

Surface Area Increase of Silicon Alloys in Li-Ion Full Cells Measured by Isothermal Heat Flow Calorimetry

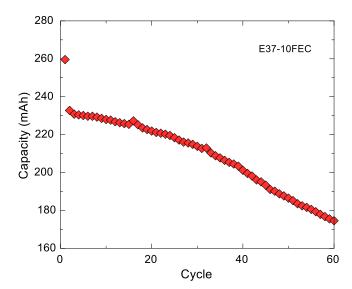
L. J. Krause,*,z T. Brandt, V. L. Chevrier,* and L. D. Jensen

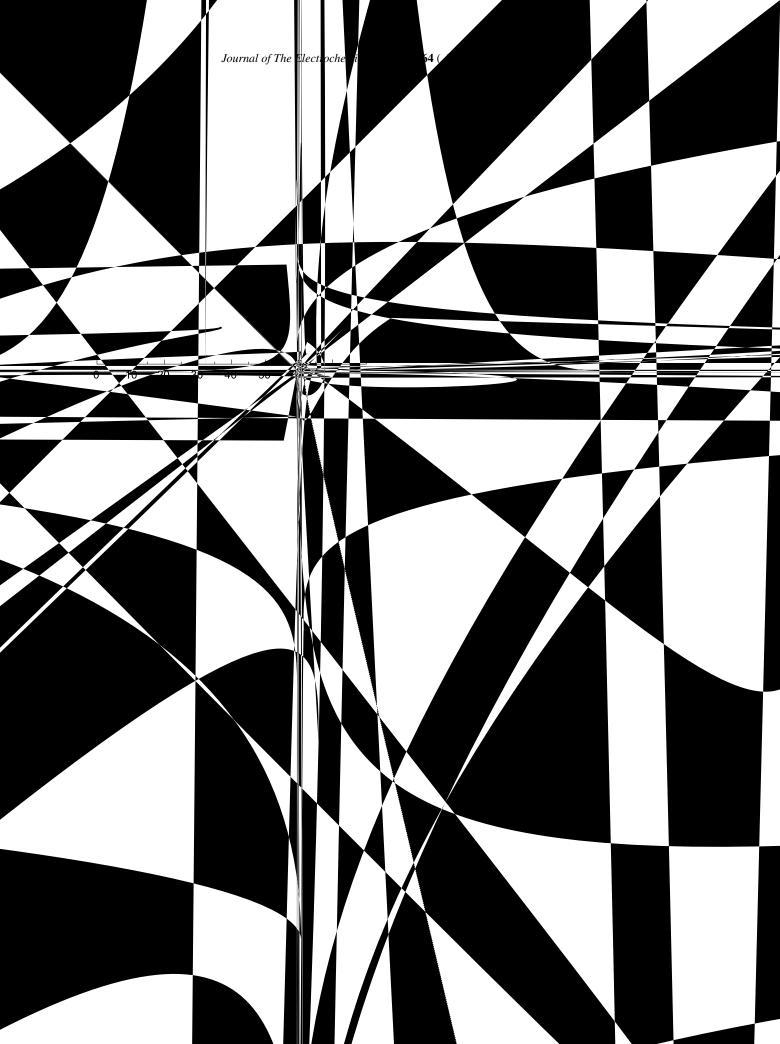
Corporate Research Materials Laboratory, 3M Center, St. Paul, Minnesota 55144-1000, USA

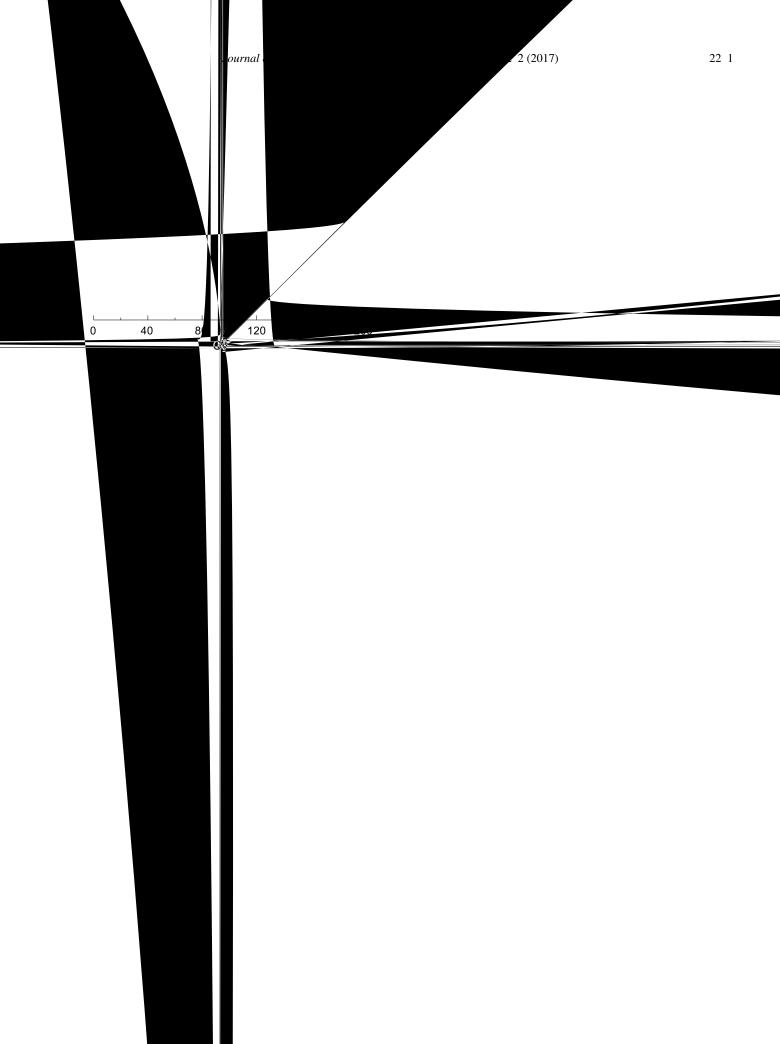
```
h 15
                                                                                         h
                                                     7
                                                                                           h
                          (27
                                       10
                                                                  h h
                                   h
                                         h
          h h
                                     h h
                                                                                   h
      h
                                                 h
      . h () 2017.
                                                                                                        /4.0/),
h h
                                                                              h
                                                                                          10.114 /2.0501712
    h
```

26, 2017*,* 26, 2017. h 4, 2017.

```
h
                                                    70^{\circ}
                                            h 0.
              h. h
                               h
                                           -50^{\circ} . h
                                                  h
         h
         . h
                   h
                                     h
                                  h
                                          h
                               . h
                -115
                                                         .) h
                              24 h .
                    h
                                                            3/7
( / )
               h
                                           h
                        h
                             2602
  Current source.—
                      h
                             h
                       h 10
                                    100
       \pm 0.03% + 6 \mu
                                            200
                          h
                                             h~10~\mu
                       \pm\ 0.015\%\ +\ 1
  h 6
                                < 1
                                       . h
                                           h \pm 0.02\%.
  Isothermal heat flow calorimeter.— h h
                                                       h h 12
      ( h
                                                  )
                                                . h . h
                       . h
                                             h
   37^{\circ} . 
 h
                                                 h
    h
                                                13
                                                            h
   h
```







(2014).

Summary

h - // 2
h - // 3
h - // 4
h -

References

- ., h h , J. Electrochem. Soc., 163, 1146 (2016). , J. Electrochem. Soc., 164, 340 (2017). , *J. Electrochem. Soc.*, **164**, 500 (2017). , . . , . , . . h , h , J. Electrochem. Soc., 158, 7 (2011). , J. Electrochem. Soc., 159, 642 (2012)., J. Electrochem. *Soc.*, **161**, 1 33 (2014). h , J. Electrochem. Soc., **161**, 213 (2013). ., J. Power Sources, 161, 1254 (2006). , J. Electrochem. Soc., 159, 37 , J. Electrochem. Soc., 164, 1 15. . . h , J. Electrochem. Soc., 161, 7 3