

Functionalised Pseudo-Boehmite Nanoparticles as an Excellent Adsorbent Material for Anionic Dyes

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Supplementary information comprising: (1) Thermogravimetric profiles of pseudo-boehmite (PB) and functionalised pseudo-boehmite (FPB), Figures S1 and S2; (2) ^{27}Al MAS-NMR spectra of PB and FPB, Figure S3; (3) Amount of dye adsorbed per gram of pseudo-boehmite and functionalised pseudo-boehmite at pH = 7.8, Figure S4; and (4) Structures and molecular dimensions of Acid Blue 9, Acid Yellow 23 and Acid Red 37 from Hyperchem simulation, Figures S5-S7.

Figure S1: Thermogravimetric profile of pseudo-boehmite (PB)

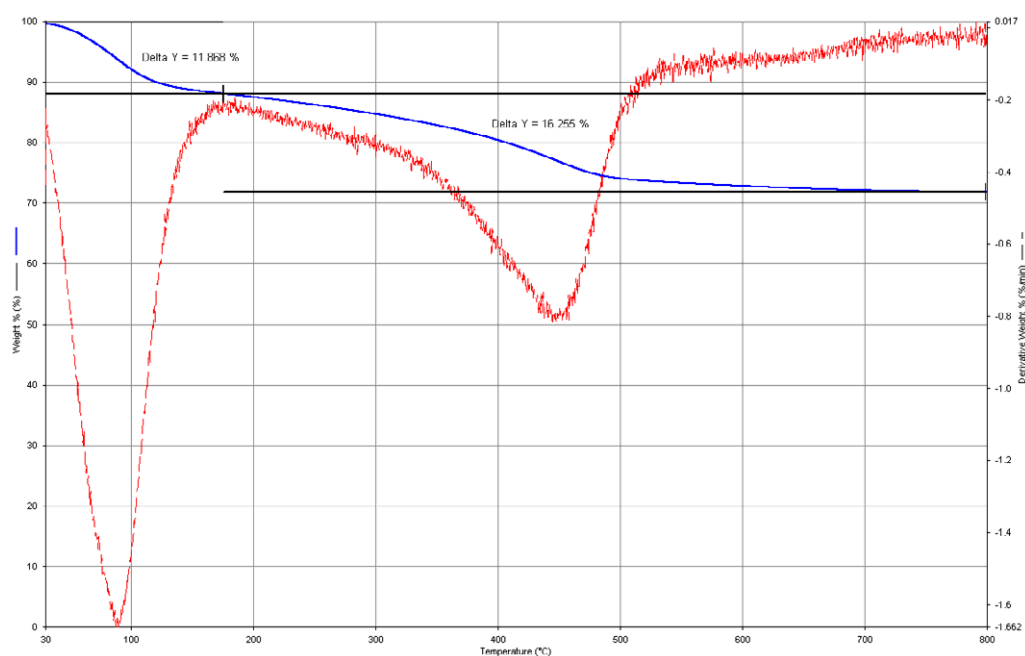


Figure S2: Thermogravimetric profile of functionalised pseudo-boehmite (FPB)

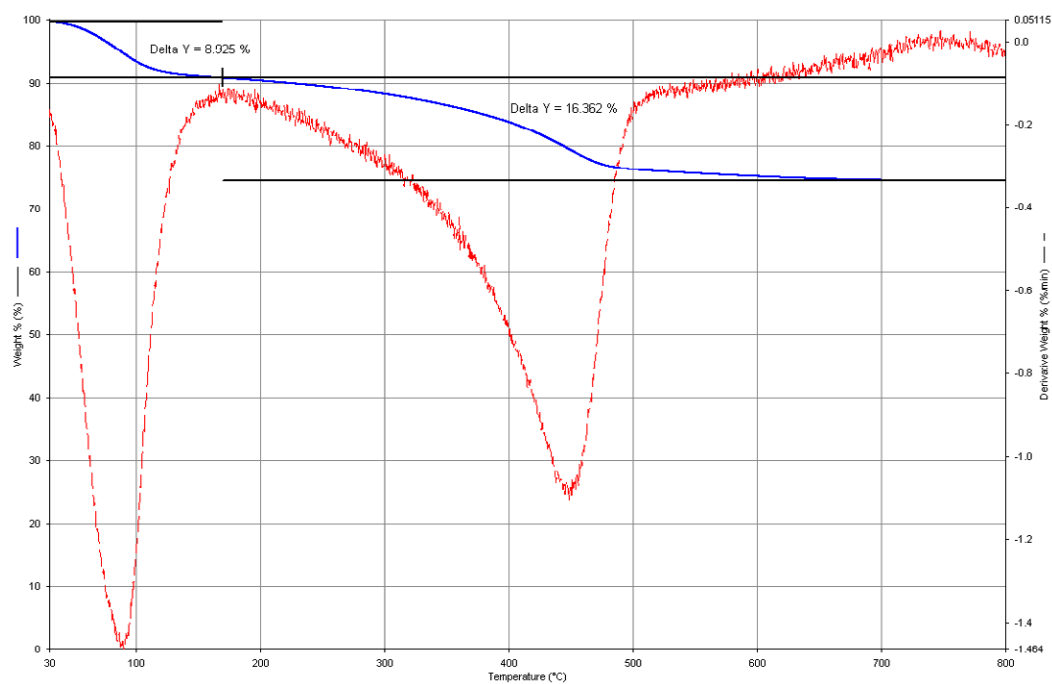


Figure S3: ^{27}Al MAS-NMR spectra of (a) Pseudo-boehmite (PB) and (b) Functionalised pseudo-boehmite (FPB). *Spinning sidebands of the main peak

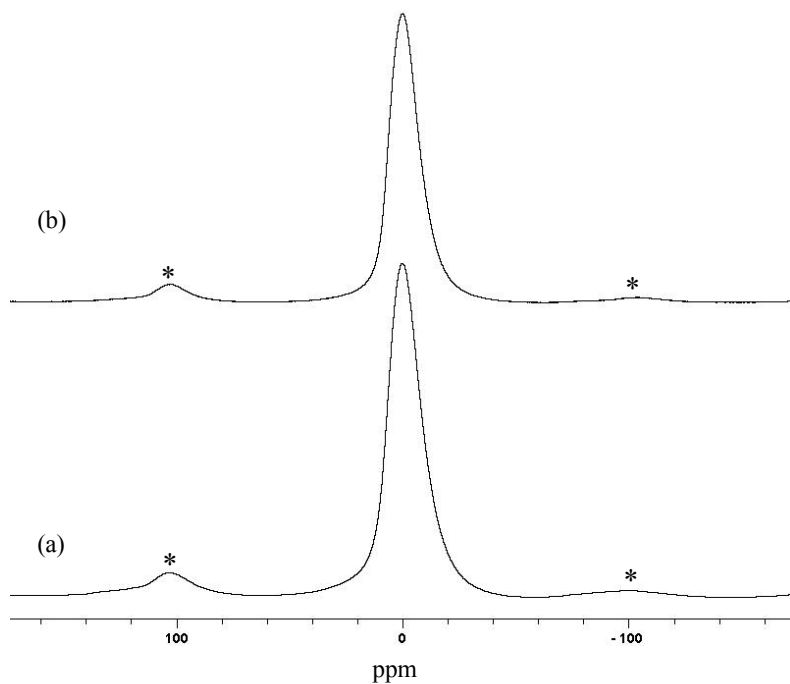


Fig. S4 Amount (mmol) of dye adsorbed per gram of PB (pseudo-boehmite); FPB (functionalised pseudo-boehmite) at pH = 7.8 from 5mM solutions of AB9 (Acid Blue 9); AY23 (Acid Yellow 23) and AR37 (Acid Red 37). * Result for 1 mM AB 9.

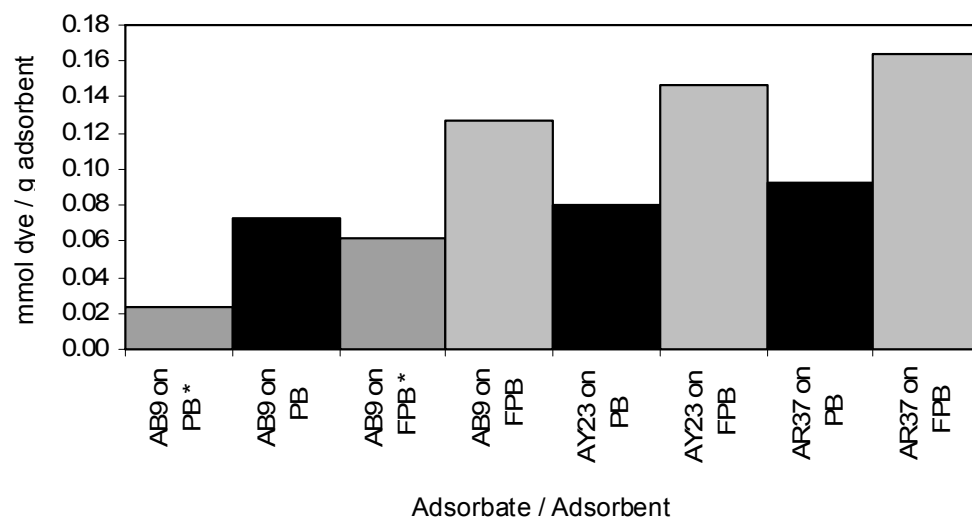


Figure S5: 3 – Dimensional structure of Acid Blue 9 in the gas phase. Molecular Box: $x = 10.3$ Å; $y = 10.0$ Å; $z = 12.8$ Å (note: $x = 2$; $y = 3$ and $z = 1$)

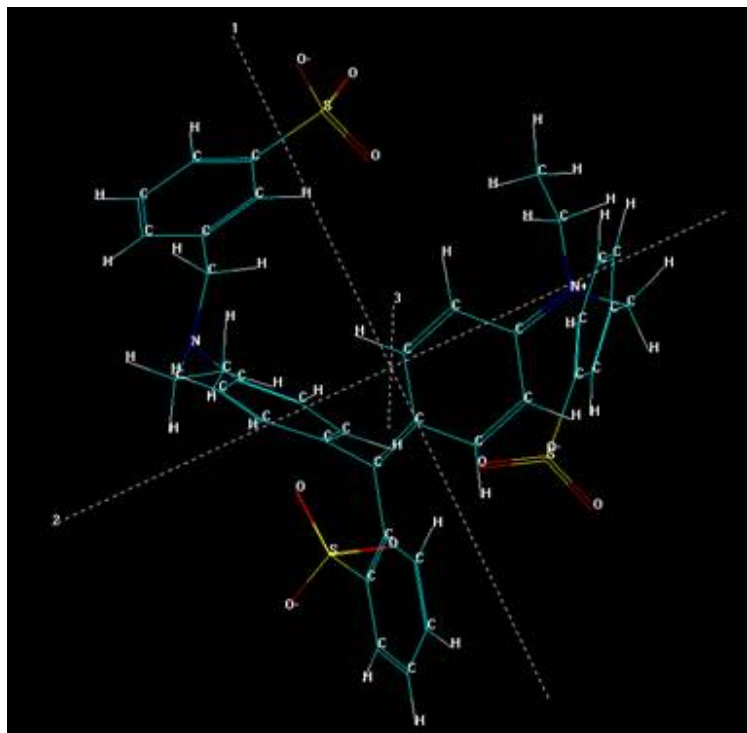


Figure S6: 3 – Dimensional structure of Acid Yellow 23 in the gas phase. Molecular Box: $x = 7.4$ Å; $y = 2.4$ Å; $z = 16.9$ Å (note: $x = 2$; $y = 3$ and $z = 1$)

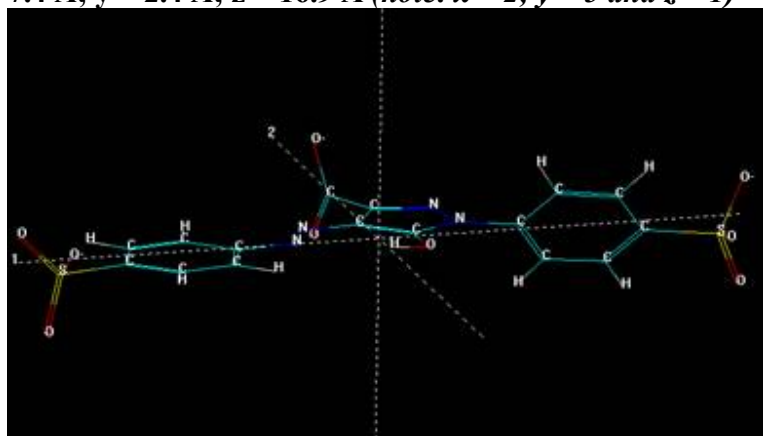


Figure S7: 3 – Dimensional structure of Acid Red 37 in the gas phase. Molecular Box: $x = 9.4$ Å; $y = 3.3$ Å; $z = 15.4$ Å (note: $x = 2$; $y = 3$ and $z = 1$)

