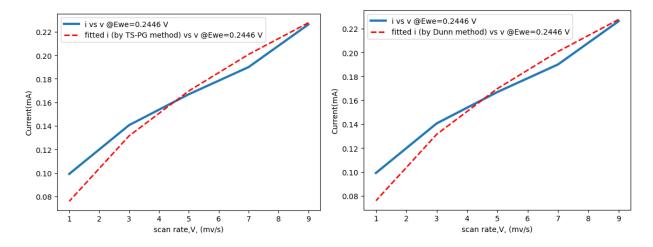


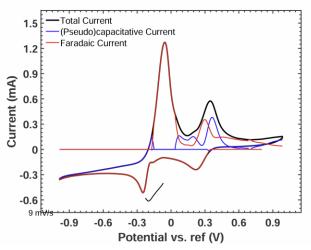
Working Electrode: Deposited CuSO₄ on Glassy Carbon

Counter Electrode: Glassy Carbon

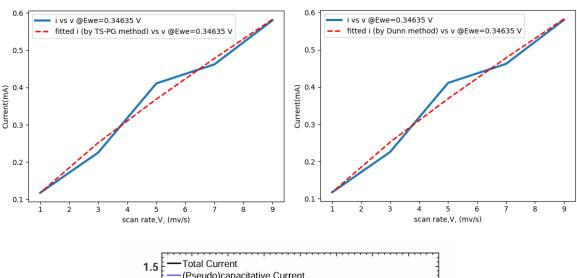
Reference Electrode: Ag|AgCl|KCl 3M

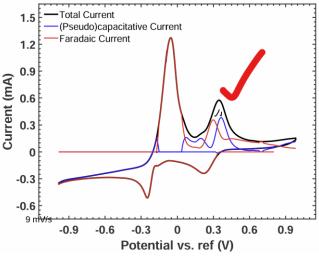
Electrolyte: 0.5M NaCl + 0.05M CuSO4





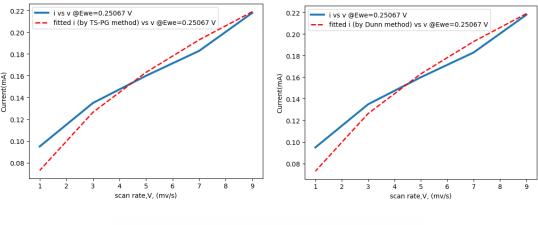
```
TS-PG Method @E=0.2446 V:
                                                                                                                                                                              Dunn Method @E=0.2446 V:
Fitted parameters:
a = 0.0759 b = 0.0000 c = 0.0000
                                                                                                                                                                             Fitted parameters:
a = 0.0759 b = 0.0000
R-squared: 0.9195
                                                                                                                                                                              R-squared: 0.9195
_____
                                                                                                                                                                                                        ----
Current Distributions(@9mv/s):
                                                                                                                                                                              Current Distributions(@9mv/s):
faradaic(mA) = 0.2277 capacitive(ma, ...
Charge Distributions(@9mv/s):
faradaic(mAs) = 44.3891 capacitive(mAs) = 0.0000 pseudocapacitive(mAs) = 0.0000
faradaic = 99.9999% capacitive = 0.0000% pseudocapacitive = 0.0001%
                                                                                                                                                                                faradaic(mA) = 0.2277
                                                                                                                                                                                                                                 (pseudo)capacitive(mA) = 0.0000
                                                                                                                                                                             The advantum | - 0.200 (pseudo)capacitive(mm) | - 0.000 (pseudo)capacitive | - 0.0000 (pseudo)capacitive | - 0.000
                                                                                                                                                                                                                  90% (pseudo)capacitive(mAs) = 0.000%
                                                                                                                                                                                faradaic = 100.0000%
                                                                                                                                                                              Current Distributions(@7mv/s):
Current Distributions(@7mv/s):
  faradaic(mA) = 0.2008
                                                   capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000
                                                                                                                                                                               faradaic(mA) = 0.2008
                                                                                                                                                                                                                                (pseudo)capacitive(mA) = 0.0000
Charge Distributions(@7mv/s):
                                                                                                                                                                              Charge Distributions(@7mv/s):
  faradaic(mAs) = 50.3326 capacitive(mAs) = 0.0000 pseudocapacitive(mAs) = 0.0000
                                                                                                                                                                                faradaic(mAs) = 50.3326 (pseudo)capacitive(mAs) = 0.0000
                                                                                                                                                                                faradaic = 100.0000%
  faradaic = 100.0000%
                                                     capacitive = 0.0000%
                                                                                                                                                                                                                                   (pseudo)capacitive = 0.0000%
                                                                                                     pseudocapacitive = 0.0000%
Current Distributions(@5mv/s):
                                                                                                                                                                              Current Distributions(@5mv/s):
                                                                                                                                                                                                                                 (pseudo)capacitive(mA) = 0.0000
                                                                                                                                                                                faradaic(mA) = 0.1697
  faradaic(mA) = 0.1697
                                                  capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000
                                                                                                                                                                              Charge Distributions(@5mv/s):
Charge Distributions(@5mv/s):
faradaic(mAs) = 59.5441 capacitive(mAs) = 0.0000 pseudocapacitive(mAs) = 0.0000 faradaic = 100.0000% capacitive = 0.0000% pseudocapacitive = 0.0000%
                                                                                                                                                                                faradaic(mAs) = 59.5441 (pseudo)capacitive(mAs) = 0.0000
faradaic = 100.0000% (pseudo)capacitive = 0.0000%
                                                                                                                                                                              Taladaic - 100.0000% (pseudo)capacitive - 0.0000%
                                                                                                                                                                              Current Distributions(@3mv/s):
Current Distributions(@3mv/s):
                                                                                                                                                                                faradaic(mA) = 0.1315
faradaic(mA) = 0.1315 capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000 Charge Distributions(@3mv/s):
                                                                                                                                                                                                                                 (pseudo)capacitive(mA) = 0.0000
                                                                                                                                                                             Charge Distributions(@3mv/s):
faradaic(mAs) = 76.8579 (pseudo)capacitive(mAs) = 0.0000
  faradaic(mAs) = 76.8579 capacitive(mAs) = 0.0000 pseudocapacitive(mAs) = 0.0000
                                                                                                                                                                                faradaic = 100 0000%
                                                                                                                                                                                                                              (pseudo)capacitive = 0.0000%
  faradaic = 100.0000%
                                                     capacitive = 0.0000%
                                                                                                      pseudocapacitive = 0.0000%
                                                                                                                                                                              Current Distributions(@1mv/s):
Current Distributions(@1mv/s):
                                                                                                                                                                                faradaic(mA) = 0.0759
                                                                                                                                                                                                                                 (pseudo)capacitive(mA) = 0.0000
  faradaic(mA) = 0.0759
                                                    capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000
                                                                                                                                                                              Charge Distributions(@1mv/s):
Charge Distributions(@1mv/s):
                                                                                                                                                                                faradaic(mAs) = 133.1142 (pseudo)capacitive(mAs) = 0.0000 faradaic = 100.0000% (pseudo)capacitive = 0.0000%
faradaic (mAs) = 133.1141 capacitive(mAs) = 0.0000 pseudocapacitive(mAs) = 0.0000 faradaic = 100.0000% capacitive = 0.0000% pseudocapacitive = 0.0000%
```

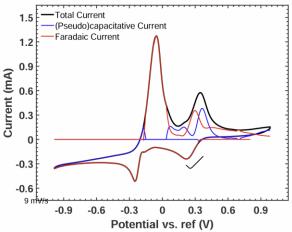




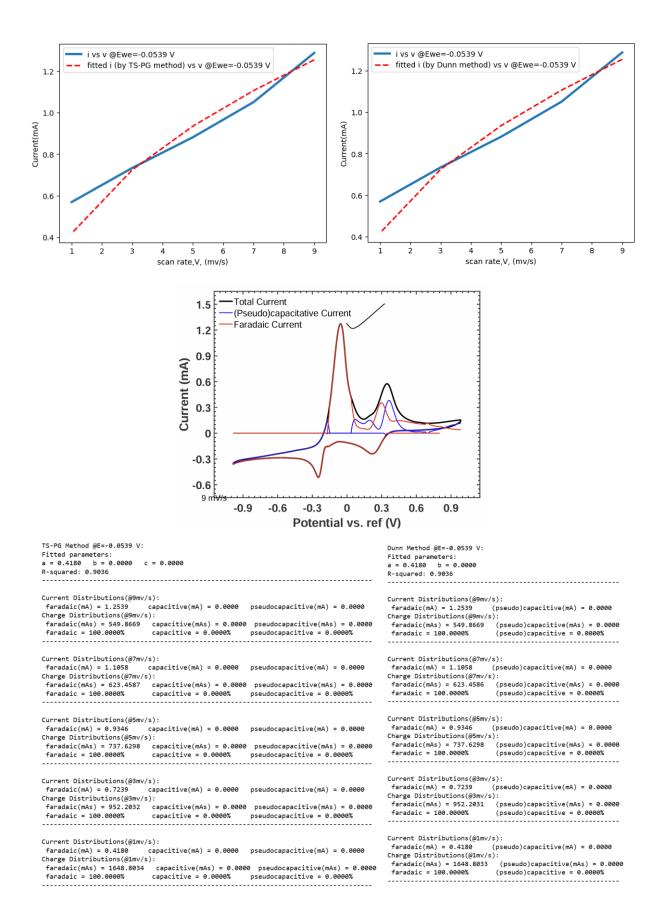
```
TS-PG Method @E=0.34635 V:
                                                                                                                            unn Method @E=0.34635 V:
Fitted parameters:
                                                                                                                          Fitted parameters:
a = 0.0788 b = 0.0385 c = 0.0000
                                                                                                                          a = 0.0788 b = 0.0385
R-squared: 0.9802
                                                                                                                          R-squared: 0.9802
Current Distributions(@9mv/s):
                                                                                                                         Current Distributions(@9mv/s):
faradaic(mA) = 0.2365 capacitive(mA) = 0.3462 pseudocapacitive(mA) = 0.0000 Charge Distributions(@9mv/s):
                                                                                                                         faradaic(mA) = 0.2365 (pseudo)capacitive(mA) = 0.3462
Charge Distributions(@9mv/s):
 faradaic = 40.5876% capacitive = 59.4124% pseudocapacitive = 0.0000%
                                                                                                                           faradaic(mAs) = 9.1183 (pseudo)capacitive(mAs) = 13.3474
faradaic = 40.5876% (pseudo)capacitive = 59.4124%
Current Distributions(@7mv/s):
                                                                                                                         Current Distributions(@7mv/s):
\label{eq:faradaic(mA) = 0.2886} faradaic(mA) = 0.2693 \quad pseudocapacitive(mA) = 0.0000 \\ Charge \ Distributions(@7mv/s):
                                                                                                                          \begin{array}{lll} \mbox{faradaic(mAs)} = 10.3303 & \mbox{capacitive(mAs)} = 13.3359 & \mbox{pseudocapacitive(mAs)} = 0.0000 \\ \mbox{faradaic} = 43.6499\% & \mbox{capacitive} = 56.3501\% & \mbox{pseudocapacitive} = 0.0000\% \\ \end{array} 
                                                                                                                           faradaic(mAs) = 10.3303 (pseudo)capacitive(mAs) = 13.3359
faradaic = 43.6499% (pseudo)capacitive = 56.3501%
faradaic = 43.6499% capacitive = 56.3501% pseudocapacitive = 0.0000%
Current Distributions(@5mv/s):
                                                                                                                         Current Distributions(@5mv/s):
                                                                                                                         faradaic(mA) = 0.1763 (pseudo)capacitive(mA) = 0.1924
Charge Distributions(@5mv/s):
 faradaic(mA) = 0.1763
                                    capacitive(mA) = 0.1924 pseudocapacitive(mA) = 0.0000
Charge Distributions(@5mv/s):
 faradaic(mAs) = 12.2229 capacitive(mAs) = 13.3359 pseudocapacitive(mAs) = 0.0000 faradaic = 47.8227% capacitive = 52.1773% pseudocapacitive = 0.0000%
                                                                                                                           Current Distributions(@3mv/s):
                                                                                                                          Current Distributions(@3mv/s):
faradaic(mA) = 0.1366 capacitive(mA) = 0.1154 pseudocapacitive(mA) = 0.0000
Charge Distributions(@3mv/s):
                                                                                                                         faradaic(mAs) = 15.7797 capacitive(mAs) = 13.3359 pseudocapacitive(mAs) = 0.0000 faradaic = 54.1968% capacitive = 45.8032% pseudocapacitive = 0.0000%
                                                                                                                          faradaic(mAs) = 15.797 (pseudo)capacitive(mAs) = 13.3359
faradaic = 54.1967% (pseudo)capacitive = 45.8033%
Current Distributions(@1mv/s):
                                                                                                                         Current Distributions(@1mv/s):
                                                                                                                         Charge Distributions(@Imv/s):
faradaic(mAs) = 0.0788 (pseudo)capacitive(mA) = 0.0385
Charge Distributions(@Imv/s):
faradaic(mAs) = 27.3312 (pseudo)capacitive(mAs) = 13.3359
faradaic = 67.2072% (pseudo)capacitive = 32.7928%
                                   capacitive(mA) = 0.0385 pseudocapacitive(mA) = 0.0000
 faradaic(mA) = 0.0788
faradaic(mA) = 0.0788 capacitive(mA) = 0.0885 pseudocapacitive(mA) = 0.0000 Charge Distributions(glmv/s):

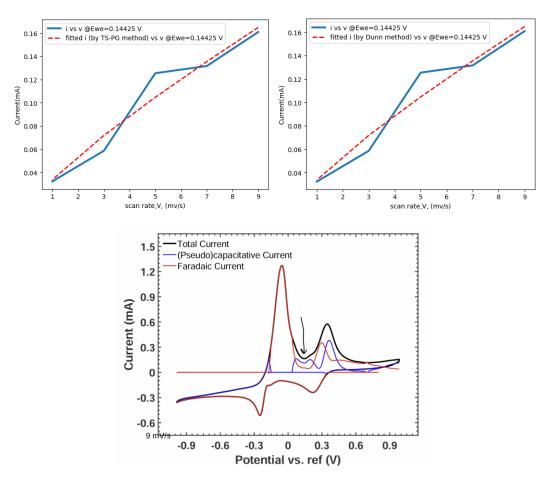
faradaic(mAs) = 27.3312 capacitive(mAs) = 13.3359 pseudocapacitive(mAs) = 0.0000 faradaic = 67.2072% capacitive = 32.7928% pseudocapacitive = 0.0000%
```



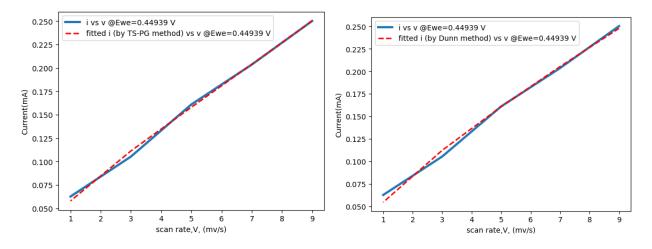


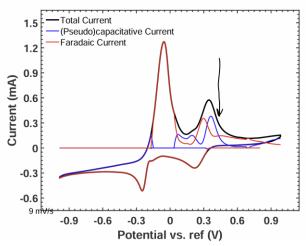
```
TS-PG Method @E=0.25067 V:
                                                                                            Dunn Method @E=0.25067 V:
Fitted parameters:
                                                                                            Fitted parameters:
a = 0.0729 b = 0.0000
a = 0.0729 b = 0.0000 c = 0.0000
R-squared: 0.9228
                                                                                            R-squared: 0.9228
Current Distributions(@9mv/s):
                                                                                            Current Distributions(@9mv/s):
 faradaic(mA) = 0.2188
                           capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000
                                                                                             faradaic(mA) = 0.2188
                                                                                                                        (pseudo)capacitive(mA) = 0.0000
Charge Distributions(@9mv/s):
                                                                                            Charge Distributions(@9mv/s):
 faradaic(mAs) = 42.5130     capacitive(mAs) = 0.0000     pseudocapacitive(mAs) = 0.0000
                                                                                             faradaic(mAs) = 42.5130 (pseudo)capacitive(mAs) = 0.0000
 faradaic = 100.0000%
                            capacitive = 0.0000%
                                                      pseudocapacitive = 0.0000%
                                                                                                                       (pseudo)capacitive = 0.0000%
                                                                                             faradaic = 100.0000%
Current Distributions(@7mv/s):
                                                                                            Current Distributions(@7mv/s):
 faradaic(mA) = 0.1930
                           capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000
                                                                                             faradaic(mA) = 0.1930
                                                                                                                        (pseudo)capacitive(mA) = 0.0000
Charge Distributions(@7mv/s):
                                                                                            Charge Distributions(@7mv/s):
  faradaic(mAs) = 48.2052 (pseudo)capacitive(mAs) = 0.0000
 faradaic(mAs) = 48.2052 capacitive(mAs) = 0.0000 pseudocapacitive(mAs) = 0.0000
faradaic = 100.0000% capacitive = 0.0000% pseudocapacitive = 0.0000%
                                                                                             faradaic = 100.0000%
                                                                                                                         (pseudo)capacitive = 0.0000%
Current Distributions(@5mv/s):
                                                                                            Current Distributions(@5mv/s):
 faradaic(mA) = 0.1631
                           capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000
                                                                                             faradaic(mA) = 0.1631
                                                                                                                        (pseudo)capacitive(mA) = 0.0000
Charge Distributions(@5mv/s):
                                                                                            Charge Distributions(@5mv/s):
 faradaic(mAs) = 57.0273 capacitive(mAs) = 0.0000 pseudocapacitive(mAs) = 0.0000
                                                                                             faradaic(mAs) = 57.0274 (pseudo)capacitive(mAs) = 0.0000
 faradaic = 100.0000%
                            capacitive = 0.0000%
                                                      pseudocapacitive = 0.0000%
                                                                                             faradaic = 100.0000%
                                                                                                                         (pseudo)capacitive = 0.0000%
Current Distributions(@3mv/s):
                                                                                            Current Distributions(@3mv/s):
 faradaic(mA) = 0.1263
                           capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000
                                                                                             faradaic(mA) = 0.1263
                                                                                                                        (pseudo)capacitive(mA) = 0.0000
Charge Distributions(@3mv/s):
                                                                                            Charge Distributions(@3mv/s):
faradaic(mAs) = 73.6093 (pseudo)capacitive(mAs) = 0.0000
 faradaic(mAs) = 73.6093 capacitive(mAs) = 0.0000 pseudocapacitive(mAs) = 0.0000
                                                                                                                         (pseudo)capacitive = 0.0000%
 faradaic = 100.0000%
                            capacitive = 0.0000%
                                                      pseudocapacitive = 0.0000%
                                                                                             faradaic = 100.0000%
Current Distributions(@1mv/s):
                                                                                            Current Distributions(@1mv/s):
 faradaic(mA) = 0.0729
                           capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0000
                                                                                             faradaic(mA) = 0.0729
                                                                                                                        (pseudo)capacitive(mA) = 0.0000
Charge Distributions(@1mv/s):
                                                                                            Charge Distributions(@1mv/s):
 faradaic(mAs) = 127.4877   capacitive(mAs) = 0.0000   pseudocapacitive(mAs) = 0.0000
                                                                                             faradaic(mAs) = 127.4877
                                                                                                                         (pseudo)capacitive(mAs) = 0.0000
 faradaic = 100.0000%
                            capacitive = 0.0000%
                                              pseudocapacitive = 0.0000%
                                                                                             faradaic = 100.0000%
                                                                                                                         (pseudo)capacitive = 0.0000%
```



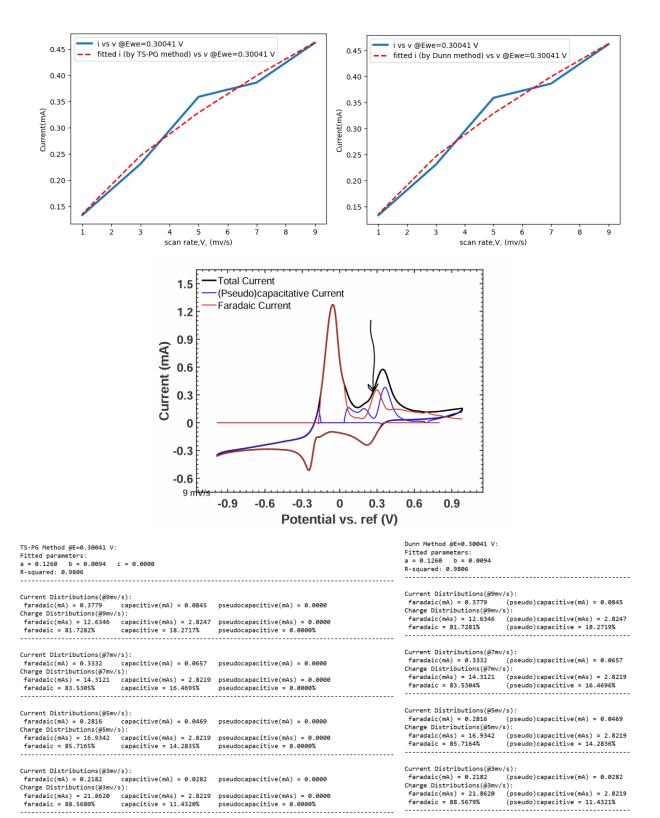


```
TS-PG Method @E=0.14425 V:
                                                                                        Dunn Method @E=0.14425 V:
Fitted parameters:
a = 0.0230  b = 0.0107  c = 0.0000
                                                                                        Fitted parameters:
                                                                                        a = 0.0230 b = 0.0107
R-squared: 0.9453
                                                                                        R-squared: 0.9453
Current Distributions(@9mv/s):
                                                                                        Current Distributions(@9mv/s):
faradaic(mA) = 0.0689
                           capacitive(mA) = 0.0961 pseudocapacitive(mA) = 0.0000
                                                                                        faradaic(mA) = 0.0689 (ps
Charge Distributions(@9mv/s):
                                                                                                                    (pseudo)capacitive(mA) = 0.0961
Charge Distributions(@9mv/s):
 faradaic(mAs) = 1.1089
                        capacitive(mAs) = 1.5470 pseudocapacitive(mAs) = 0.0000
                                                                                         faradaic(mAs) = 1.1089 (pseudo)capacitive(mAs) = 1.5470
 faradaic = 41.7519%
                           capacitive = 58.2481%
                                                      pseudocapacitive = 0.0000%
                                                                                         faradaic = 41.7519%
                                                                                                                    (pseudo)capacitive = 58.2481%
Current Distributions(@7mv/s):
                                                                                        Current Distributions(@7mv/s):
                           capacitive(mA) = 0.0747 pseudocapacitive(mA) = 0.0000
faradaic(mA) = 0.0607
                                                                                         faradaic(mA) = 0.0607
                                                                                                                    (pseudo)capacitive(mA) = 0.0747
Charge Distributions(@7mv/s):
                                                                                        Charge Distributions(@7mv/s):
faradaic(mAs) = 1.2548 (pseudo)capacitive(mAs) = 1.5438
faradaic(mAs) = 1.2548    capacitive(mAs) = 1.5438    pseudocapacitive(mAs) = 0.0000
faradaic = 44.8357%    capacitive = 55.1643%    pseudocapacitive = 0.0000%
                                                                                         faradaic = 44.8357%
                                                                                                                    (pseudo)capacitive = 55.1643%
Current Distributions(@5mv/s):
                                                                                        Current Distributions(@5mv/s):
 faradaic(mA) = 0.0513
                           capacitive(mA) = 0.0534 pseudocapacitive(mA) = 0.0000
                                                                                         faradaic(mA) = 0.0513
                                                                                                                   (pseudo)capacitive(mA) = 0.0534
Charge Distributions(@5mv/s):
                                                                                        Charge Distributions(@5mv/s):
 faradaic(mAs) = 1.4847 capacitive(mAs) = 1.5438 pseudocapacitive(mAs) = 0.0000
                                                                                         faradaic(mAs) = 1.4847 (pseudo)capacitive(mAs) = 1.5438
 faradaic = 49.0233%
                           capacitive = 50.9767%
                                                      pseudocapacitive = 0.0000%
                                                                                         faradaic = 49.0233%
                                                                                                                   (pseudo)capacitive = 50.9767%
·
Current Distributions(@3mv/s):
                                                                                        Current Distributions(@3mv/s):
                           capacitive(mA) = 0.0320 pseudocapacitive(mA) = 0.0000
faradaic(mA) = 0.0398
                                                                                        faradaic(mA) = 0.0398 (ps
Charge Distributions(@3mv/s):
                                                                                                                   (pseudo)capacitive(mA) = 0.0320
Charge Distributions(@3mv/s):
faradaic(mAs) = 1.9167 capacitive(mAs) = 1.5438 pseudocapacitive(mAs) = 0.0000
                                                                                         faradaic(mAs) = 1.9167
                                                                                                                 (pseudo)capacitive(mAs) = 1.5438
 faradaic = 55.3875%
                           capacitive = 44.6125%
                                                      pseudocapacitive = 0.0000%
                                                                                         faradaic = 55.3875%
                                                                                                                   (pseudo)capacitive = 44.6125%
Current Distributions(@1mv/s):
                                                                                        Current Distributions(@1mv/s):
faradaic(mA) = 0.0230 cap
Charge Distributions(@1mv/s):
                           capacitive(mA) = 0.0107
                                                      pseudocapacitive(mA) = 0.0000
                                                                                         faradaic(mA) = 0.0230
                                                                                                                    (pseudo)capacitive(mA) = 0.0107
                                                                                        Charge Distributions(@1mv/s):
 faradaic(mAs) = 3.3198 capacitive(mAs) = 1.5438 pseudocapacitive(mAs) = 0.0000
                                                                                         faradaic(mAs) = 3.3198 (pseudo)capacitive(mAs) = 1.5438
faradaic = 68.2578%
                         capacitive = 31.7422%
                                                                                                                  (pseudo)capacitive = 31.7422%
                                                      pseudocapacitive = 0.0000%
                                                                                         faradaic = 68.2578%
```





```
TS-PG Method @E=0.44939 V:
                                                                                                                    Dunn Method @E=0.44939 V:
Fitted parameters:
                                                                                                                    Fitted parameters:
a = 0.0405 b = 0.0140
             b = 0.0000 c = 0.0032
a = 0.0547
R-squared: 0.9970
                                                                                                                    R-squared: 0.9945
Current Distributions(@9mv/s):
                                                                                                                    Current Distributions(@9mv/s):
 faradaic(mA) = 0.1641
                              capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0862
                                                                                                                    faradaic(mA) = 0.1214 (pseudo)capacitive(mA) = 0.1263
Charge Distributions(@9mv/s):
Charge Distributions(@9mv/s):
faradaic(mAs) = 8.2047
faradaic = 65.5627%
                           capacitive(mAs) = 0.0003 pseudocapacitive(mAs) = 4.3092 capacitive = 0.0027% pseudocapacitive = 34.4346%
                                                                                                                     faradaic = 49.0171% (pseudo)capacitive = 50.9829%
Current Distributions(@7mv/s):
                                                                                                                    ....ausic(mA) = 0.1071 (pseudo)capacitive(mA) = 0.0982
Charge Distributions(@7mv/s):
faradair/m^a
faradaic(mA) = 0.1447 cal
Charge Distributions(@7mv/s):
                              capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0591
faradaic(mAs) = 6.8785 (pseudo)capacitive(mAs) = 6.3095
faradaic = 52.1571% (pseudo)capacitive = 47.8429%
Current Distributions(@5mv/s):
                                                                                                                    Current Distributions(@5mv/s):
                             capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0357
                                                                                                                    faradaic(mA) = 0.1223
| Faradaic(mm) = 0.123 | Capacitive(mm) = 0.0000 | Faradaic(mAs) = 11.0004 | Capacitive(mAs) = 0.0003 | pseudocapacitive(mAs) = 3.2098 | faradaic = 77.4103% | capacitive = 0.0024% | pseudocapacitive = 22.5873%
                                                                                                                     faradaic(mAs) = 8.1387 (pseudo)capacitive(mAs) = 6.3095
faradaic = 56.3302% (pseudo)capacitive = 43.6698%
Current Distributions(@3mv/s):
                                                                                                                    Current Distributions(@3mv/s):
(pseudo)capacitive(mA) = 0.0421
                                                                                                                     faradaic(mA) = 0.0701
                                                                                                                    Charge Distributions(@3mv/s):
faradaic(mAs) = 10.5070 (ps
faradaic = 62.4803% (ps
faradaic(mAs) = 14.2015 capacitive(mAs) = 0.0003 pseudocapacitive(mAs) = 2.4863 faradaic = 85.0994% capacitive = 0.0020% pseudocapacitive = 14.8985%
                                                                                                                                                 (pseudo)capacitive(mAs) = 6.3095
                                                                                                                                                   (pseudo)capacitive = 37.5197%
Current Distributions(@1mv/s):
                                                                                                                    Current Distributions(@1mv/s):
 faradaic(mA) = 0.0547
                              capacitive(mA) = 0.0000 pseudocapacitive(mA) = 0.0032
                                                                                                                    Charge Distributions(@1mv/s):
faradaic(mAs) = 24.5977 capacitive(mAs) = 0.0003 pseudocapacitive(mAs) = 1.4355
faradaic = 94.4848% capacitive = 0.0013% pseudocapacitive = 5.5139%
                                                                                                                     faradaic(mAs) = 18.1987 (pseudo)capacitive(mAs) = 6.3095
faradaic = 74.2555% (pseudo)capacitive = 25.7445%
```



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capacitive(mA) = 0.0094 pseudocapacitive(mA) = 0.0000

faradaic(mAs) = 37.8662 capacitive(mAs) = 2.8219 pseudocapacitive(mAs) = 0.0000 faradaic = 93.0646% capacitive = 6.9354% pseudocapacitive = 0.0000%

Current Distributions(@1mv/s):

Charge Distributions(@1mv/s):

(pseudo)capacitive(mA) = 0.0094

(pseudo)capacitive = 6.9354%

faradaic(mAs) = 37.8661 (pseudo)capacitive(mAs) = 2.8219

faradaic(mA) = 0.1260

faradaic = 93.0646%