**Supplementary Material**

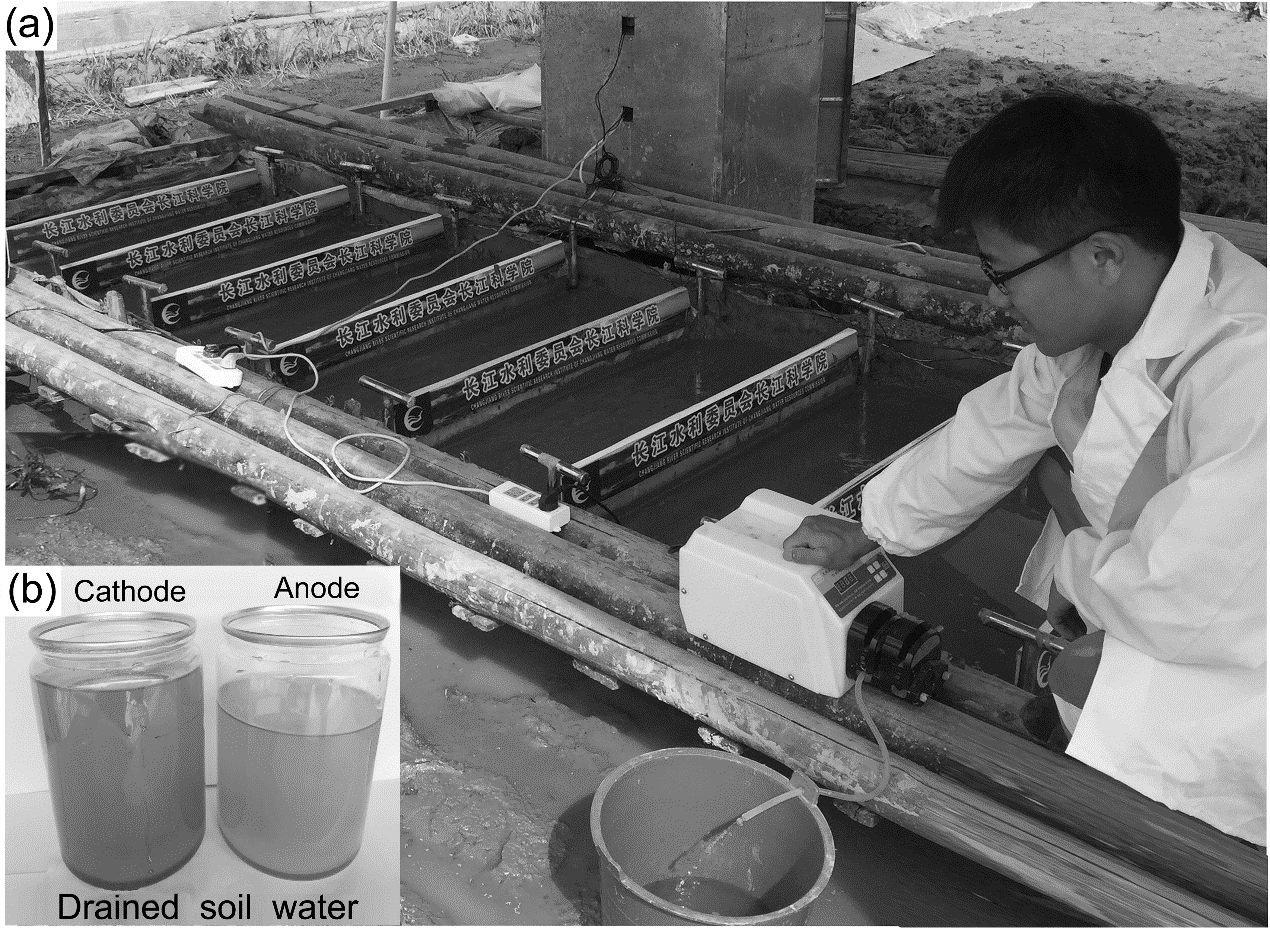
**Environmental Science and Pollution Research**

**Improved isolation of cadmium from paddy soil by novel technology based on pore water drainage with graphite-contained electro-kinetic geosynthetics**

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**Figure S1.** (a) Soil water drainage via novel electro-kinetic geosynthetic equipment and effluent collected from both (b) cathode and anode

**Table S1**

Electro-kinetic (EK) remediation experimental design for groups A and B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Group | Plot dimension (m) | Saturation solution | Electricity applied | EK mode |
| A | 1.50×0.86×0.25 | 0.03M ferric chloride + 0.03M calcium chloride | No | None |
| B | 1.50×0.86×0.25 | 0.03M ferric chloride + 0.03M calcium chloride | Yes | 12h On + 12h Off + 8h On |



**Figure S2.** Soil water drainage performance for (a) group A; and (b) group B



**Figure S3.** Variations of electric current intensity measured for group B



**Figure S4.** Variations in anode and cathode effluent iron (Fe) concentrations for (a) group A; and (b) group B



**Figure S5.** Variations in anode and cathode effluent pH for (a) group A; and (b) group B



**Figure S6.** Variations in anode and cathode effluent chlorine (Cl) concentrations for (a) group A; and (b) group B

**Table S2**

Average soil iron (Fe) and chlorine (Cl) residuals for groups A and B

|  |  |  |  |
| --- | --- | --- | --- |
| Group | Fe |  |  |
|  | Total added (g) | Removeda (g) | Residual (g) |
| A | 79.80 | 52.34 | 27.46 |
| B | 79.80 | 63.48 | 16.32 |
| Group | Cl |  |  |
|  | Total added (g) | Removeda (g) | Residual (g) |
| A | 252.90 | 165.50 | 87.40 |
| B | 252.90 | 203.91 | 48.99 |

aRemoval was calculated as the sum content of Fe and Cl contained in the overlying water and soil water drainage.



**Figure S7.** Change in profile distribution of soil iron (Fe) content for (a) group A; and (b) group B with untreated original soil as reference



**Figure S8.** Change in profile distribution of soil chlorine (Cl) content for (a) group A; and (b) group B with untreated original soil as reference