

## Supplementary Materials

Experiments	Electrolyte	
	Anolyte	Catholyte
System I	0.5 M K <sub>2</sub> SO <sub>4</sub>	0.5 M K <sub>2</sub> SO <sub>4</sub>
System II	Distilled water	Distilled water

**SM. Table 1** Experimental details during electrokinetic process

Two sample t Test (12-Nov-15 12:43:33)

### Notes

X-Function	Two sample t Test
User Name	home
Time	12-Nov-15 12:43:33

### Input Data

	Data	Range
1st Data Range	[Book2]Sheet1!A	[1*:25*]
2nd Data Range	[Book2]Sheet1!B	[1*:25*]

### Descriptive Statistics

	N	Mean	SD	SEM
A	25	171.8	112.66691	22.53338
B	25	52.72	41.11216	8.22243
Difference		119.08		

### t-Test Statistics

	t Statistic	DF	Prob> t
Equal Variance Assumed	4.96442	48	9.09938E-6
Equal Variance NOT Assumed	4.96442	30.27996	2.51802E-5

Null Hypothesis: mean1-mean2 = 0  
Alternative Hypothesis: mean1-mean2 <> 0  
At the 0.05 level, the difference of the population means is significantly different with the test difference(0)

(a)

Two sample t Test (12-Nov-15 14:26:05)

### Notes

X-Function	Two sample t Test
User Name	home
Time	12-Nov-15 14:26:05

### Input Data

	Data	Range
Group Range	[Book2]Sheet1!E	[1:5]
Data Range	[Book2]Sheet1!F	[1:5]

### Descriptive Statistics

	N	Mean	SD	SEM
E	5	285.8	146.55954	65.54342
F	5	542	204.39423	91.40788
Difference		-256.2		

### t-Test Statistics

	t Statistic	DF	Prob> t
Equal Variance Assumed	-2.27778	8	0.05225
Equal Variance NOT Assumed	-2.27778	7.25322	0.05554

Null Hypothesis: mean1-mean2 = 0  
Alternative Hypothesis: mean1-mean2 <> 0  
At the 0.05 level, the difference of the population means is NOT significantly different with the test difference(0)

(b)

Two sample t Test (12-Nov-15 12:51:06)

Notes

X-Function	Two sample t Test
User Name	home
Time	12-Nov-15 12:51:06

Input Data

	Data	Range
Group Range	[Book2]Sheet1!C	[1:5]
Data Range	[Book2]Sheet1!D	[1:5]

Descriptive Statistics

	N	Mean	SD	SEM
C	5	154.4	31.0129	13.86939
D	5	291.6	94.0654	42.06733
Difference		-137.2		

t-Test Statistics

	t Statistic	DF	Prob> t
Equal Variance Assumed	-3.09744	8	0.01472
Equal Variance NOT Assumed	-3.09744	4.85944	0.02797

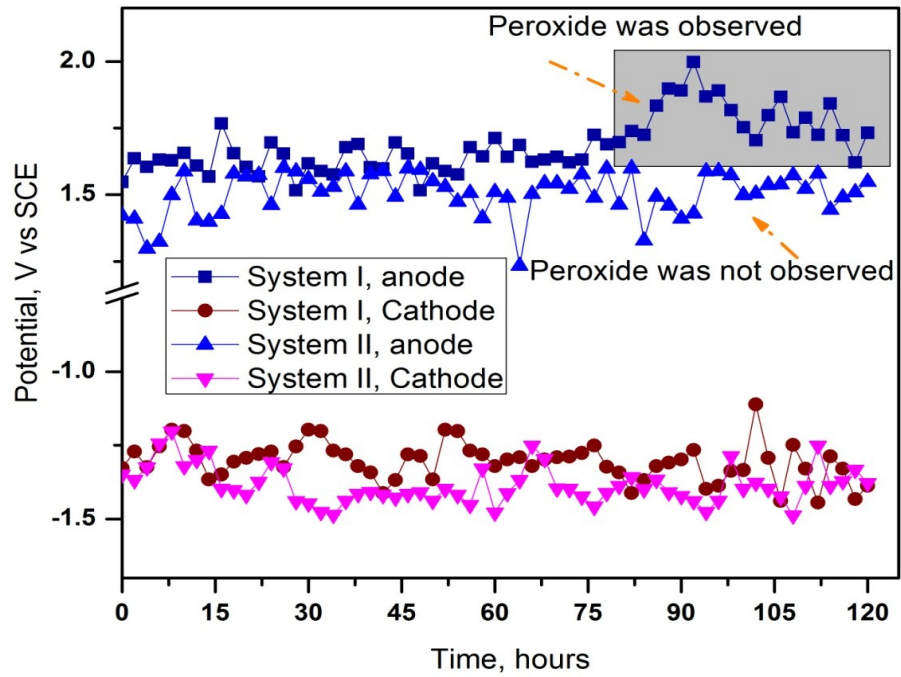
Null Hypothesis: mean1=mean2 = 0  
 Alternative Hypothesis: mean1=mean2 <> 0  
 At the 0.05 level, the difference of the population means is significantly different with the test difference(0)

(c)

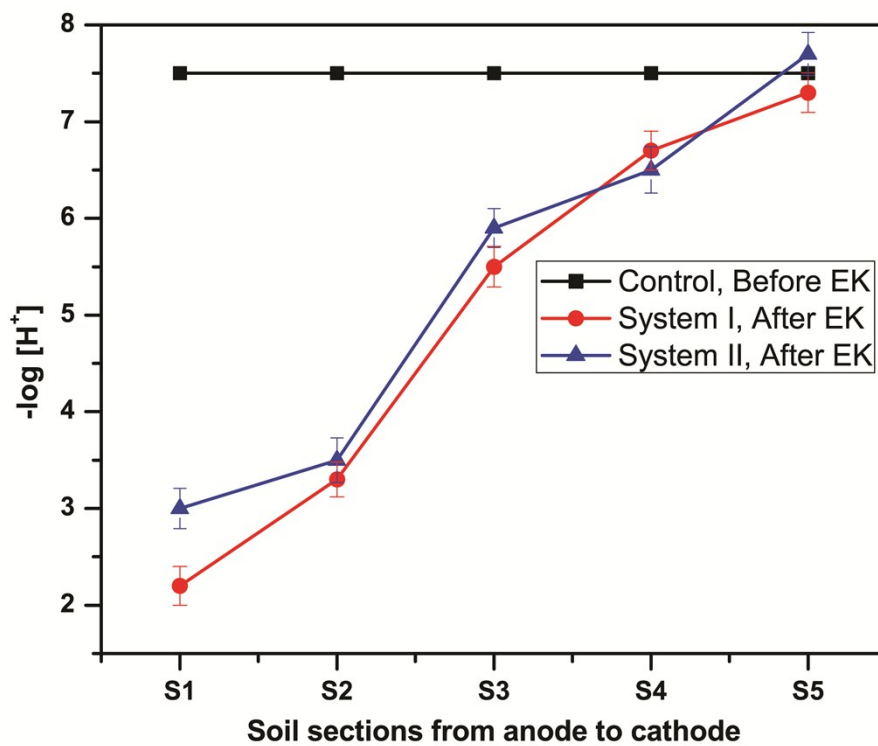
SM. Table 2 Student's T-Test analysis for various experiment (a) EOF, (b) chloride, (c) TOC

S.No	Trace metal, (mg kg <sup>-1</sup> )	Before EK	After EK				
			Soil section from anode to cathode				
			S1	S2	S3	S4	S5
<b>System I</b>							
1	Nickel	0.23	0.01	0.07	0.16	0.13	0.20
2	Chromium	0.25	0.09	0.092	0.024	0.087	0.17
3	Copper	5.5	8.50	3.20	3.00	3.74	3.60
<b>System II</b>							
1	Nickel	0.23	0.09	0.12	0.19	0.15	0.21
2	Chromium	0.25	0.176	0.21	0.082	0.149	0.47
3	Copper	5.5	4.94	4.02	3.38	3.96	3.97

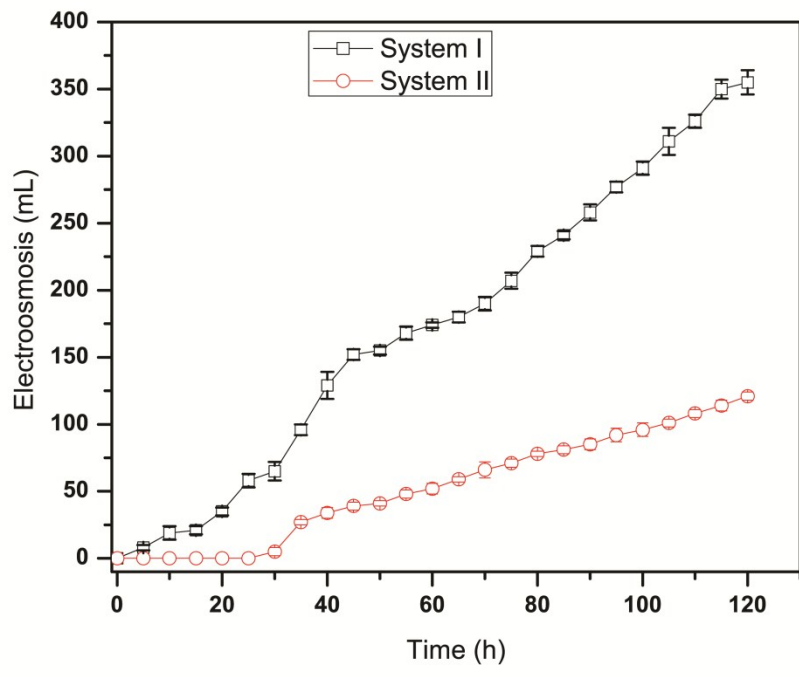
SM. Table 3 Trace metals concentration in different sections in contaminated soil before and after electrokinetic experiment.



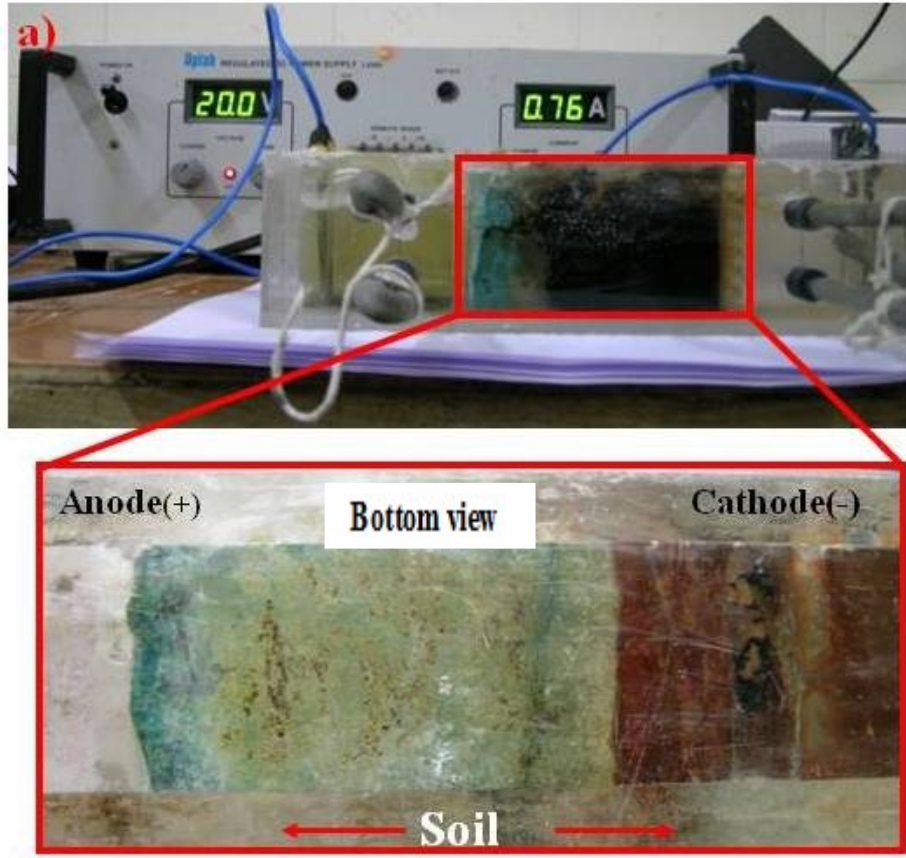
SM. Fig. 1 Measurement of potential during electrokinetic process



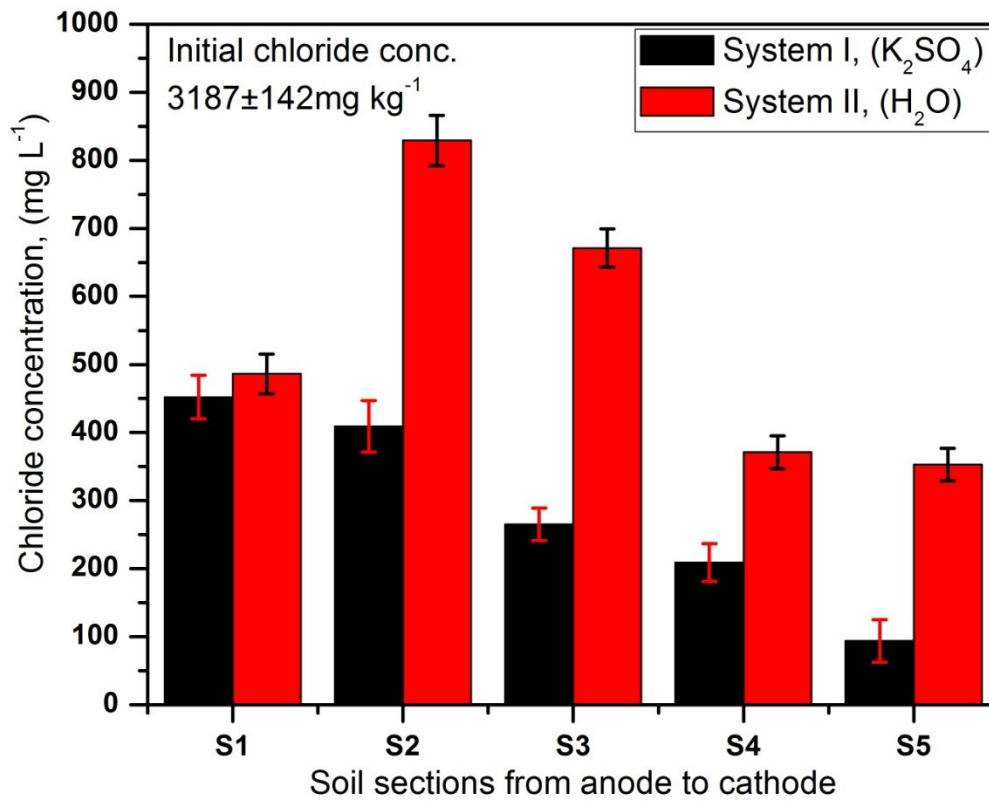
SM. Fig. 2 pH profile of the soil after completing electrokinetic system



**SM. Fig. 3** Measurement of electroosmosis during electrokinetic experiment



SM. Fig. 4. The mobility of dyes in soil compartment during electrokinetic process



SM. Fig. 5 Mobility of chloride in contaminated soil before and after electrokinetic experiment.