Supplementary material

Table S Pearson's correlation results

		KMnO$_4$ dosages	S-EPS	LB-EPS	TB-EPS	PN	PS	Total EPS	SRT	TTF	Moisture rate of sludge cake	Bound water	τ_y	k	n	steady state viscosity	Hysteresis area
KMnO$_4$ dosages	R	1	-0.055	0.728	0.576	0.693	0.784	0.717	-0.763	-0.725	-0.794	-0.841*	-0.837*	-0.633	0.420	-0.928**	-0.790
	P		0.917	0.101	0.232	0.127	0.065	0.109	0.078	0.103	0.059	0.036	0.038	0.178	0.407	0.008	0.062
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
S-EPS	R	-0.055	1	0.165	0.244	0.309	0.296	0.304	0.050	-0.100	-0.065	0.094	0.251	-0.517	0.676	0.220	-0.155
	P	0.917		0.755	0.642	0.551	0.569	0.558	0.925	0.850	0.902	0.860	0.631	0.294	0.141	0.675	0.769
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
LB-EPS	R	0.728	0.165	1	0.618	0.929**	0.916*	0.933**	-0.253	-0.453	-0.452	-0.353	-0.370	-0.908*	0.823*	-0.546	-0.650
	P	0.101	0.755		0.191	0.007	0.010	0.007	0.628	0.367	0.368	0.492	0.470	0.012	0.044	0.262	0.163
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
TB-EPS	R	0.576	0.244	0.618	1	0.853*	0.848*	.850*	-0.352	-0.402	-0.383	-0.611	-0.441	-0.763	0.498	-0.446	-0.493
	P	0.232	0.642	0.191		0.031	0.033	0.032	0.494	0.429	0.453	0.198	0.381	0.077	0.315	0.375	0.320
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
PN	R	0.693	0.309	0.929**	0.853*	1.000	0.980**	0.999**	-0.273	-0.441	-0.428	-0.453	-0.372	-0.967**	0.815*	-0.494	-0.618
	P	0.127	0.551	0.007	0.031		0.001	0.000	0.601	0.382	0.397	0.367	0.468	0.002	0.048	0.319	0.191
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
PS	R	0.784	0.296	0.916*	0.848*	0.980**	1	0.987**	-0.455	-0.609	-0.600	-0.593	-0.532	-0.948**	0.786	-0.636	-0.757
	P	0.065	0.569	0.010	0.033	0.001		0.000	0.365	0.199	0.208	0.214	0.277	0.004	0.064	0.174	0.081
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Total EPS	R	0.717	0.304	0.933**	0.850*	0.999**	0.987**	1	-0.311	-0.477	-0.465	-0.482	-0.406	-0.966**	0.814*	-0.527	-0.650
	P	0.109	0.558	0.007	0.032	0.000	0.000		0.549	0.339	0.352	0.334	0.424	0.002	0.049	0.282	0.163
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
SRT	R	-0.763	0.050	-0.253	-0.352	-0.273	-0.455	-0.311	1	0.922**	0.957**	0.930*	0.959**	0.237	-0.061	0.911*	0.839*
	P	0.078	0.925	0.628	0.494	0.601	0.365	0.549		0.009	0.003	0.007	0.002	0.652	0.909	0.011	0.037
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
TTF	R	-0.725	-0.100	-0.453	-0.402	-0.441	-0.609	-0.477	0.922**	1	0.988**	0.809	0.880*	0.434	-0.328	0.868*	.971**
	P	0.103	0.850	0.367	0.429	0.382	0.199	0.339	0.009		0.000	0.051	0.021	0.389	0.525	0.025	0.001
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Moisture rate of sludge cake	R	-0.794	-0.065	-0.452	-0.383	-0.428	-0.600	-0.465	0.957**	0.988**	1	0.855*	0.918**	0.420	-0.298	0.916*	0.956**
	P	0.059	0.902	0.368	0.453	0.397	0.208	0.352	0.003	0.000		0.030	0.010	0.407	0.566	0.010	0.003
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Bound water	R	-0.841*	0.094	-0.353	-0.611	-0.453	-0.593	-0.482	0.930*	0.809	0.855*	1	0.954**	0.361	0.082	0.909*	0.759
	P	0.036	0.860	0.492	0.198	0.367	0.214	0.334	0.007	0.051	0.030		0.003	0.482	0.877	0.012	0.080
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
τ_y	R	-0.837*	0.251	-0.370	-0.441	-0.372	-0.532	-0.406	0.959**	0.880*	0.918**	0.954**	1	0.273	-0.035	0.971**	0.827*
	P	0.038	0.631	0.470	0.381	0.468	0.277	0.424	0.002	0.021	0.010	0.003		0.601	0.947	0.001	0.042
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
k	R	-0.633	-0.517	-0.908*	-0.763	-0.967**	-0.948**	-0.966**	0.237	0.434	0.420	0.361	0.273	1.000	-0.928**	0.410	0.615
	P	0.178	0.294	0.012	0.077	0.002	0.004	0.002	0.652	0.389	0.407	0.482	0.601		0.008	0.419	0.194
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
n	R	0.420	0.676	0.823*	0.498	0.815*	0.786	0.814*	-0.061	-0.328	-0.298	0.082	-0.035	-0.928**	1	-0.196	-0.516
	P	0.407	0.141	0.044	0.315	0.048	0.064	0.049	0.909	0.525	0.566	0.877	0.947	0.008		0.709	0.295
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
steady state viscosity	R	-0.928**	0.220	-0.546	-0.446	-0.494	-0.636	-0.527	0.911*	0.868*	0.916*	0.909*	0.971**	0.410	-0.196	1	0.865*
	P	0.008	0.675	0.262	0.375	0.319	0.174	0.282	0.011	0.025	0.010	0.012	0.001	0.419	0.709		0.026

	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Hysteresis area	R	-0.790	-0.155	-0.650	-0.493	-0.618	-0.757	-0.650	0.839*	0.971**	0.956**	0.759	0.827*	0.615	-0.516	0.865*	1
	P	0.062	0.769	0.163	0.320	0.191	0.081	0.163	0.037	0.001	0.003	0.080	0.042	0.194	0.295	0.026	
	N	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

*Corrlelation is significant at the 0.05 level (2-tailed). **Corrlelation is significant at the 0.01 level (2-tailed).

N is the numbers of the sludge sample.