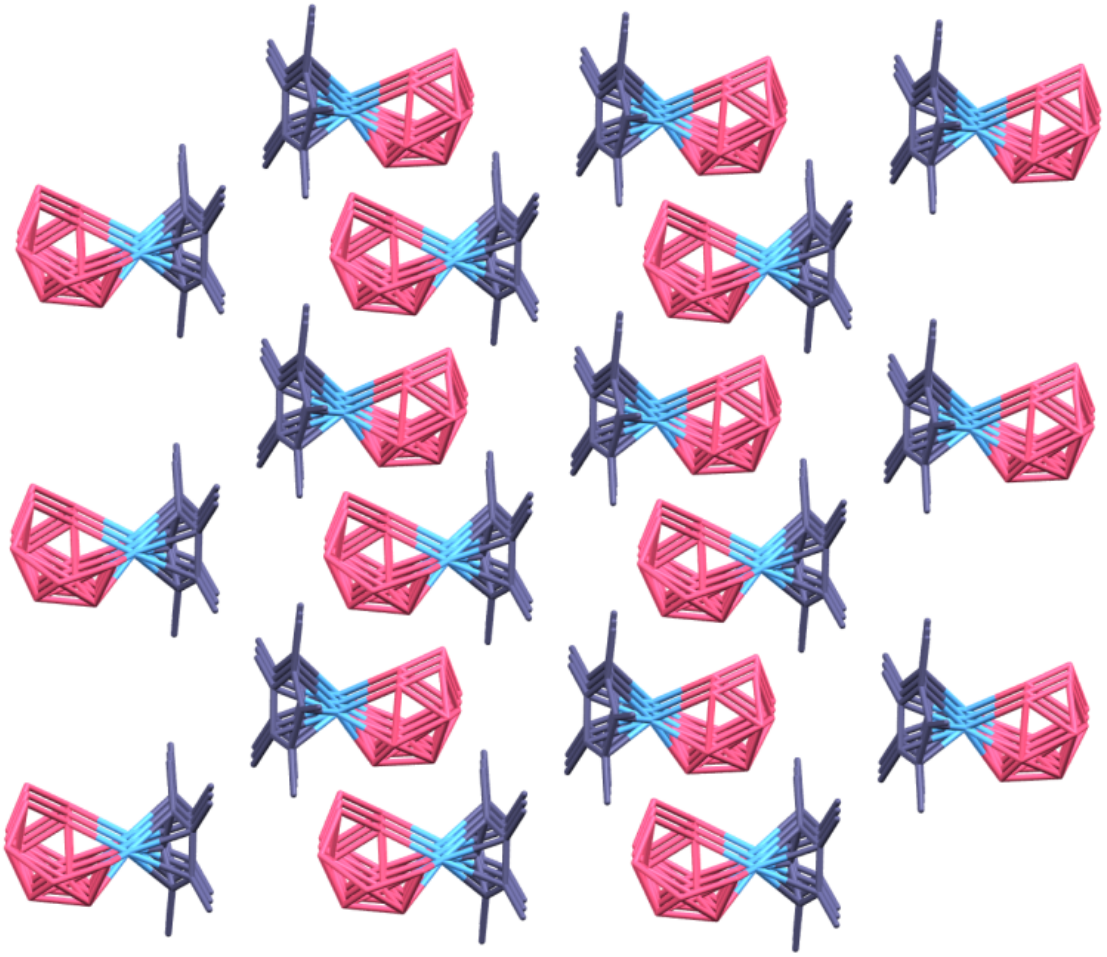

Fig. S1. Illustation of 3D packing view of **1** along *c* axis; Color code: C: violet; Co: cyan; B: pink; (hydrogen atoms are removed for clarity.)

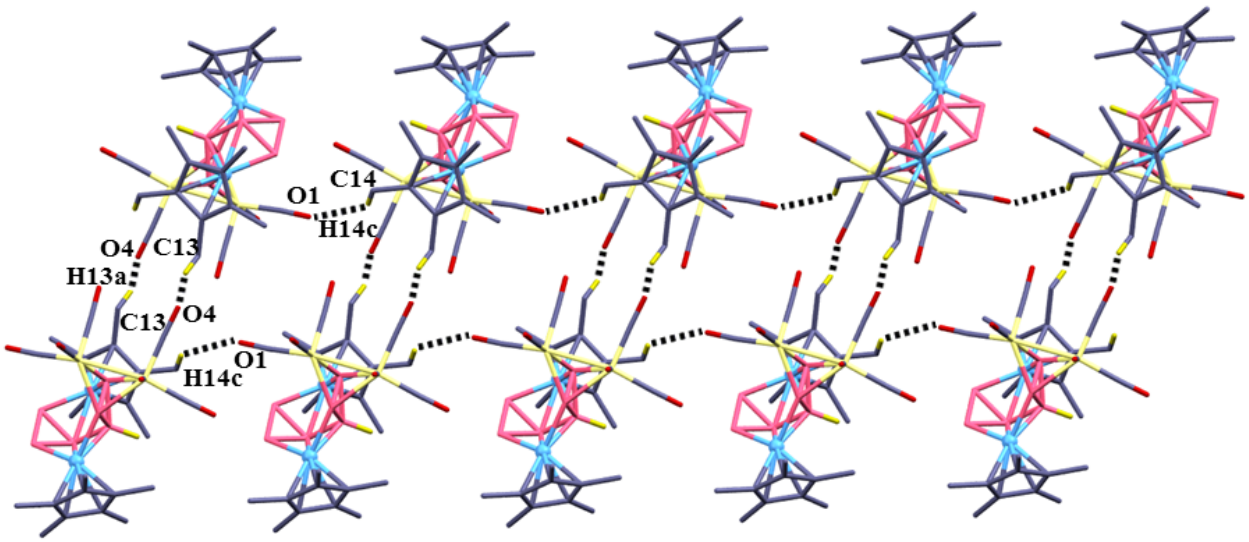

Fig. S2. The C-H…O hydrogen bonding interactions between the adjacent layered molecular units of **4** forming a 2D layer along the *c*-axis (hydrogen atoms except those, which have been taken part in the hydrogen bonding, are removed for clarity)

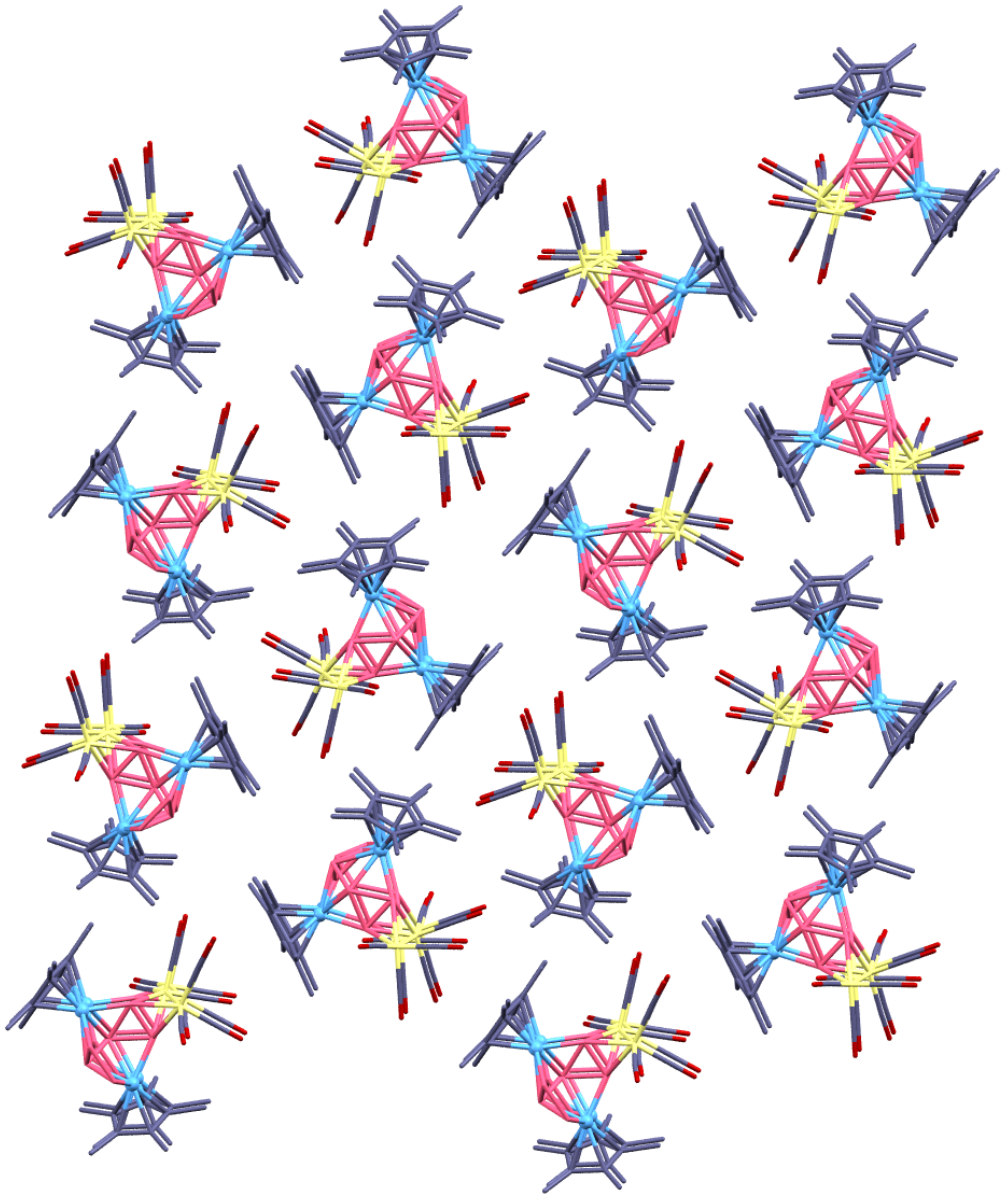

Fig. S3. 3D packing view along *a*-axis for **4** (hydrogen atoms are removed for clarity); Color code: Fe: Yellow; C: Violet; Co: Cyan; O: Scarlet red.

Table S1. Selected Structural Parameters and ^{11}B NMR Chemical Shifts of **4**, [{$Fe_2(CO)_6$}($Cp^*Ru)_2(CO)(B_6H_{10})$] and [{$Fe_2(CO)_6$}($Cp^*Rh)_2(B_6H_{10})$]

Compound	{$Fe_2(CO)_6$}($Cp^*Ru)_2(CO)(B_6H_{10})$]	[{$Fe_2(CO)_6$}($Cp^*Rh)_2(B_6H_{10})$]	**4**
av d_{M-B} (Å)	2.320	2.191	2.146
av d_{B-B}(Å)	1.753	1.750	1.752
d_{Fe-Fe} (Å)	2569	2.580	2.578
av d_{B-B}(Å)	1.711	1.706	1.687
d_{B-B}(Å)[a]	1.711	1.701	1.687
Dihedral angle (deg) [b]	149.77	151.69	152.00
^{11}B NMR	47.1,37.1,29.9,1.37, -2.70	34.7,28.1,25.2,16.4, 1.6,-12.3	45.5, 32.02, 26.94, 25.30, 9.08, -5.50

a distance between the fused B-B bond between two polyhedral, *b* angle between the planes shown in the Chart 1