Electronic Supporting Information (ESI)

Preparation of Volborthite by a Facile Synthetic Chemical Solvent Extraction Method

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Table S1. Mineralogical phases identified for the samples PS-4 to PS-11 using the software Profex. Quantification should be carefully taken into account due to the broad signal obtained for volborthite

Sample	Phases	Observations
PS-4	$Cu_3V_2O_7(OH)_2.2(H_2O)$, Volborthite (ICSD_63282, Monoclinic, C12/m1), 90%. Sodium chloride 6%, Clinoatacamite 4%	Broad peaks corresponding to Volborthite and Clinoatacamite
PS-5	$Cu_3V_2O_7(OH)_2.2(H_2O)$, Volborthite (ICSD_63282, Monoclinic, C12/m1), 99.5%. Sodium chloride 0.5%	Broad peaks corresponding to Volborthite
PS-6	$Cu_3V_2O_7(OH)_2.2(H_2O)$, Volborthite (ICSD_63282, Monoclinic, C12/m1), 99%. Sodium chloride 1%	Broad peaks corresponding to Volborthite
PS-7	$Cu_3V_2O_7(OH)_2.2(H_2O)$, Volborthite (ICSD_63282, Monoclinic, C12/m1), 96%. Sodium chloride 4%	Broad peaks corresponding to Volborthite
PS-8	$Cu_3V_2O_7(OH)_2.2(H_2O)$, Volborthite (ICSD_63282, Monoclinic, C12/m1), 100%	Broad peaks
PS-9	$Cu_3V_2O_7(OH)_2.2(H_2O)$, Volborthite (ICSD_63282, Monoclinic, C12/m1), 99%. Sodium chloride 1%	Broad peaks corresponding to Volborthite
PS-10	$Cu_3V_2O_7(OH)_2.2(H_2O)$, Volborthite (ICSD_63282, Monoclinic, C12/m1), 2%. Sodium chloride 98%	Sharp peaks corresponding to NaCl
PS-11	$Cu_3V_2O_7(OH)_2.2(H_2O)$, Volborthite (ICSD_63282, Monoclinic, C12/m1), 99%. Sodium chloride 1%	

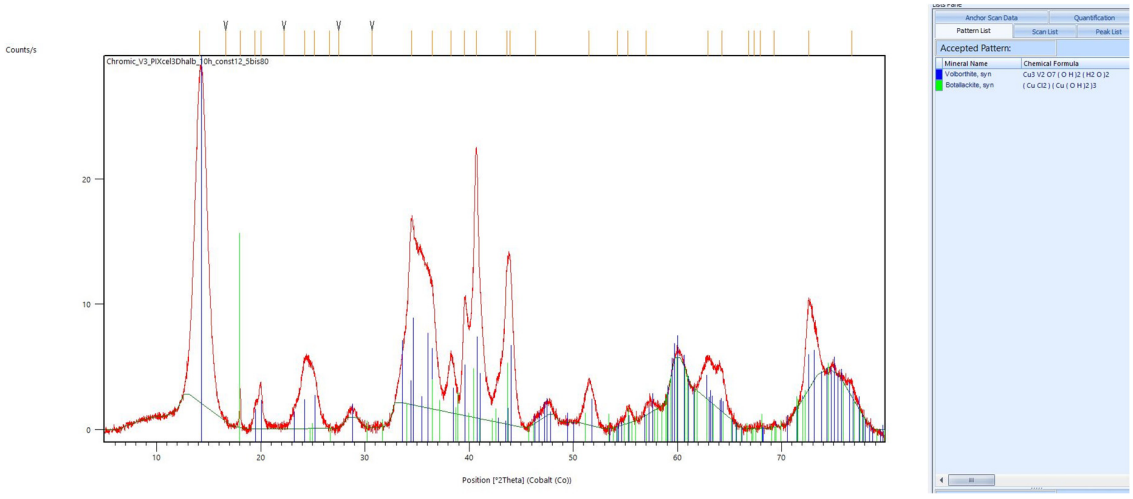

Figure S1. X-Ray diffraction pattern of Sample PS-1, copper vanadate, $Cu_3V_2O_7(OH)_2.2H_2O$, strip solution 0.05 M CuSO4 in 4 M NaCl

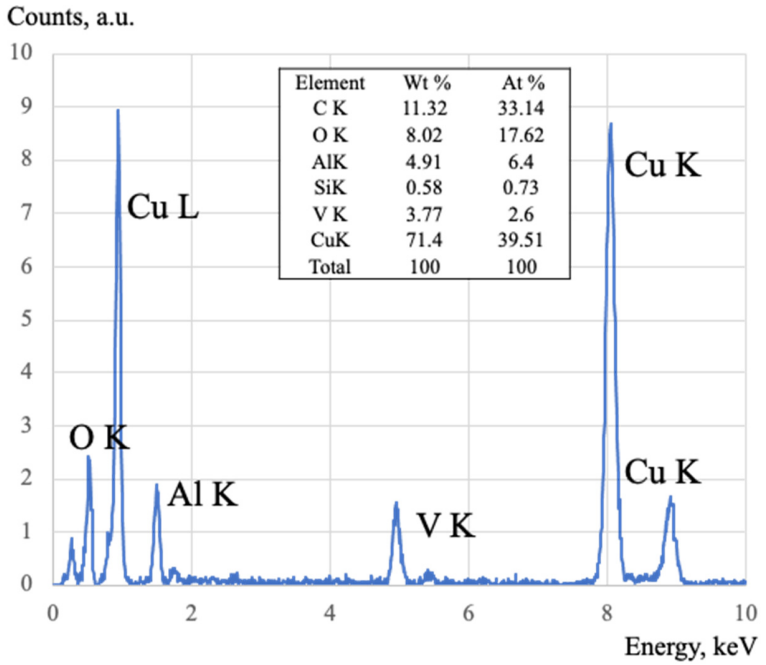

Figure S2. EDS pattern and chemical analysis (inset) of Sample PS-3

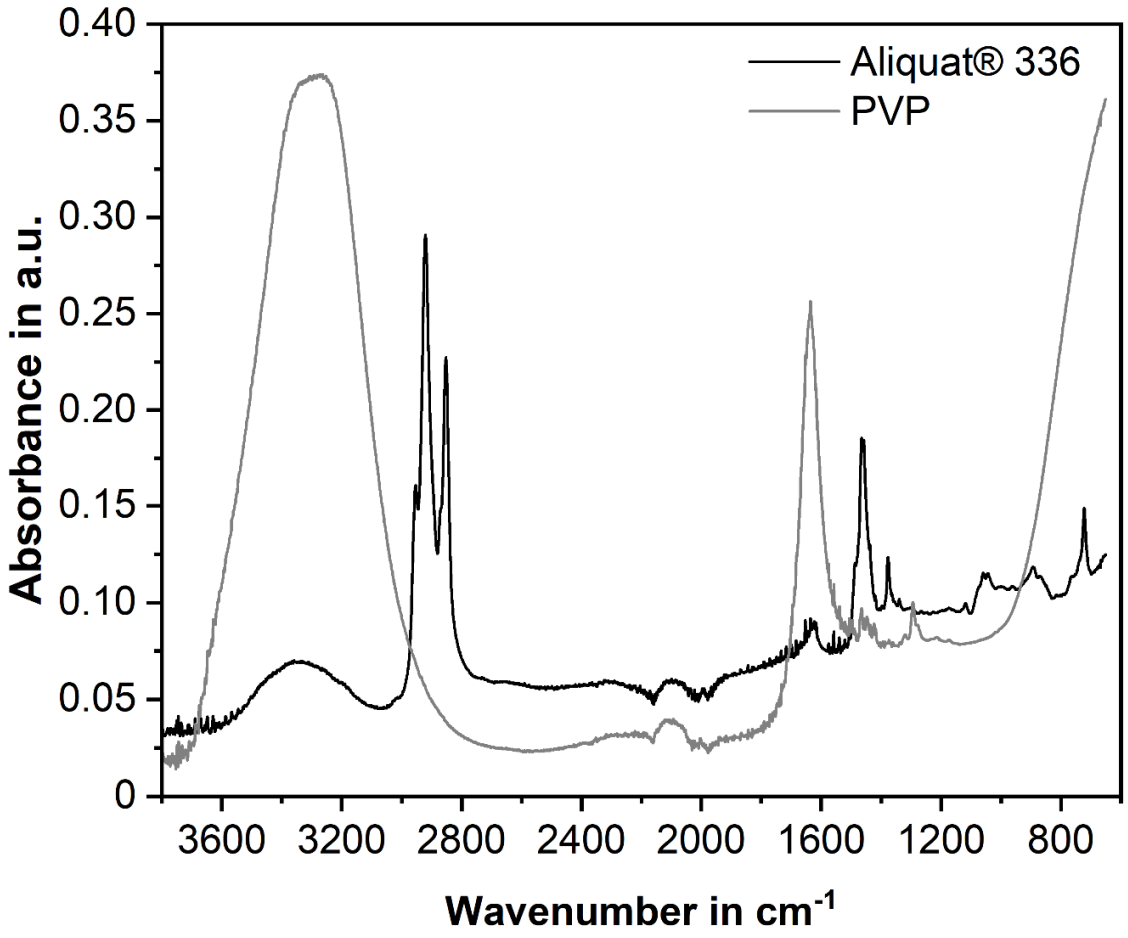

Figure S3. IR spectra of Aliquat 336 and PVP

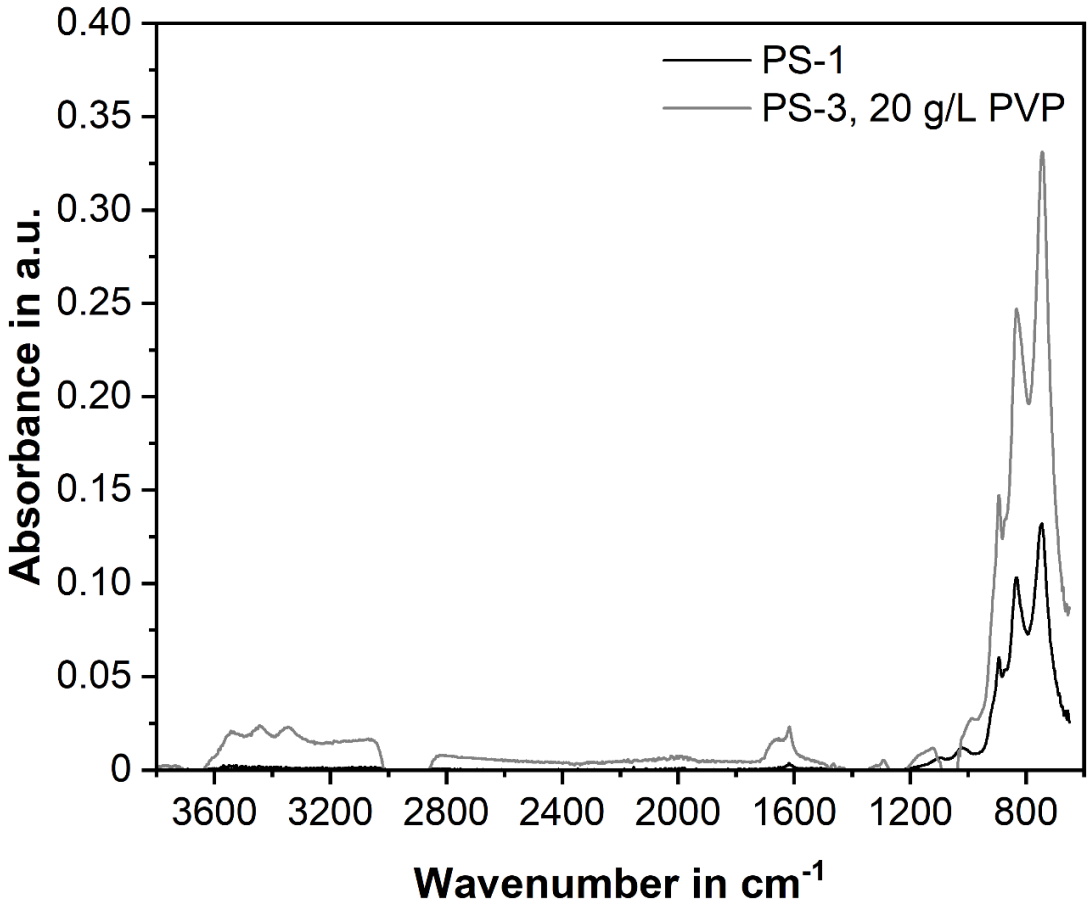

Figure S4. IR spectra of copper vanadate powders PS-1 and PS-3 prepared by precipitation stripping from Aliquat 336 organic solutions, PS-3 prepared in the presence of PVP