

Abstract Submitted  
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**Oxidation-Reduction Potential of Iron Encapsulated by Ferritin** JACOB EMBLEY, JOHN COLTON, RICHARD WATT, TREVOR SMITH, CAMERON OLSEN, KEVIN ZENNER, STEPHEN ERICKSON, Brigham Young Univ - Provo — Ferritin is a naturally occurring spherical protein about 10 nm in diameter, with a hollow interior that can encapsulate up to 4500 Fe atoms in a ferrihydrite iron oxide nanoparticle. Due to the unique properties of ferritin in maintaining the structure of the iron nanoparticles, it has potential for use in nanobattery devices. We are characterizing the reduction-oxidation potential of these nanoparticles under varying conditions using electrochemical techniques. We have found that the presence of different salt anions with the ferritin can significantly alter the oxidation-reduction potential. As a result of this difference in oxidation-reduction potential, ferritin could be utilized in the electrodes of a nanobattery.

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