

Case Study

Research and Development in Nanomaterials for Battery Applications

CUSTOMER: U.S. Department of Energy (DoE)
CONTRACT #: DE-SC-0000941
PROJECT NAME: SBIR Project, "Development of Nanostructured High-Voltage Cathode Materials for Use in Advanced Lithium-Ion Cells"
PROJECT DURATION: 2009-2010

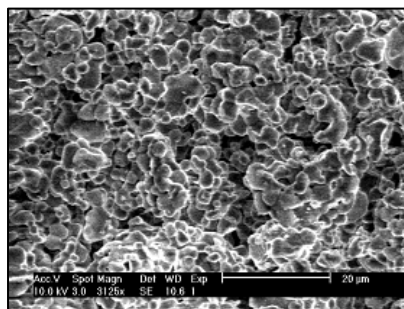
OVERVIEW

The US Department of Energy solicited a SBIR/STTR request for proposal (RFP) for the development of new cathode materials for use in Li-ion cells for hybrid electric vehicles (HEVs), plug in hybrid electric vehicles (PHEVs), and other battery applications. In this project, Aegis Technology developed high voltage cathodes based on nanocomposite materials including olivine phosphate (LiCoPO_4) combined with carbon. Aegis Technology was awarded the project in 2009 and completed the project in 2010.

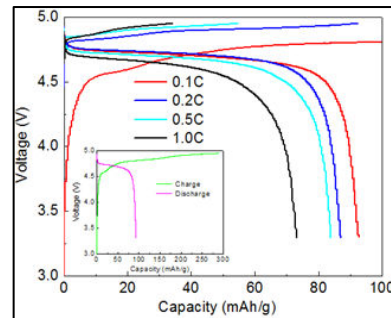
DELIVERABLES

Aegis Technology delivered several high voltage cathode materials. In the process, Aegis Technology conducted:

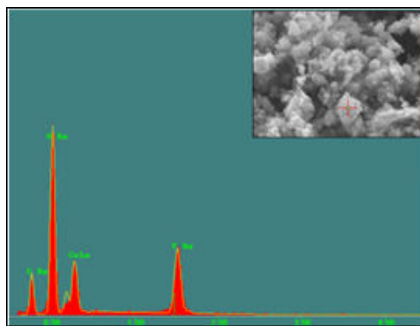
- Processing
- Scanning Electron Microscope (SEM) Characterization
- Energy-dispersive X-Ray Spectroscopy (EDS)
- X-ray diffraction characterization (XRD)
- Battery testing (voltage versus capacity curves)



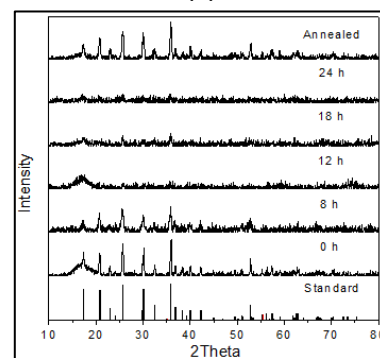
(a)



(b)



(c)



(d)

(a) SEM image of LiCoPO_4 nanomaterial, (b) Voltage versus capacity curves, (c) EDS Analysis of LiCoPO_4 nanomaterial, (d) XRD Analysis of LiCoPO_4

CONTACT

For more information, please contact:
Dr. Timothy Lin, Technical Director, Aegis Technology Inc.
 (714) 554-5511
timlin@aegistech.net
www.aegistech.net