Supporting Information

Removal of Sulfur and Nitrogen Compounds from Diesel Oil by Adsorption using Clays as Adsorbents

Luana V. Baia[†], Wallace C. Souza[†], Ricardo J. F. de Souza[‡], Cláudia O. Veloso[†,*], Sandra S.X. Chiaro[‡], Marco Antonio G. Figueiredo[†]

[†] Institute of Chemistry, Rio de Janeiro State University, Campus Maracanã, PHLC, Rua São Francisco Xavier, 524, Rio de Janeiro RJ, 20550-900, Brazil.

[‡] PETROBRAS - CENPES - Research and Development Center, Av. Horácio Macedo, 950, Rio de Janeiro RJ, 21941-915, Brazil.
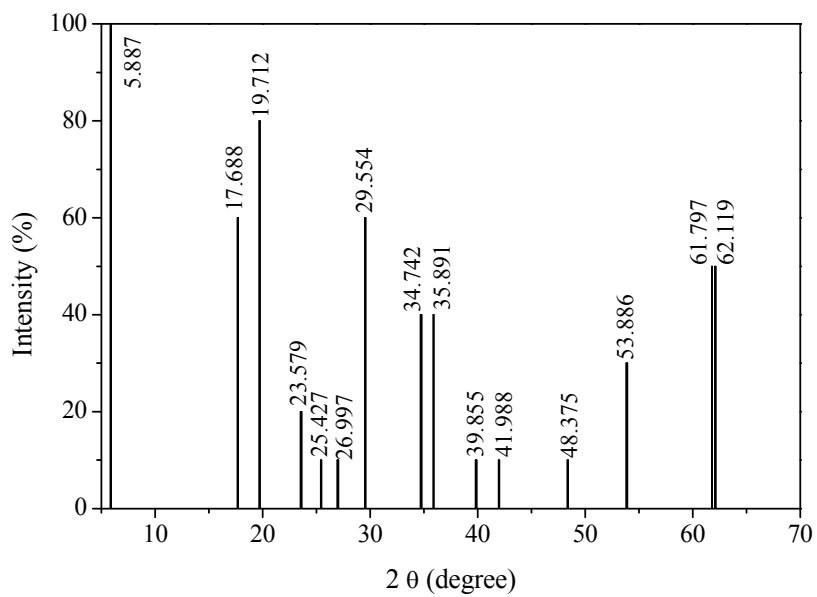
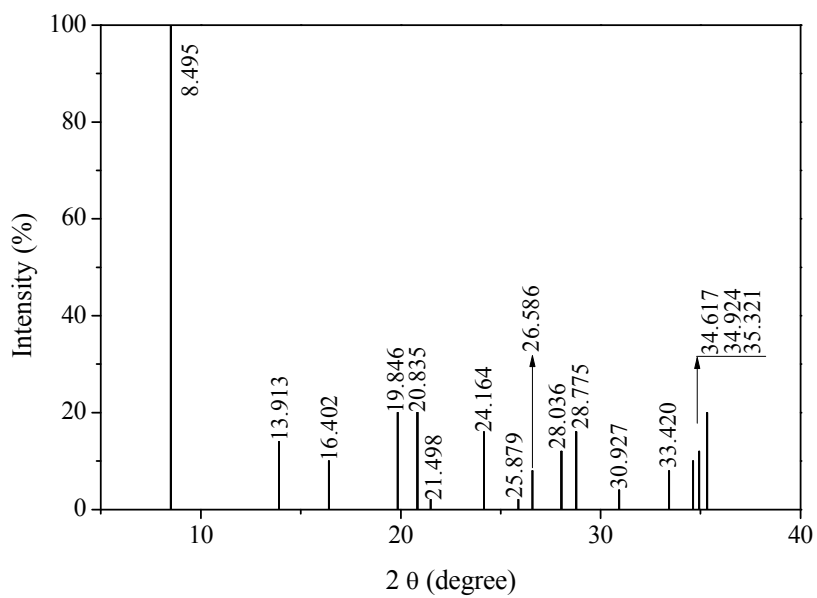**Figure S1.** ICCD 13-0135 (Montmorillonite-15A).

Figure S2. ICCD 31-0783 (Palygorskite).

Table S1. Isotherm constants for BET model and R^2 values for experimental data of sulfur compounds adsorption on Clay A and B at 40 and 70 °C. q_s (mol kg^{-1}), K_1 (min^{-1}), K_a (min^{-1}L^{-1}).

BET

Experimental data	q_s	K_1	K_a	R^2
Clay A (40 °C)	1.81×10^{-2}	0.001	0.304	0.963
Clay A (70 °C)	8.01×10^{-3}	0.000	0.307	0.994
Experimental data	q_s	K_1	K_a	R^2
Clay B (40 °C)	9.57×10^{-4}	4.258	0.304	0.992
Clay B (70 °C)	6.32×10^{-4}	5.000	0.292	0.999

Table S2. Isotherm constants for BET and Langmuir-Freundlich models and R^2 values for nitrogen compounds adsorption on Clay A and B at 40 and 70 °C. q_s (mol kg^{-1}), K_1 (min^{-1}), K_a (min^{-1}L^{-1}), $q_{max\,s}$ (mol kg^{-1}), K_s (min^{-1}), n_s (min^{-1}L^{-1}).

BET

Experimental data	q_s	K_1	K_a	R^2
Clay A (40 °C)	6.61×10^{-4}	50.002	2.239	0.972
Clay A (70 °C)	7.90×10^{-4}	58.807	1.763	0.978

Langmuir-Freundlich

Experimental data	$q_{max\,s}$	K_s	n_s	R^2
Clay B (40 °C)	1.96×10^{-1}	3.52×10^{-2}	1.766	0.999
Clay B (70 °C)	3.04×10^{-2}	3.52×10^{-1}	1.439	0.993