

Supplementary information

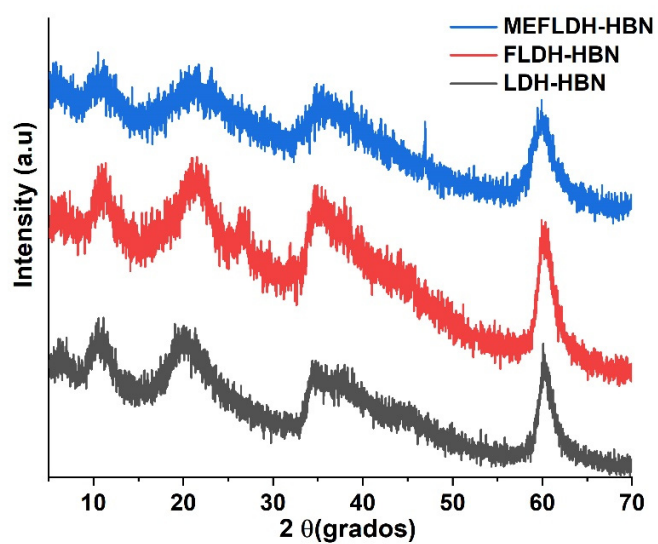


Figure S1. XRD patterns of pigments prepared from combination of layered double hydroxides and hydroxynaphthol blue.

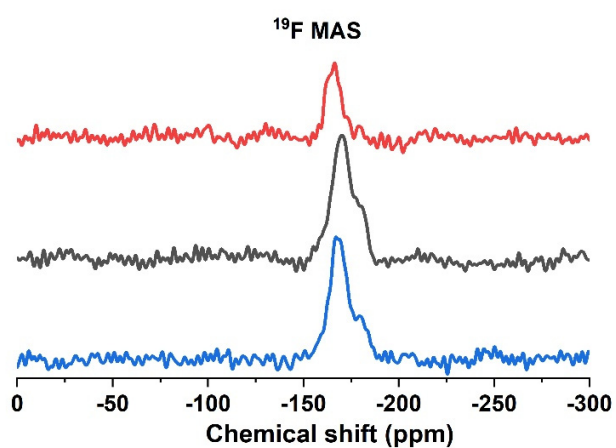
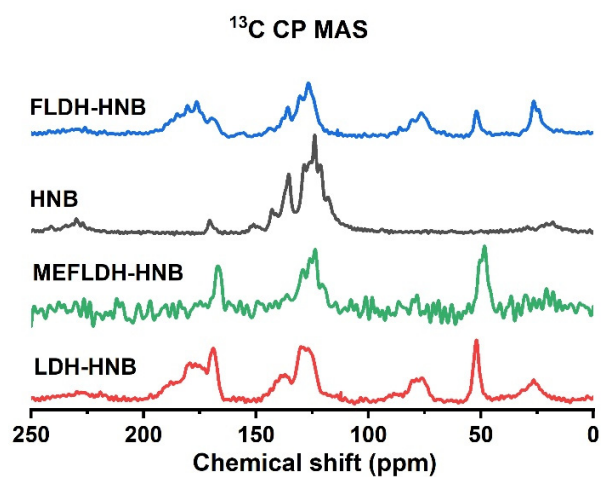


Figure S2. ^{13}C CP/MAS NMR and ^{19}F MAS NMR spectra of pigments prepared from combination of layered double hydroxides and hydroxynaphtol blue.

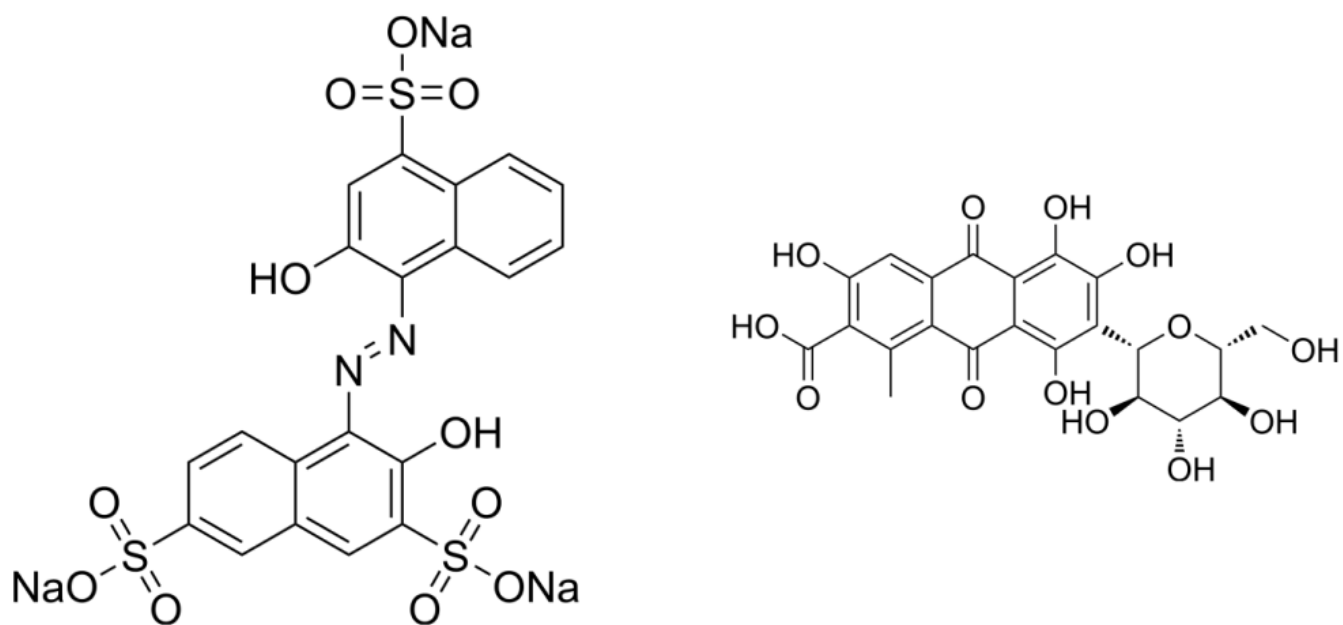


Figure S3. Chemical structure of hydroxynaphtol blue (left) and carminic acid (right).

Sample	Specific Surface area (m ² /g)	Pore volume [cm ³ (STP)/g ⁻¹]	Pore diameter (nm)
LDH	310.39	71.313	2.42
FLDH	338.14	77.689	2.42
LDH-CA	1.5675	0.3601	3.28
FLDH-CA	3.222	0.7403	3.7
FLDH-CA+MgO	1.9708	0.4528	4.2
LDH-HNB	1.238	0.2844	3.28
FLDH-HNB	0.89701	0.2061	3.28
FLDH-HNB+MgO	42.418	9.7456	3.28

Table S1. Textural properties of white layered double hydroxides and their respective pigments