Role of organo-modifier and metal impurities of commercial nanoclays in the photo- and thermo-oxidation of Polyamide 11 nanocomposites

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Thermogravimetric analysis

TGA measurements on PA11, PA11-CC3 and PA11-CC9 were performed in presence of air using a thermogravimetric apparatus (TA Instruments Q500) under air flow (60 mL min^{-1}) with a heating rate of 10 °C min^{-1} from 40 to 800 °C. The obtained results were summarized in **Table S1**. As expected, the collected temperatures at the maximum derivative of weight loss (T_d) increased, displaying values of 395.2, 408.6 and 409.1°C for PA11, PA11-CC3 and PA11-CC9, respectively.

Table S1.

TGA measurements on PA11, PA11-CC3, PA11-CC9, PA11-MMTC3 and PA11-MMTC9 in presence of air.

Sample	$T_{\Delta m=5\%}$ (°C)[a]	$T_{\Delta 1=5\%}$ (°C)[b]	% R[c]
PA11 extruded (T0)	395.2	441.7	1.33
PA11-CC3 (T0)	408.6	462.6	3.21
PA11-CC9 (T0)	409.1	463.8	4.20
PA11-MMTC3	398.5	440.6	3.00
PA11-MMTC9	399.2	440.9	3.98

[a] *Onset temperature for decomposition (5% loss of initial weight)*

[b] *Decomposition maximum temperature*

[c] *Weight residue*

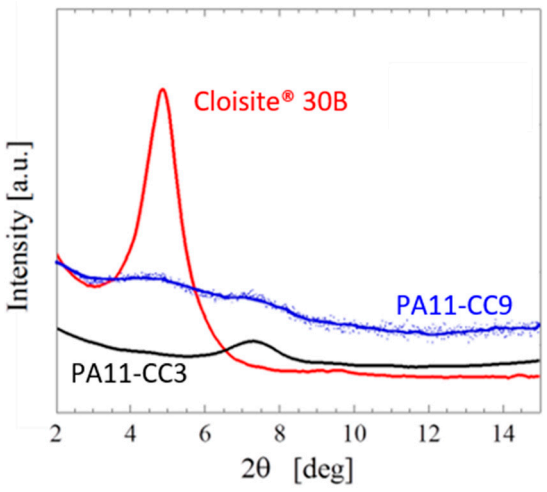

Figure S1. WAXD spectra of Cloisite® 30B and nanocomposite samples PA11-CC3 and CC9.

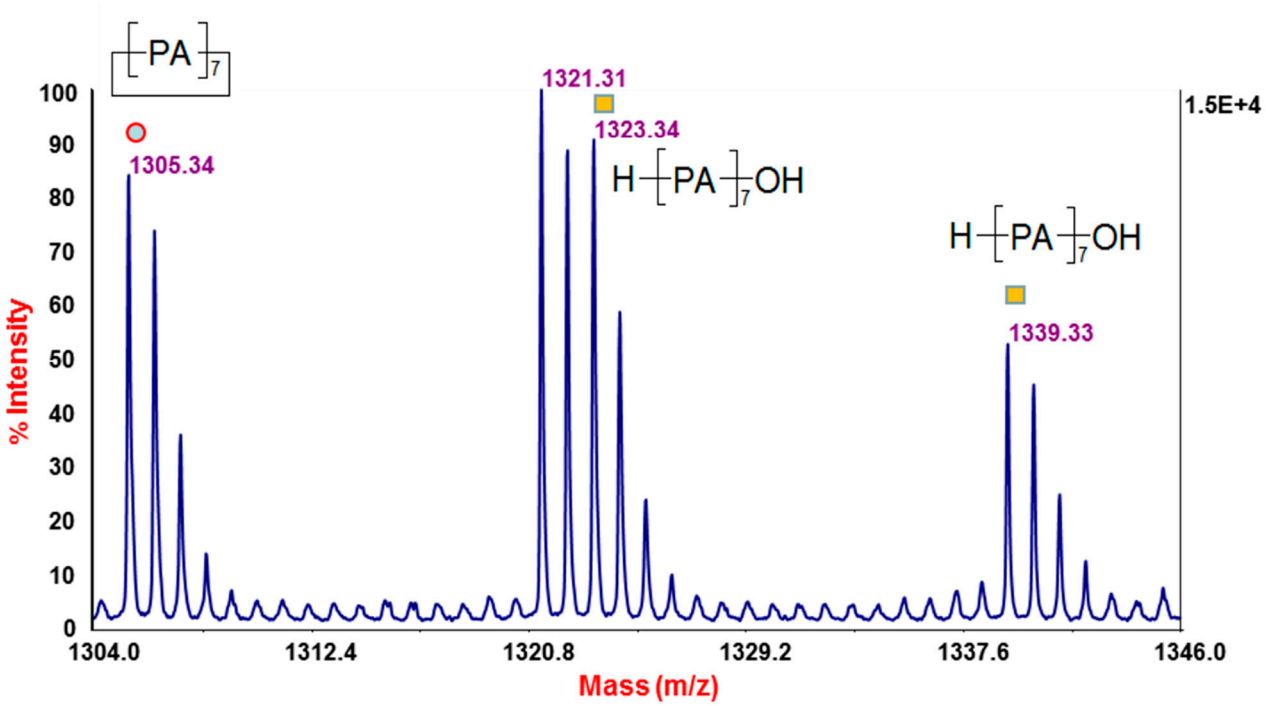

Figure S2. Expanded view of the 1294-1346 *m/z* region of MALDI-TOF Mass spectrum of PA11 recorded in positive reflectron mode by using HABA matrix.