

Supporting information

Antioxidant Intercalated Layered Double Hydroxides: A New Multifunctional Nanofiller for Polymers

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Table S1. Elemental chemical analyses results for CO₃–LDH and A.O-LDH

Sample	Mg	Al	C	H	Mg/Al	Composition
CO ₃ –LDH	19.81 (22.41)	11.10 (12.43)	2.45 (2.76)	4.14 (3.66)	1.78 (1.80)	Mg _{0.64} Al _{0.36} (OH) ₂ (CO ₃) _{0.18} . <i>m</i> H ₂ O
A.O-LDH	9.89 (10.46)	5.68 (5.81)	43.90 (42.1)	6.02 (5.75)	1.74 (1.80)	Mg _{0.63} Al _{0.37} (OH) ₂ (BHPPA) _{0.29} (CO ₃) _{0.07} . <i>m</i> H ₂ O

* Values given in bracket corresponds to theoretical values

Table S2.

Sample	T ₁₀ (°C)	T _{max} (°C)	T _c (°C)	E' (Mpa)	T _g (°C)
PPLAO0	256.2	284.8	118.8	1875.8	8.3
PPLAO0.5	269.5	295.0	129.2	1980.7	8.1
PPLAO1.0	277.1	305.4	134.5	2295.2	7.8
PPLAO2.0	291.5	322.6	136.3	2412.8	8.0
PPAO1.0	262.9	300.4	120.0	1890.1	8.2
PPL1.0	260.2	293.4	126.6	2055.5	7.6

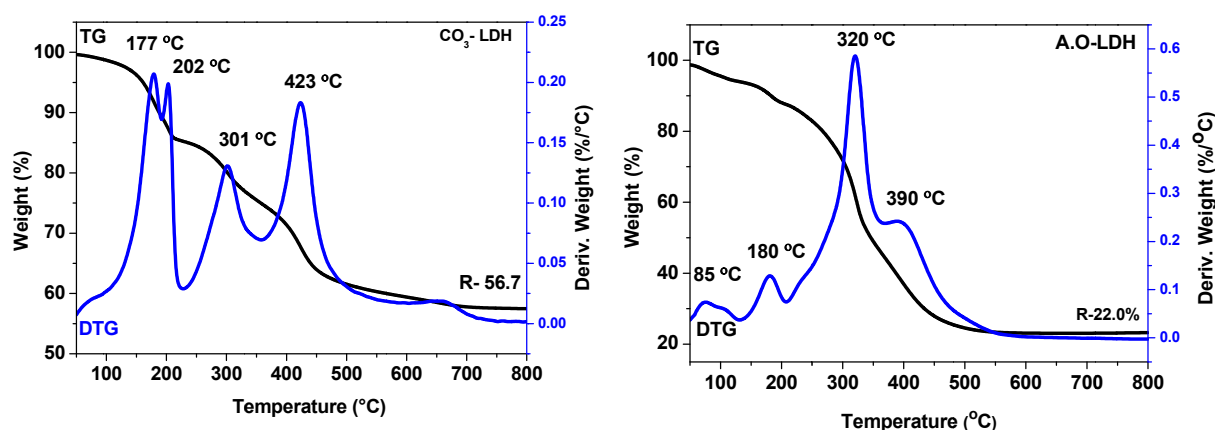


Figure S1: Thermogravimetric and derivative thermogravimetric analysis of pristine and antioxidant immobilized LDHs

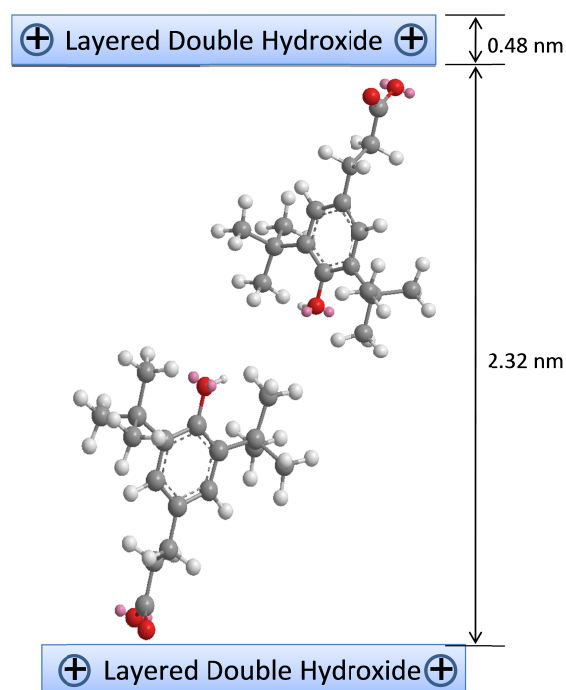
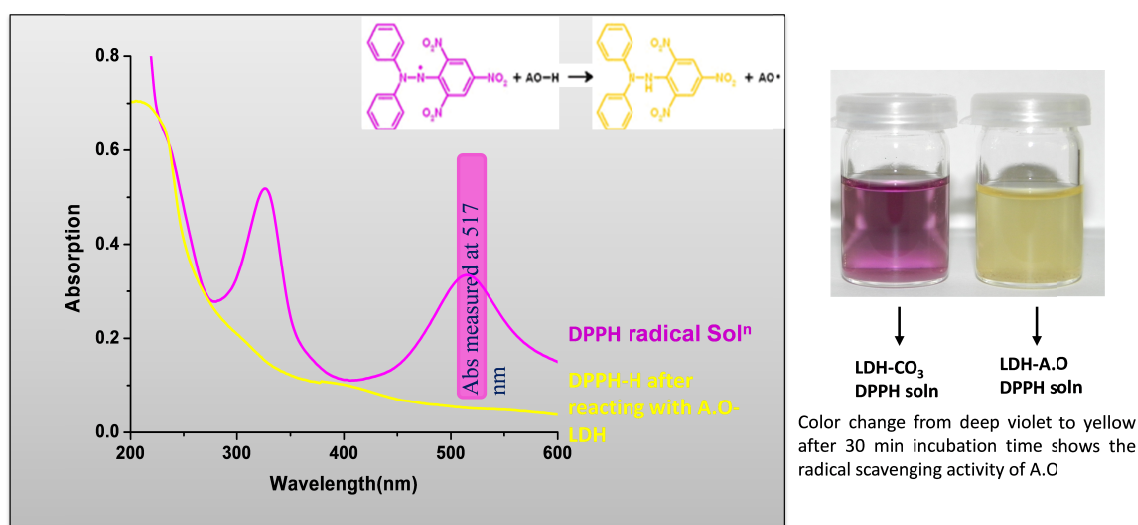


Figure S2: Structural model of antioxidant intercalated LDHs confirming bilayer arrangement of interlayer molecules



S3: Analysis of radical scavenging ability of antioxidant by DHPP assay using UV-Vis spectroscopy

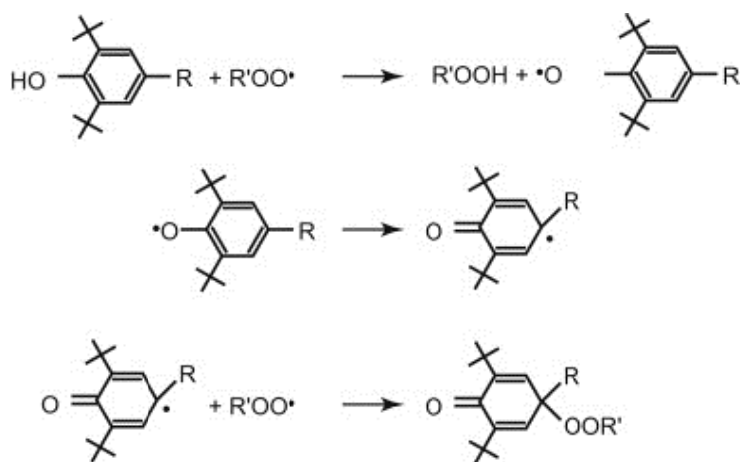


Figure S4: Free radical scavenging action of hindered phenol type of antioxidants