

An Efficient Cost Effective Removal of Ca^{2+} , Mg^{2+} and Cu^{2+} Ions from Aqueous Medium Using Chloro-Sodalite Synthesized from Coal Fly Ash

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Supporting Information

Table S1. Supporting data of Fig. 6 (a-c) : Effect of contact time on the extent of adsorption of Ca^{2+} , Mg^{2+} and Cu^{2+} ions onto chloro-sodalite at different temperatures.

Sr. No.	Time /min.	% Adsorption of Ca^{2+}			% Adsorption of Mg^{2+}			% Adsorption of Cu^{2+}		
		26 °C	50 °C	75 °C	26 °C	50 °C	75 °C	26 °C	50 °C	75 °C
1	1	14.47	29.60	29.13	12.06	14.06	17.70	6.504	10.63	14.91
2	30	23.68	37.50	44.37	15.07	18.75	27.08	12.19	17.02	26.31
3	60	27.63	41.44	52.31	18.59	22.39	35.41	16.66	23.40	42.10
4	90	28.94	40.78	53.64	19.59	24.47	33.85	19.51	25.53	40.35
5	120	29.60	44.73	55.62	19.59	24.47	39.06	20.32	26.80	46.49
6	150	30.26	45.39	59.60	19.59	26.04	43.22	21.13	27.65	50.87
7	180	30.92	45.39	56.29	19.59	27.08	39.06	21.95	28.51	49.56
8	210	30.92	47.36	60.26	19.09	26.04	43.75	22.76	28.51	47.36
9	240	30.92	48.02	60.92	20.60	28.12	45.31	22.76	28.51	48.68

Table S2. Supporting data of Fig. 7 (a-c) : Effect of initial concentration Ca^{2+} , Mg^{2+} and Cu^{2+} on the extent of adsorption of Ca^{2+} , Mg^{2+} and Cu^{2+} ions onto chloro-sodalite at different temperatures.

Sr. No.	Conc. / ppm	% Adsorption of Ca^{2+}			Conc. / ppm	% Adsorption of Mg^{2+}			Conc. / ppm	% Adsorption of Cu^{2+}		
		25 °C	50 °C	75 °C		28 °C	50 °C	75 °C		29 °C	50 °C	75 °C
1	0	0	0	0	0	0	0	0	0	0	0	0
2	20	46.66	46.66	57.77	5	25.00	30.55	27.77	10	10.00	20.00	40.00
3	40	68.00	64.00	70.66	10	41.81	45.45	49.09	20	16.66	25.00	50.00
4	60	74.50	70.58	78.43	15	54.28	57.14	61.42	30	22.22	27.77	52.77
5	80	75.57	79.38	83.20	20	61.90	64.28	69.04	40	25.00	29.16	54.16
6	100	73.91	81.36	85.71	25	67.34	69.38	73.46	50	26.66	30.00	55.00
7	120	70.83	78.64	87.50	30	70.90	72.72	76.36	60	27.14	30.00	55.71
8	140	64.88	73.77	88.88	35	72.30	76.92	79.23	70	26.19	28.57	52.38
9	160	60.31	69.44	85.71	40	74.64	78.87	80.28	80	21.87	27.08	50.00
10	180	56.78	69.28	83.92	45	75.64	79.48	80.76	90	16.66	25.92	48.14
11	200	53.24	65.90	84.41	50	75.29	78.82	79.41	100	12.50	25.00	46.66

Table S3. Supporting data of Fig. 8 (a-c) : Effect of amount of adsorbent (W/g) on the extent of adsorption of Ca^{2+} , Mg^{2+} and Cu^{2+} ions onto chloro-sodalite at different temperatures.

Sr. No.	Dose /gm	% Adsorption of Ca^{2+}			% Adsorption of Mg^{2+}			% Adsorption of Cu^{2+}		
		25 °C	50 °C	75 °C	25 °C	50 °C	75 °C	25 °C	50 °C	75 °C
1	0	0	0	0	0	0	0	0	0	0
2	0.1	11.25	22.29	45.51	8.33	11.26	29.57	23.33	33.33	63.33
3	0.2	42.50	52.02	70.51	19.44	26.76	54.22	40.00	50.00	76.66
4	0.3	59.37	68.91	80.76	27.08	40.84	66.19	53.33	63.33	86.66
5	0.4	70.00	76.35	85.89	36.80	50.70	76.05	66.66	73.33	90.00
6	0.5	73.75	79.73	87.17	43.05	56.33	80.28	71.66	76.66	96.66
7	0.6	80.62	85.13	87.17	50.00	64.78	82.39	75.00	78.33	96.66
8	0.7	84.37	86.48	85.89	55.55	69.01	82.39	80.00	81.66	96.66
9	0.8	85.00	85.13	86.53	62.50	71.83	82.39	83.33	83.33	96.66
10	0.9	86.25	86.48	87.17	65.27	75.35	81.69	85.00	86.66	96.66
11	1	86.25	87.16	87.17	65.27	78.16	81.69	86.66	86.66	96.66