Electronic Supplementary Information

Intercalation and grafting of benzene derivatives into Zinc-Aluminum and Copper-Chromium layered double hydroxides hosts: an XPS monitoring.

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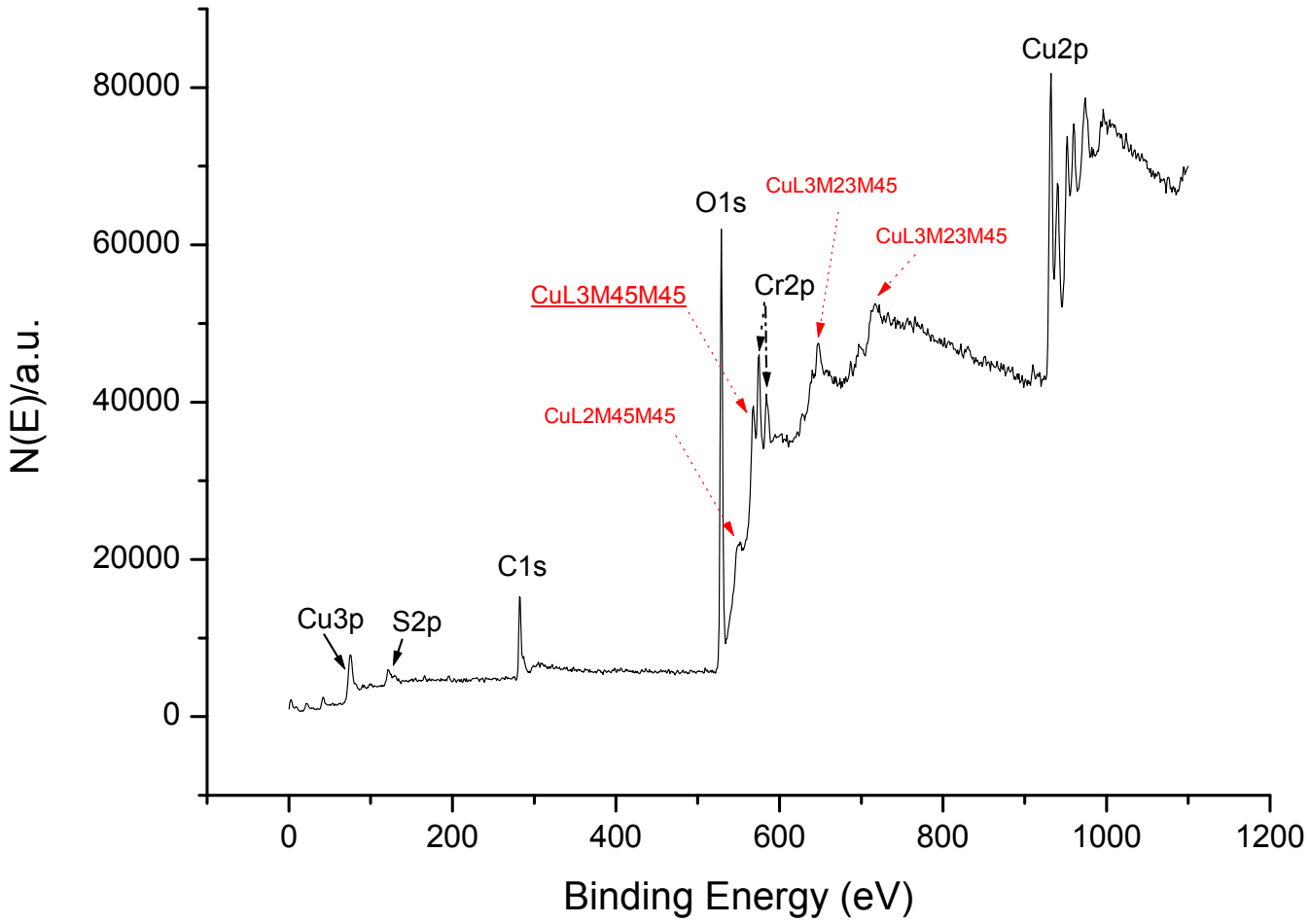

Figure ESI1- Auger lines evidence in Cu_2Cr-HBS XPS survey (RoomT)

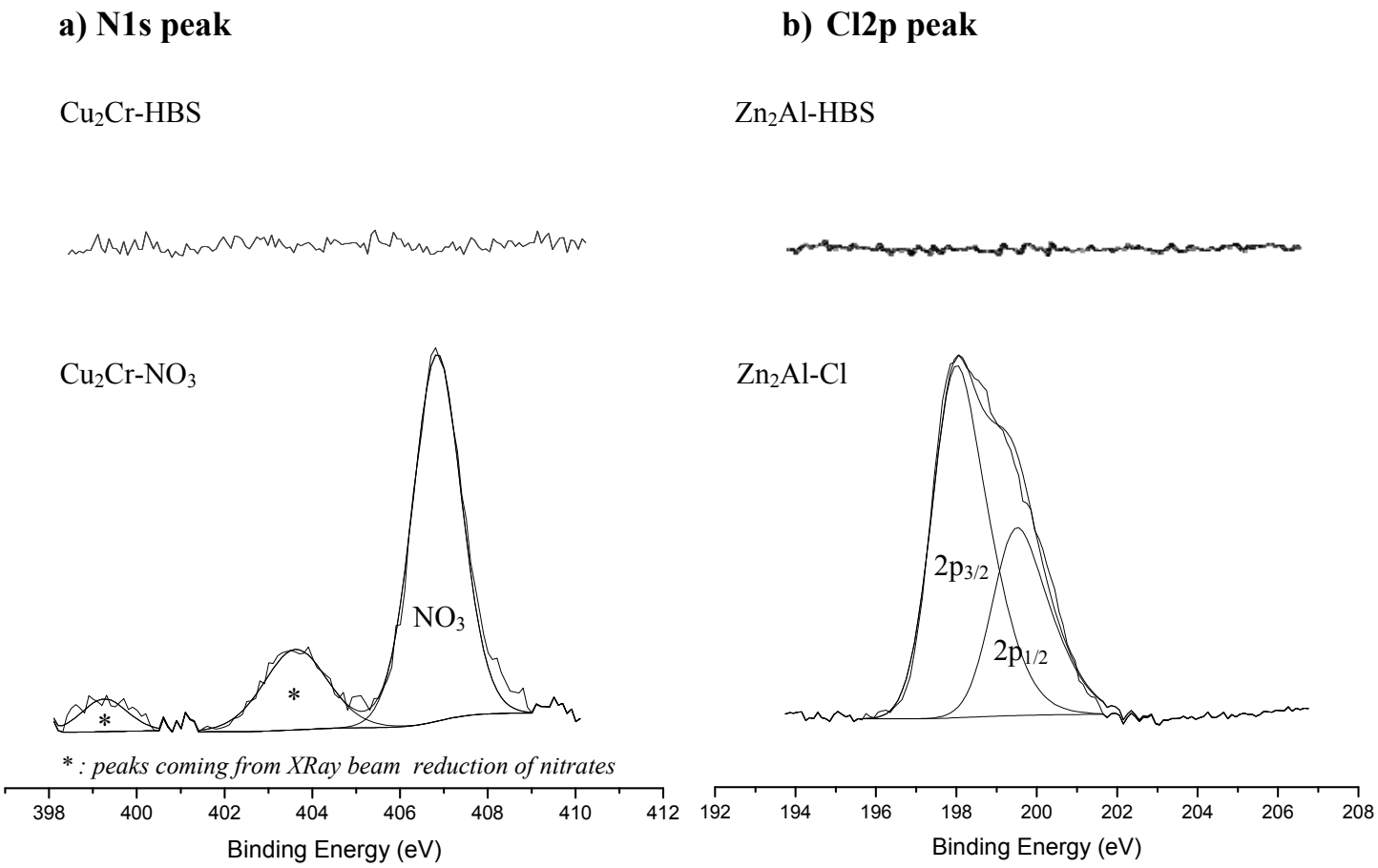

Figure ESI2- a) N1s XPS peak of $Cu_2Cr\text{-}NO_3$ and Cu_2Cr-HBS, and b) Cl2p XPS peak of Zn_2Al-Cl and Zn_2Al-HBS

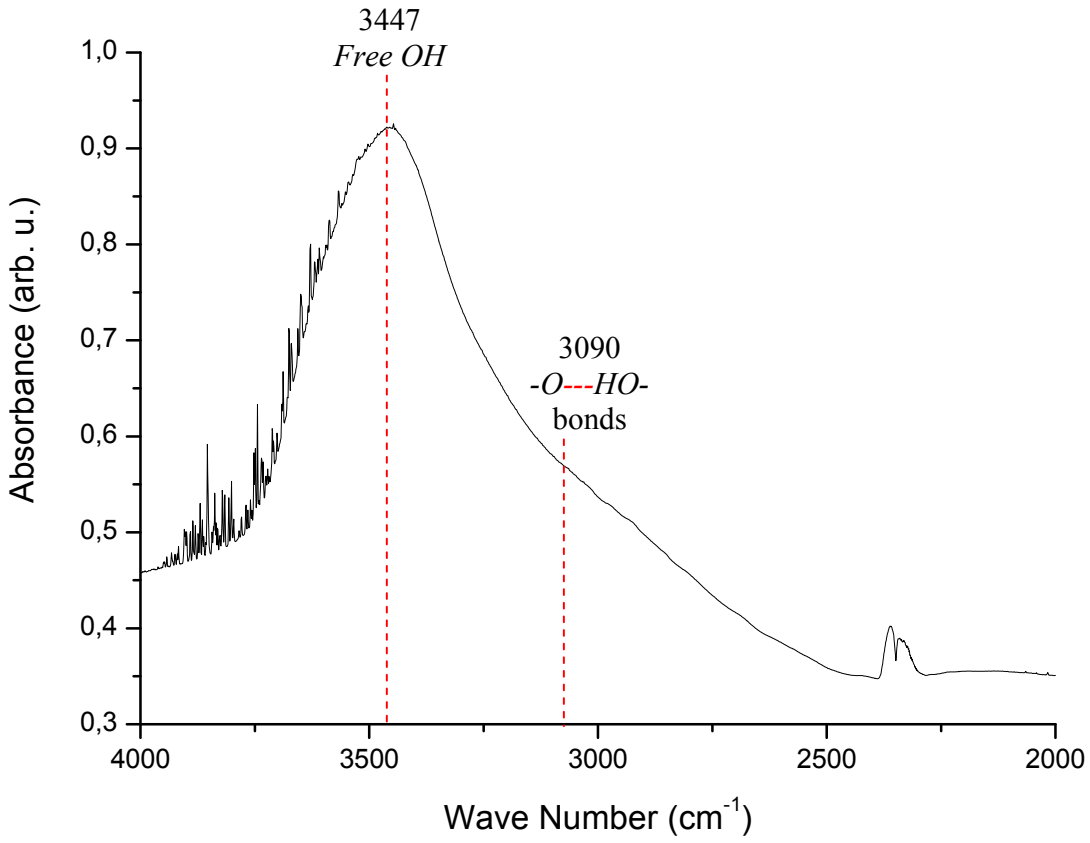

Figure ESI3 – Snapshot of Zn_2Al-HBS FTIR spectrum in the 4000-2000cm^{-1} region

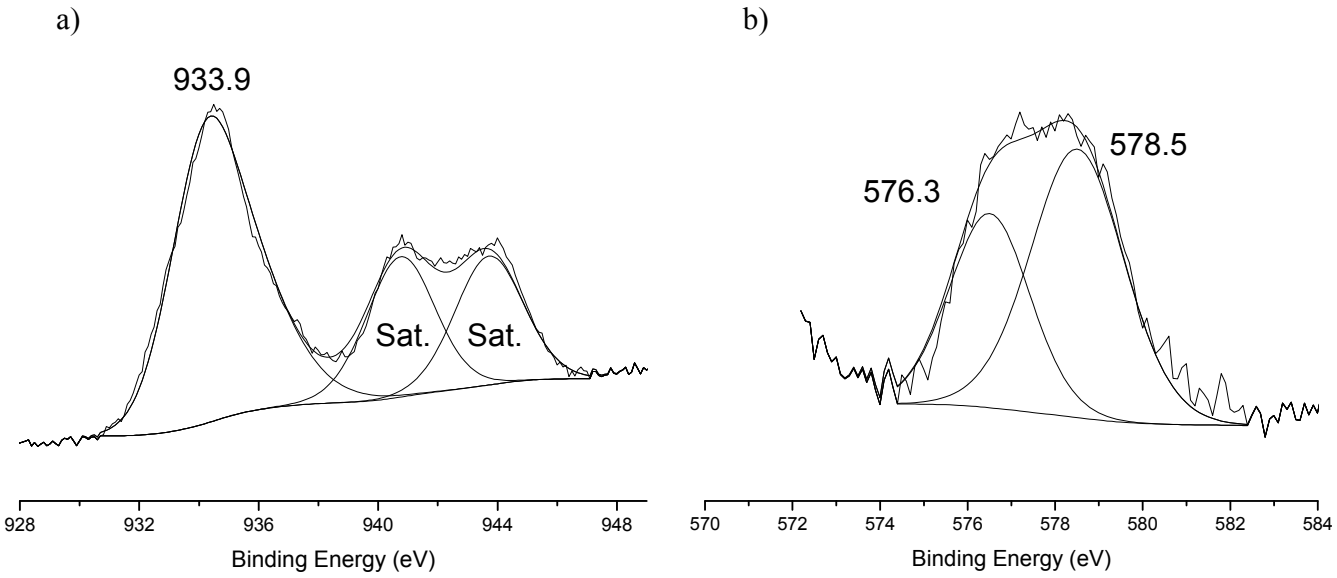

Figure ESI4- XPS peak of Cu_2Cr-HBS at 300°C: a) $Cu2p_{3/2}$ and b) $Cr2p_3/2$

	HBS^-	**HBC^-**	**$Al(OH)_3$**	**Hybrid system *HBS^-* / $Al(OH)_3$**	**Hybrid system *HBC^-* / $Al(OH)_3$**	**Grafted system *HBS^-*- $Al(OH)_3$**	
qS (e-)	1.10			1.16		1.25	1.25
qAl (e-)			1.07	1.10	1.08	1.16	0.54
qC (e-)		0.49			0.52		
qO (e-)	-0.86	-0.74	-0.6	-0.58	-0.59	-0.57	-0.53
Over pop S-O (e-)	0.313					0.182	0.265
Over pop Al-O (e-)			0.260			0.144	0.206
						Single link	Double link

Table ESI1- Theoretical calculations of atoms net charges (q) and Mulliken electronic overlapping population (Over pop) for the HBS, HBC organic molecules, a model mineral fragment and the hybrid systems considering the intercalation or the grafting mode.

compound ***BE region***	***2CuO,Cr_2O_3***	
O1s	529.5 (1.4) 531.1 (1.8)	35.0% 16.4%
C1s	284.6 (1.3) 287.9 (2.3)	28.0% 4.7%
Cu $2p_{3/2}$	933.9 (3.6) *941.4 (3.1)* *944.8 (2.2)*	2.4% 1.3% 0.7%
Cr$2p_{3/2}$	576.2 (2.3) 578.5 (2.6)	8.4% 3.1%

Table ESI2: XPS data of the manufactured (CAS#209317, Aldrich) $2CuO,Cr_2O_3$: Binding Energies and FWHM of peaks (in parentheses) are reported in eV and atomic percentage (%).