Supporting Information

Recovery of Ammonium and Phosphate using Battery Deionization in a Background Electrolyte

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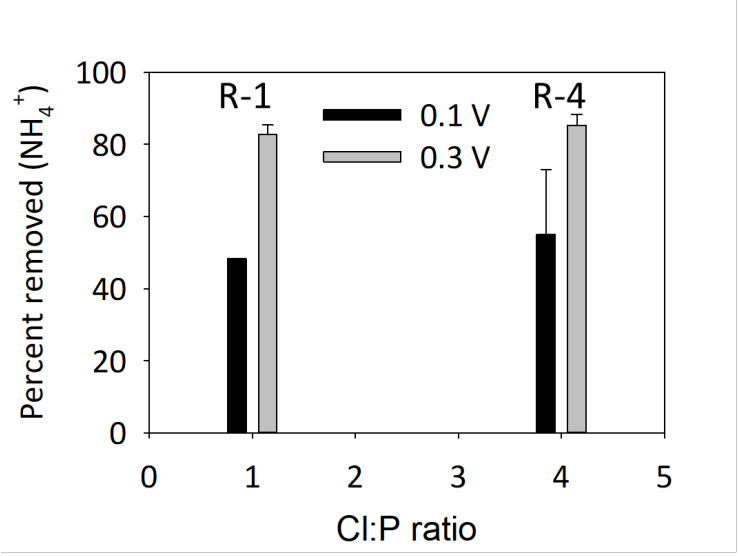

Fig. S1 Removal of NH_4^+ at the applied constant voltages of 0.3 or 0.1 V as a function of chloride/phosphorus (Cl:P) ratio. NH_4^+ (5 mM) concentrations remained constant and the R1 (Cl:P ration of 1) and R-4 (Cl:P ration of 1) solutions were used.

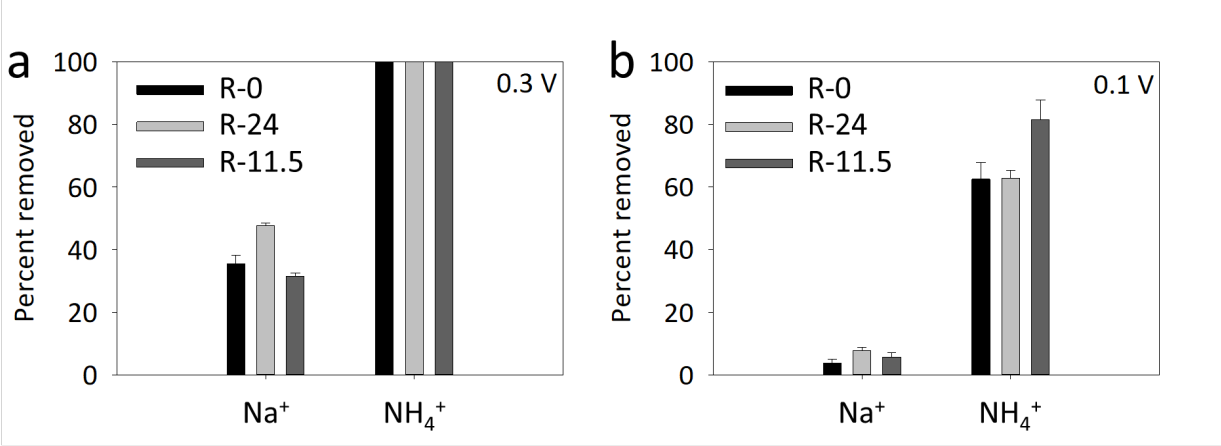

Fig. S2 Removal of cations (Na^+ and NH_4^+) depending on the chloride/phosphorus (Cl:P) ratio at the applied constant voltages of (a) 0.3 or (b) 0.1 V. NH_4^+ (5 mM) and Na^+ (20 mM) concentrations remained constant and the R-0, R-24, and R-11.5 solutions were used.

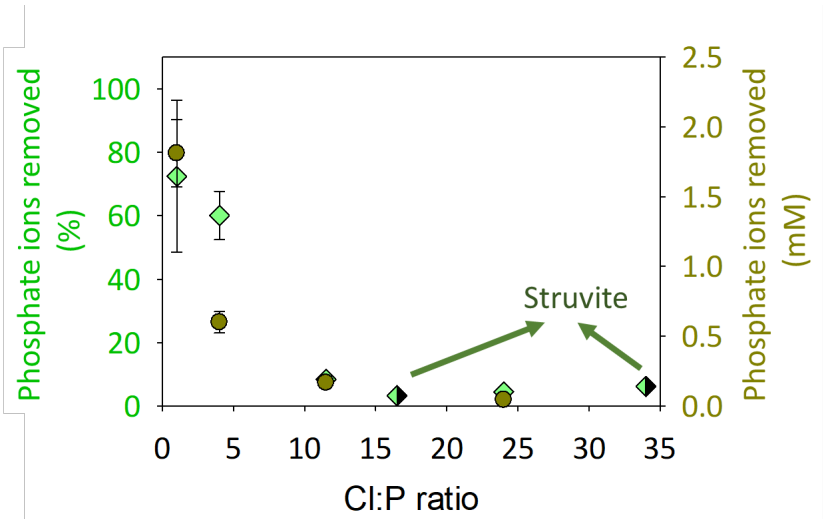

Fig. S3 Phosphate ions removal in terms of percent (trapezoid, green) and molar concentration (circle, dark yellow) as a function of chloride/phosphorus (Cl:P) ratio. In order to generate struvite ($NH_4MgPO_46H_2O$), 5 mM $MgCl_2$ was added to either R-11.5 or R-24 solution. The right-filled trapezoids indicate phosphate ions removal (%) obtained by the tests for struvite formation.