Supplementary Materials

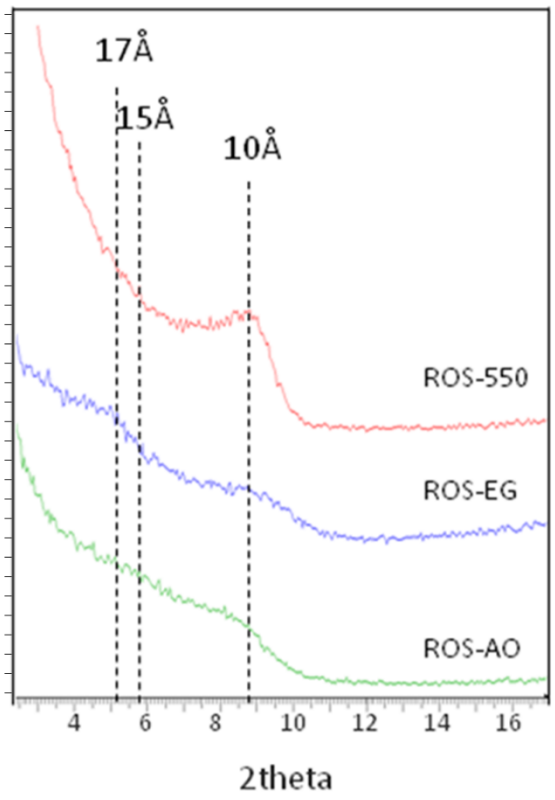

Figure S1. XRD-patterns of sample ROS. AO: Oriented aggregate of <2μm fraction, EG: Oriented aggregate solvated with ethylen-glycol. 550: Oriented aggregate heated at 550 °C for 2 hours. The y axis is in arbitrary units.

Table S1. Correlation matrix of major oxides. Corr. Coef: Pearson´s correlation coefficient. Sig: bilateral signification. * significant at 0.05 level; ** significant at 0.01 level.

		SiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	TiO_2
SiO_2	Corr. Coeff.	1	0.439	−0.197	−0.321	−0.581 **	0.416	0.165	−0.139	0.023
	Sig.		0.060	0.420	0.180	0.009	0.076	0.499	0.571	0.925
Al_2O_3	Corr. Coeff.	0.439	1	0.455	0.280	−0.959 **	−0.080	0.312	−0.119	0.036
	Sig.	0.060		0.050	0.245	0.001	0.743	0.193	0.627	0.885
Fe_2O_3	Corr. Coeff.	−0.197	0.455	1	0.238	−0.353	−0.446	0.32	0.610 **	0.694 **
	Sig.	0.420	0.050		0.327	0.138	0.056	0.181	0.006	0.001
MnO	Corr. Coeff.	−0.321	0.280	0.238	1	−0.217	−0.305	0.246	−0.236	−0.110
	Sig.	0.180	0.245	0.327		0.372	0.204	0.311	0.33	0.653
MgO	Corr. Coeff.	−0.581 **	−0.959 **	−0.353	−0.217	1	−0.150	−0.459 *	0.214	0.024
	Sig.	0.009	0.001	0.138	0.372		0.539	0.048	0.379	0.922
CaO	Corr. Coeff.	0.416	−0.080	−0.446	−0.305	−0.150	1	0.385	−0.407	−0.285
	Sig.	0.076	0.743	0.056	0.204	0.539		0.104	0.083	0.237
Na_2O	Corr. Coeff.	0.165	0.312	0.32	0.246	−0.459 *	0.385	1	−0.155	0.020
	Sig.	0.499	0.193	0.181	0.311	0.048	0.104		0.526	0.935
K_2O	Corr. Coeff.	−0.139	−0.119	0.610 **	−0.236	0.214	−0.407	−0.155	1	0.864 **
	Sig.	0.571	0.627	0.006	0.330	0.379	0.083	0.526		0.001
TiO_2	Corr. Coeff.	0.023	0.036	0.694 **	−0.110	0.024	−0.285	0.020	0.864 **	1
	Sig.	0.925	0.885	0.001	0.653	0.922	0.237	0.935	0.001	

Table S2. Content of minor and trace elements in Spanish bentonites. Values in ppm. Sample abbreviations according to Table S1.

	CAR1	CAR2	CAR3	LTBB	LTBV	LTBN	MM	MCM	RESQ	ROS	VER	ESB2	ESB3	ESB6	ESB45	NAV5	NAV6	RdF17	CrbF11
Sc	10	10	10	4	4	4	13	4	1	2	6	10	11	11	4.5	10	3	3	9
Be	2	3	2	7	7	7	1	2	<1	<1	2	4	4	4	1.5	3	2	7	15
V	6	6	6	13	16	22	67	27	85	84	39	84	72	104	72	16	26	29	89
Cr	<20	<20	<20	<20	<20	<20	<20	20	20	<20	<20	50	50	60	35	20	30	<20	40
Co	2	1	2	1	<1	1	2	5	<1	1	6	8	8	8	5	<1	1	2	10
Ni	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20		<20	<20	<20	<20
Cu	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	10	30	10	<10	<10	<10	<10
Zn	60	60	90	50	40	40	40	40	<30	<30	50	80	70	100	40	<30	<30	<30	50
Ga	22	21	21	20	21	22	16	9	2	4	10	19	19	22	8.5	24	32	42	28
Ge	0.5	0.8	0.5	1.8	1.3	1.5	0.6	0.7	0.6	<0.5	0.9	1.6	1.4	1.3	0.75	1.1	1.2	1.1	1.2
As	<5	8	<5	<5	<5	<5	<5	28	19	19	36	26	25	29	12	17	16	7	7
Rb	31	25	22	13	35	19	60	80	18	24	75	144	141	152	60.5	34	54	41	135
Sr	208	178	215	85	90	122	182	101	200	277	103	276	261	339	271.5	588	296	556	342
Y	18.7	22.5	25.7	20.4	20.2	20.8	21.6	11.5	3.8	4	18.5	23.1	22.5	21.4	11.8	8.3	7.5	19.4	14.9
Zr	222	192	214	200	161	150	116	81	41	42	64	81	84	90	61.5	57	65	33	142
Nb	10.4	10.5	8.3	10.9	8.8	9	4.5	3.1	1.5	2.3	6.8	13.5	14.4	12.5	5.35	11.2	11.9	5	15.7
Mo	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	3	2	<2	<2	<2	<2
Ag	0.7	0.6	0.8	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.5	0.5		<0.5	<0.5	<0.5	<0.5
In	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1		0.1	<0.1	<0.1	<0.1
Sn	9	9	9	7	7	7	3	3	1	2	6	8	9	9	3	10	13	6	10
Sb	0.4	0.3	0.4	0.6	<0.2	0.4	0.5	<0.2	0.5	0.6	0.8	1	1	2	1	1.4	1.4	<0.2	2.5
Cs	4	3.9	3.3	2.1	5.8	5.5	110	4.2	1.2	1.8	6.6	11.2	11.2	12.3	4.65	1.5	3.6	5.4	12.5
Ba	49	19	6	77	1153	106	271	156	80	42	107	243	180	234	113	789	287	359	373
La	35.1	37.1	29.1	27.9	34.3	30.5	22.3	13	3.98	5.4	18.7	29.8	29.5	28.9	14.0	63.5	48.4	93.6	42.9
Ce	77.3	74.5	64	77.5	68.9	64.5	44.8	28.2	8.88	11.1	35.3	64.3	63.7	59.2	29.9	142	103	209	91.9
Pr	8.3	8.42	6.99	6.16	7.02	6.56	5.19	3.2	0.94	1.23	4.46	7.31	7.34	7.22	3.50	16.4	11	24.5	9.49
Nd	29.3	30.1	24.7	20.9	23.7	22.2	19.4	11.9	3.63	4.86	18	27.8	27.6	27.4	12.9	72.4	41.2	98.1	35.9
Sm	6.40	6.48	5.58	4.05	4.33	4.14	4.02	2.39	0.74	0.90	3.89	6.01	6.04	6.09	2.83	17.60	7.42	21.80	7.28

Eu	0.91	0.94	0.79	0.90	0.83	0.78	0.90	0.39	0.11	0.13	0.61	0.83	0.76	0.86	0.38	3.07	1.19	2.61	1.07
Gd	5.51	6.10	5.26	3.12	3.26	3.01	3.39	1.99	0.56	0.73	3.53	4.97	5.01	4.61	2.30	10.10	4.01	12.60	4.69
Tb	0.92	1.05	0.98	0.51	0.49	0.51	0.58	0.32	<0.01	0.12	0.58	0.84	0.80	0.74	0.37	0.97	0.47	1.37	0.63
Dy	5.12	5.54	5.68	3.15	3.12	3.25	3.66	1.92	0.56	0.70	3.19	4.49	4.35	4.14	2.21	2.42	1.65	4.93	2.90
Ho	0.85	0.94	1.04	0.64	0.63	0.63	0.72	0.36	0.13	0.15	0.62	0.81	0.80	0.76	0.43	0.36	0.29	0.66	0.49
Er	2.19	2.48	2.80	2.06	1.97	2.03	2.16	1.14	0.40	0.45	1.64	2.16	2.18	2.05	1.14	0.95	0.84	1.48	1.35
Tm	0.29	0.34	0.39	0.32	0.30	0.32	0.31	0.17	0.06	0.08	0.23	0.30	0.31	0.29	0.18	0.14	0.12	0.18	0.20
Yb	1.77	2.25	2.47	2.38	2.05	2.23	1.95	1.15	0.44	0.52	1.38	1.98	1.92	1.94	1.14	0.90	0.81	0.98	1.23
Lu	0.23	0.33	0.34	0.36	0.32	0.35	0.30	0.18	0.07	0.08	0.20	0.28	0.28	0.28	0.17	0.11	0.12	0.12	0.17
Hf	6.6	6	6.2	5	4.5	4.5	3.2	2.2	1	1	1.7	2.1	2.3	2.3	1.7	1.6	2.3	2.5	4.2
Ta	1.18	1.15	1.17	0.99	0.92	0.99	0.49	0.53	0.2	0.29	0.96	1.72	1.79	1.46	0.72	1.6	1.6	0.45	1.36
W	1.1	<0.5	<0.5	2.5	<0.5	<0.5	1.4	<0.5	0.6	2.8	2.7	7.4	7.9	6	3.2	4.4	5	2.1	3.6
Tl	0.07	<0.05	<0.05	1.34	0.64	0.72	0.44	0.25	0.12	0.14	0.42	0.73	0.77	0.74	0.34	0.17	0.29	0.41	1.17
Pb	47	19	32	48	26	63	10	8	<5	10	7	7	14	40	13	29	28	244	31
Bi	0.3	0.3	0.4	0.4	0.5	0.4	0.2	<0.1	<0.1	<0.1	0.5	0.3	0.5	0.4		1.8	2.5	17.3	0.8
Th	16	15.8	16	15.9	15.8	15.9	8.63	6.33	1.89	2.7	7.09	13	13.6	13.7	6.03	8.36	9.94	16	12.4
U	0.26	1.57	0.21	0.35	0.67	0.51	2.82	3.7	9.74	14.2	7.28	12.8	11.9	23.5	19.15	5.19	2.49	3.41	4.83