Electronic Supplementary Material (ESI) for Sustainable Energy & Fuels.

Electronic Supplementary Information

Zinc-ion Hybrid Supercapacitor-Battery with Leaf-like ZIF-L/$MgNiO_2$ Micro-spheres Composite and a Zn^{2+}/Sulfonated Poly(ether ether ketone) Gel

Ishita Naskar[a], Partha Ghosal[b] and Melepurath Deepa[a,*]

[a]*Department of Chemistry, Indian Institute of Technology Hyderabad, Kandi-502284, Sangareddy, Telangana, India*

[b]*Defence Metallurgical Research Laboratory, Defence Research and Development Organization (DRDO), Hyderabad 500058, Telangana, India*

Figure S1 Zn^{2+}/SPEEK gel: Solubility test: Effect of increasing concentration of salt ($ZnSO_4.7H_2O$) on the nature of the gel.

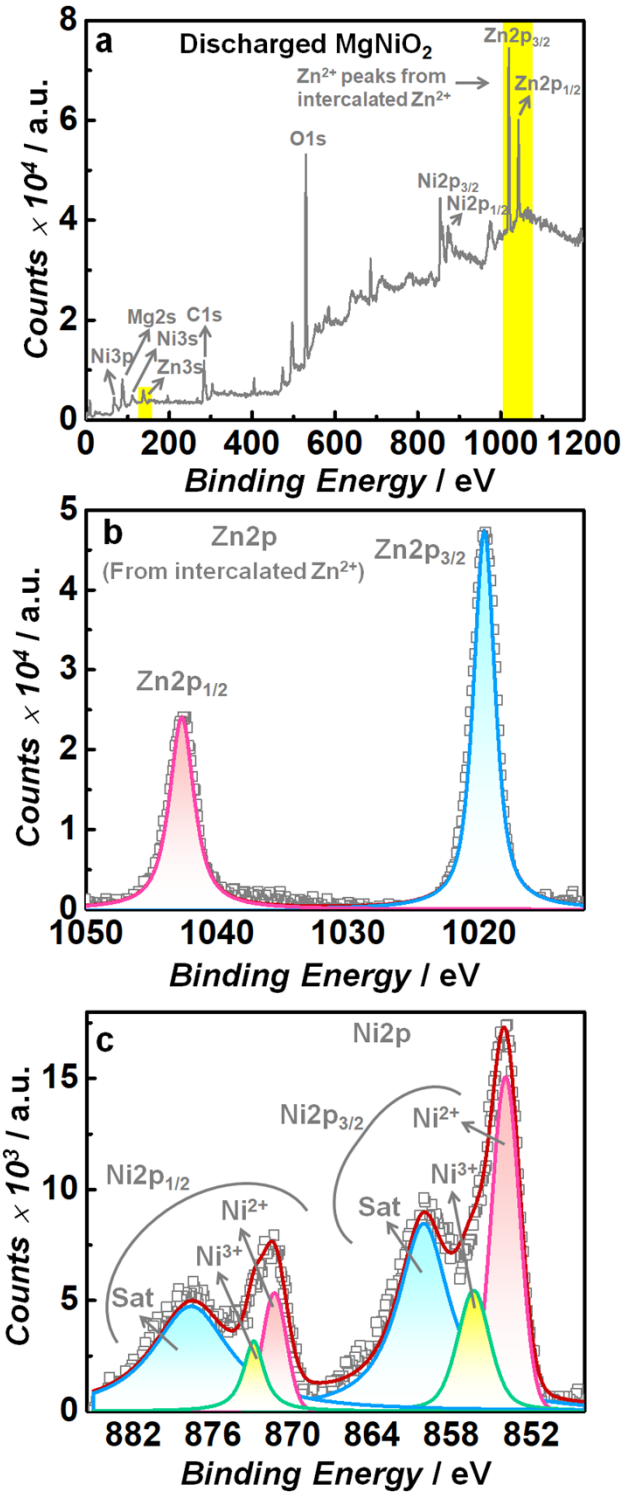

Figure S2 XPS spectra: (a) Survey spectrum and deconvoluted core level spectra of (b) Zn2p and (c) Ni2p of a fully discharged $MgNiO_2$ electrode (which was electrochemically cycled and discharged in a Zn^{2+}/SPEEK electrolyte).

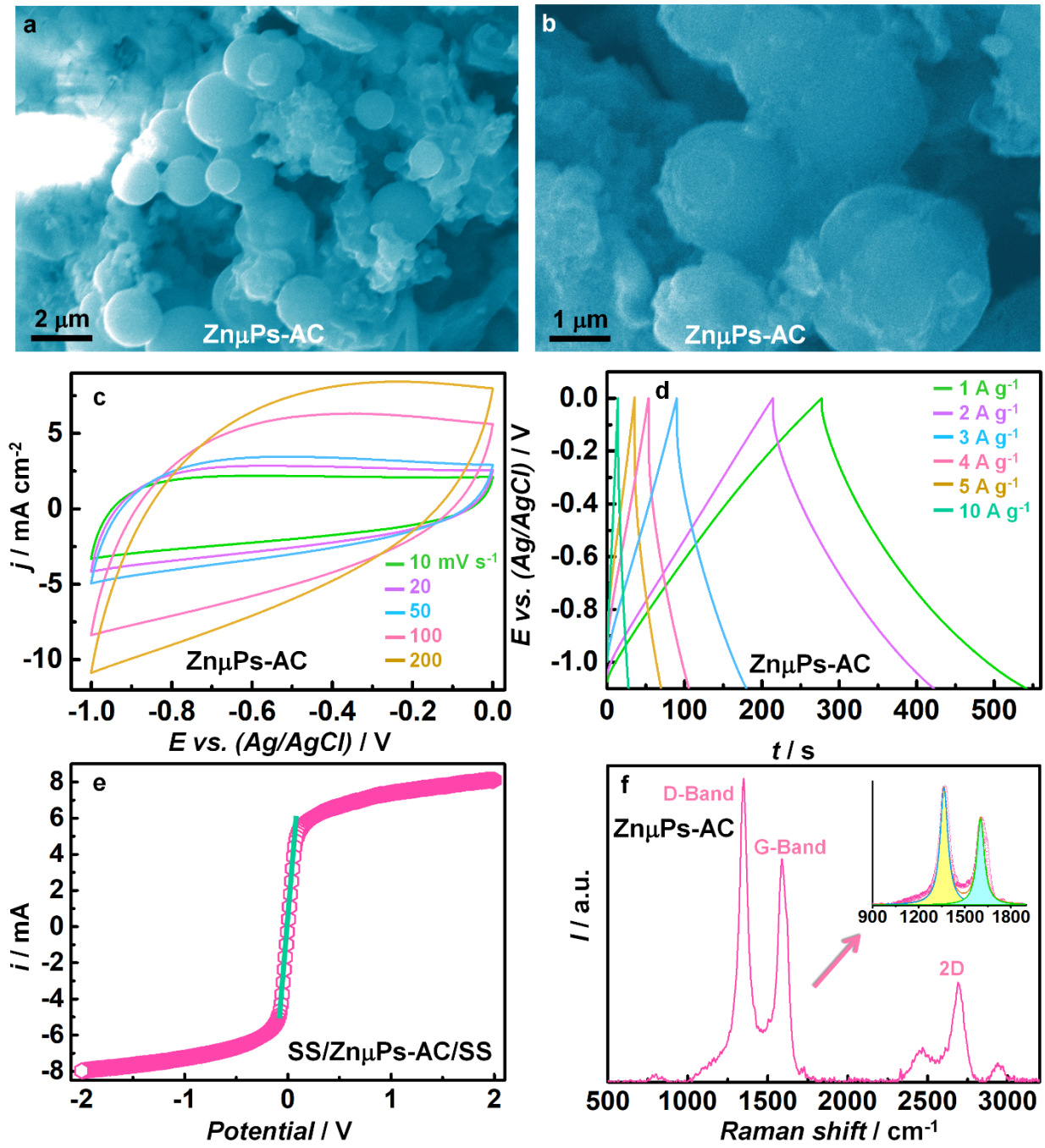

Figure S3 (a,b) FE-SEM images of ZnμPs-AC composite. (c) CV and (d) GCD plots of the ZnμPs-AC composite in a 3-electrode configuration with a Zn^{2+}/SPEEK gel electrolyte. (e) I-V characteristics of SS/ZnμPs-AC/SS configuration. (f) Raman spectrum of the ZnμPs-AC composite; inset shows the Gaussian-Lorentzian fits for the D and G bands.