

Supporting Information for

Electrolyte Concentration Regulation Boosting Zinc Storage Stability of High-Capacity $K_{0.486}V_2O_5$ Cathode for Bendable Quasi-Solid-State Zinc Ion Batteries

Linpo Li^{1,2}, Shuailei Liu², Wencong Liu², Deliang Ba^{1,2}, Wenyi Liu², Qiuyue Gui², Yao Chen², Zuoqi Hu¹, Yuanyuan Li^{1,*}, Jinping Liu^{2,3,*}

¹School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan 430074, People's Republic of China

School of Chemistry, Chemical Engineering and Life Science, and State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, People's Republic of China

³Key Laboratory for Photonic and Electronic Bandgap Materials, Ministry of Education, School of Physics and Electronic Engineering, Harbin Normal University, Harbin 150025, People's Republic of China

*Corresponding authors. E-mail: liyynano@hust.edu.cn (Y. Y. Li); liujp@whut.edu.cn (J. P. Liu)

Supplementary Figures

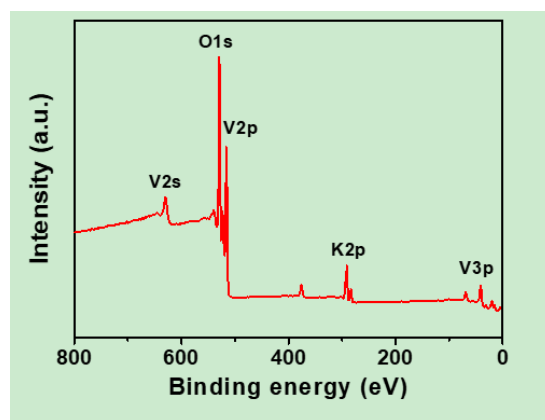


Fig. S1 Full XPS spectrum of KVO

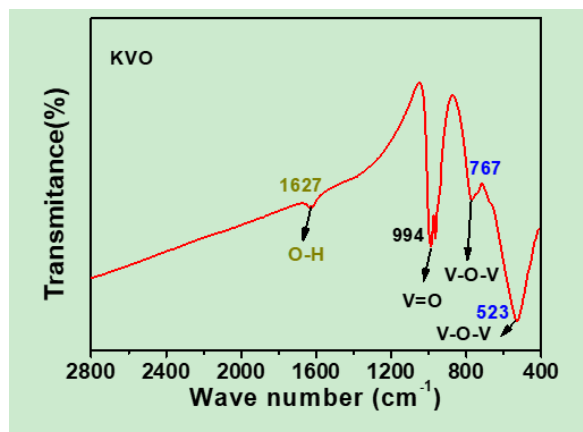


Fig. S2 FT-IR analysis on KVO nanowire cathode

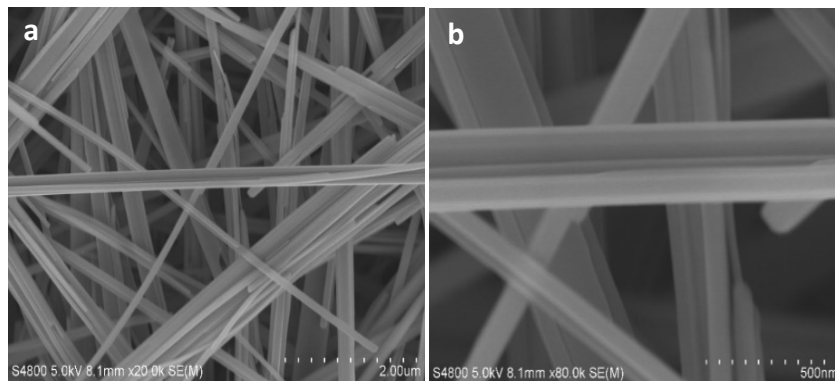


Fig. S3 SEM images of KVO nanowire cathode

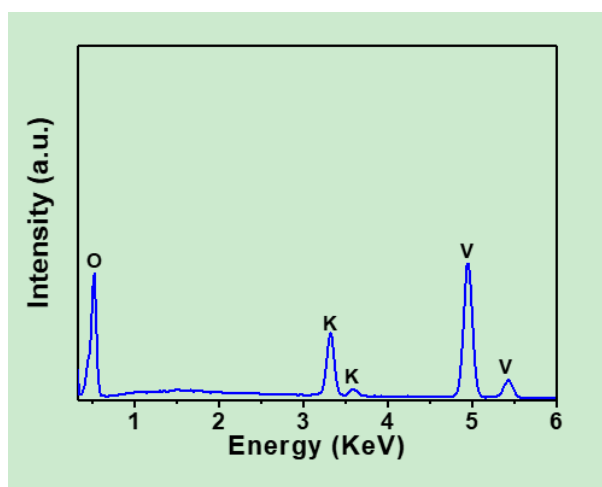


Fig. S4 EDS result of KVO nanowire cathode

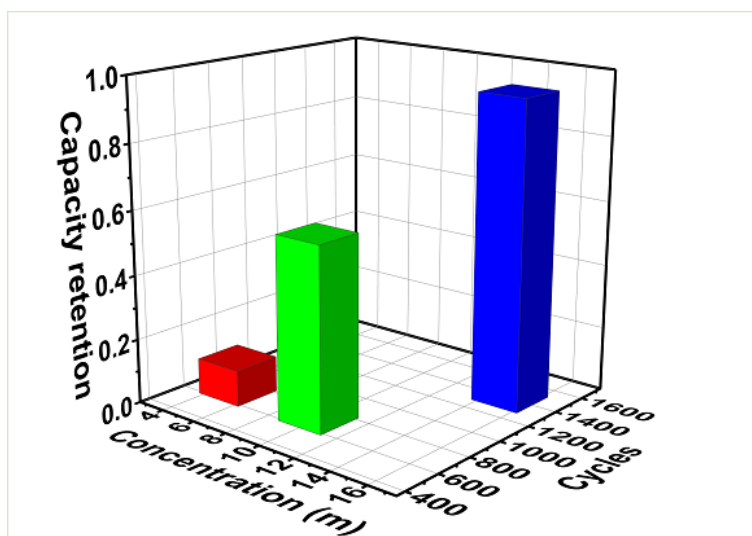


Fig. S5 Cycling comparison of KVO in 5, 10, and 15 m ZnCl₂ electrolytes at 3 A g⁻¹

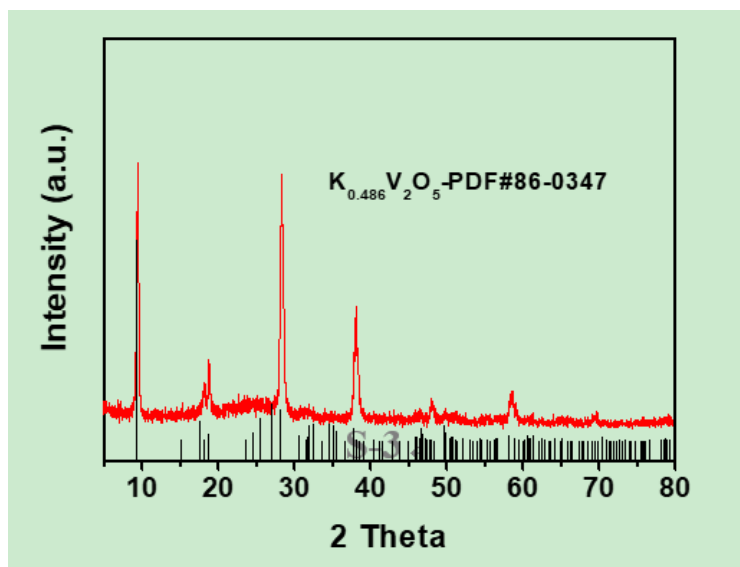


Fig. S6 XRD pattern of the cycled KVO in 15 m ZnCl₂ electrolyte

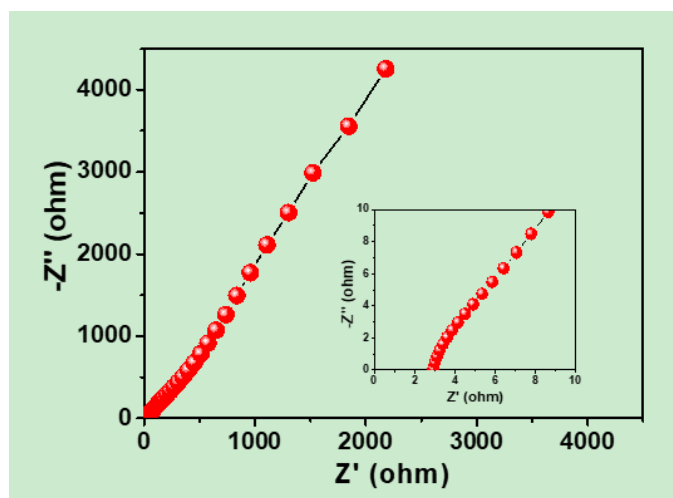


Fig. S7 AC impedance spectrum of CMC-ZnCl₂ gel electrolyte at room temperature

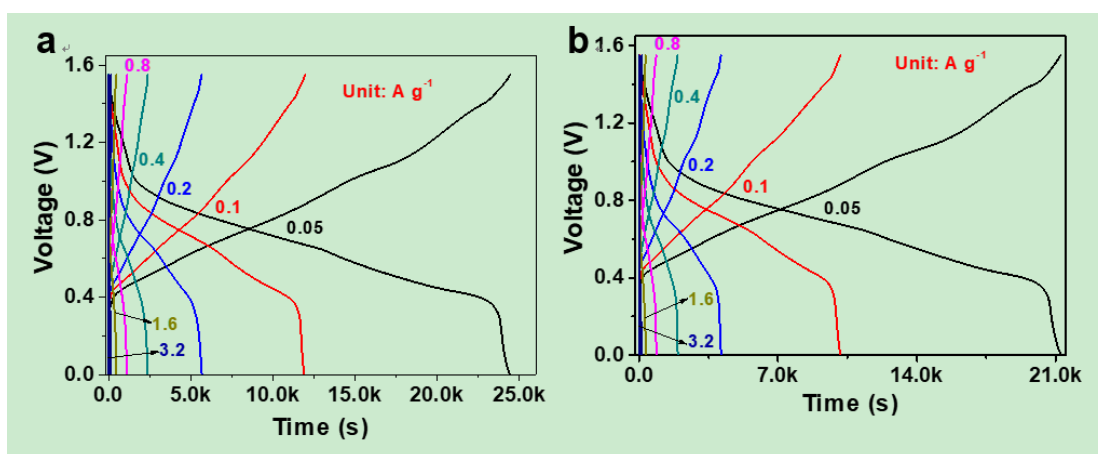


Fig. S8 Charge-discharge profiles of aqueous Zn//KVO cell based on high KVO mass loading (**a**: 5 mg cm⁻²; **b**: 10 mg cm⁻²)