Electronic Supplementary Material (ESI) for Environmental Science: Nano. This journal is © The Royal Society of Chemistry 2019

# **Supplementary**

Fig. 1:

1d:

### Paired Samples Test

				Std. Error	95% Confidence Interval of the Difference				
-7		Mean	Std. Deviation	Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Control - Al13low	7.38333	.76376	.44096	5.48604	9.28062	16.744	2	.004
Pair 2	Control - Almlow	7.38333	.65064	.37565	5.76705	8.99961	19.655	2	.003
Pair 3	Control - Al13high	6.92834	1.00000	.57735	4.44420	9.41249	12.000	2	.007
Pair 4	Control - Almhigh	24.26982	1.40000	.80829	20.79203	27.74761	30.026	2	.001
Pair 5	Control - pH4.56	12.54062	.50000	.28868	11.29855	13.78269	43.442	2	.001
Pair 6	Control - pH3.60	8.79123	1.30000	.75056	5.56185	12.02061	11.713	2	.007
Pair 7	Al13high - pH4.56	5.61228	.50002	.28868	4.37017	6.85438	19.441	2	.003
Pair 8	Almhigh - pH3.60	-15.47859	.10003	.05775	-15.72708	-15.23010	-268.017	2	.000

3d:

### Paired Samples Test

		Paired Differences							
				Std. Error	95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Control - Al13low	1.82000	3.00000	1.73205	-5.63241	9.27241	1.051	2	.404
Pair 2	Control - Almlow	.38000	2.00000	1.15470	-4.58828	5.34828	.329	2	.773
Pair 3	Control - Al13high	-6.66837	2.90000	1.67432	-13.87238	.53563	-3.983	2	.058
Pair 4	Control - Almhigh	16.89159	2.80000	1.61658	9.93600	23.84718	10.449	2	.009
Pair 5	Control - pH4.56	41147	2.00000	1.15470	-5.37975	4.55681	356	2	.756
Pair 6	Control - pH3.60	-4.16086	1.50000	.86603	-7.88707	43465	-4.805	2	.041
Pair 7	Al13high - pH4.56	6.25690	.90002	.51962	4.02114	8.49267	12.041	2	.007
Pair 8	Almhigh - pH3.60	-21.05245	1.30001	.75056	-24.28185	-17.82305	-28.049	2	.001

7d:

### Paired Samples Test

		Paired Differences							
				Std. Error	95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Control - Al13low	4.93000	.50000	.28868	3.68793	6.17207	17.078	2	.003
Pair 2	Control - Almlow	4.93000	1.00000	.57735	2.44586	7.41414	8.539	2	.013
Pair 3	Control - Al13high	12.64146	1.10000	.63509	9.90890	15.37402	19.905	2	.003
Pair 4	Control - Almhigh	20.82180	1.10138	.63588	18.08583	23.55777	32.745	2	.001
Pair 5	Control - pH4.56	4.10006	.00010	.00006	4.09981	4.10030	72353.941	2	.000
Pair 6	Control - pH3.60	4.22951	.10000	.05774	3.98109	4.47793	73.255	2	.000
Pair 7	Al13high - pH4.56	-8.54140	1.10000	.63509	-11.27396	-5.80884	-13.449	2	.005
Pair 8	Almhigh - pH3.60	-16.59229	1.20130	.69357	-19.57649	-13.60809	-23.923	2	.002

10d:

## Paired Samples Test

				Std. Error	95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Control - Al13low	4.52333	2.56580	1.48137	-1.85047	10.89714	3.053	2	.093
Pair 2	Control - Almlow	5.89333	3.05505	1.76383	-1.69583	13.48250	3.341	2	.079
Pair 3	Control - Al13high	9.31307	2.08154	1.20178	4.14224	14.48389	7.749	2	.016
Pair 4	Control - Almhigh	25.63375	3.25179	1.87742	17.55584	33.71165	13.654	2	.005
Pair 5	Control - pH4.56	4.26339	1.60731	.92798	.27061	8.25617	4.594	2	.044
Pair 6	Control - pH3.60	4.39284	1.60697	.92778	.40091	8.38478	4.735	2	.042
Pair 7	Al13high - pH4.56	-5.04968	.50000	.28868	-6.29175	-3.80761	-17.493	2	.003
Pair 8	Almhigh - pH3.60	-21.24090	1.70000	.98150	-25.46394	-17.01787	-21.641	2	.002