Results for the Silicon Composite Microspheres

Integrity and lithiation characteristics are maintained after cycling (Figure 6b), indicating that the material is capable of sustaining the large volume expansion that is expected during charging and discharging. The low volume expansion of the silicon composite microspheres makes them ideal for use in lithium-ion batteries. Additionally, the silicon composite microspheres show high electrical conductivity, which is necessary for efficient charge transport. These properties make the silicon composite microspheres a promising candidate for use in advanced lithium-ion batteries.

Acknowledgments

This work was supported by an appointment to the NASA Postdoctoral Program at NASA Glenn Research Center administered by Oak Ridge Associated Universities through the NASA Research Alliance Program. Special thanks to: Daniel Waddington (NASA), Dario Centurion (NASA), and Marijke van der Wal (University of Twente).