

## Accepted Manuscript

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PII: S1383-5866(17)30985-1

DOI: <http://dx.doi.org/10.1016/j.seppur.2017.06.078>

Reference: SEPPUR 13856

To appear in: *Separation and Purification Technology*

Received Date: 29 March 2017

Revised Date: 14 June 2017

Accepted Date: 30 June 2017

Please cite this article as: X. Jing, J. Wang, H. Cao, P. Ning, Z. Sun, Rapid selective extraction of V(V) from leaching solution using annular centrifugal contactors and stripping for  $\text{NH}_4\text{VO}_3$ , *Separation and Purification Technology* (2017), doi: <http://dx.doi.org/10.1016/j.seppur.2017.06.078>

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## Rapid selective extraction of V(V) from leaching solution using annular centrifugal contactors and stripping for $\text{NH}_4\text{VO}_3$

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**Abstract:** The efficient and rapid selective extraction of V(V) from leaching solution with sulfated primary amine N1923 was demonstrated. In the single-stage extraction using annular centrifugal contactor (ACC), the influence of the total flow and the speed rotor on extraction percentage of V(V) was investigated using central composite design (CCD), and the results of experimental conditions were analyzed by analysis of variance. The current concentrations of V(V) and Cr(VI) in leaching solution were 23.70g/L and 1.52g/L, respectively. 99.6% of vanadium was extracted and separated from the aqueous solution by employing four-stage countercurrent extraction with annular centrifugal contactors (ACCs). The total contact/resident time of the two phases was 4.8 min, and the separation factor of V(V) and Cr(VI) was 273.9. The two metals in leaching solution can be separated primarily, and then 23.61g/L V(V) and 0.72g/L Cr(VI) in loaded organic phase can be further separated by the stripping. The  $\text{NH}_4\text{VO}_3$  with purity of 99.7% was obtained by two steps of separations and studied by the analyses of XRD, SEM and particle size distribution (PSD). The reactions of extraction and stripping in the separation processes were investigated in order to

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