Publications that Reference Scribner's 857 Redox Flow Cell Test System

1. Gebhard, M., Tichter, T., Schneider, J., Mayer, J., Hilger, A., Osenberg, M., Rahn, M., Manke, I., and Roth, C. "On the stability of bismuth in modified carbon felt electrodes for vanadium redox flow batteries: An in-operando X-ray computed tomography study" *Journal of Power Sources*, **478**, 228695 (2020)
2. Schneider, J., Tichter, T., Khadke, P., Zeis, R., and Roth, C. "Deconvolution of electrochemical impedance data for the monitoring of electrode degradation in VRFB" *Electrochimica Acta*, **336**, 135510 (2020)
3. Tichter, T., Andrae, D., Mayer, J., Schneider, J., Gebhard, M., and Roth, C. "heory of cyclic voltammetry in random arrays of cylindrical microelectrodes applied to carbon felt electrodes for vanadium redox flow batteries" *Physical Chemistry Chemical Physics*, **21**, 9061 (2019)
4. Zu, X., Yang, Z., Sun, L., Lin, W., Yi, G., Zheng, X., Li, W., Deng, Y., and Xiao, J. "Ferric-ferrous redox couple mediated low temperature symmetric flow fuel cell for direct conversion of biomass residues into electricity" *Journal of Power Sources*, **448**, 227441 (2020)
5. Akuzum, B., Alparslan, Yigit C., Robinson, Nicholas C., Agar, E., and Kumbur, E. C. "Obstructed flow field designs for improved performance in vanadium redox flow batteries" *Journal of Applied Electrochemistry*, **49**, 551-561 (2019)
6. Eifert, L., Jusys, Z., Behm, R. J., and Zeis, R. "Side reactions and stability of pre-treated carbon felt electrodes for vanadium redox flow batteries: A DEMS study" *Carbon*, **158**, 580-587 (2019)
7. Sankarasubramanian, S., Zhang, Y., and Ramani, V. "Methanesulfonic acid-based electrode-decoupled vanadium–cerium redox flow battery exhibits significantly improved capacity and cycle life" *Sustainable Energy & Fuels*, **3**, 2417 (2019)
8. Naresh, R. P., Mariyappan, K., Archana, K. S., Suresh, S., Ditty, D., Ulaganathan, M., and Ragupathy, P. "Activated Carbon-Anchored 3D Carbon Network for Bromine Activity and its Enhanced Electrochemical Performance in Zn Br2 Hybrid Redox Flow Battery" *ChemElectroChem*, **6**, 5688-5697 (2019)
9. Gubler, L., Vonlanthen, D., Schneider, A., and Oldenburg, F. J. "Composite Membranes Containing a Porous Separator and a Polybenzimidazole Thin Film for Vanadium Redox Flow Batteries" *Journal of The Electrochemical Society*, **167**, 100502 (2020)
10. Maleki, M., El-Nagar, G. A., Bernsmeier, D., Schneider, J., and Roth, C. "Fabrication of an efficient vanadium redox flow battery electrode using a free-standing carbon-loaded electrospun nanofibrous composite" *Scientific Reports*, **10**, 11153 (2020)
11. Bevilacqua, N., Eifert, L., Banerjee, R., Köble, K., Faragó, T., Zuber, M., Bazylak, A., and Zeis, R. "Visualization of electrolyte flow in vanadium redox flow batteries using synchrotron X-ray radiography and tomography – Impact of electrolyte species and electrode compression." *Journal of Power Sources*, **439**, 227071-227081 (2020)

12. Archana, K. S., Suresh, S., Ragupathy, P., and Ulaganathan, M. "Investigations on new Fe-Mn redox couple based aqueous redox flow battery" *Electrochimica Acta*, **345**, 136245 (2020)
13. Fetyan, A., El-Nagar, G. A., Lauermann, I., Schnucklake, M., Schneider, J., and Roth, C. "Detrimental role of hydrogen evolution and its temperature-dependent impact on the performance of vanadium redox flow batteries" *Journal of Energy Chemistry*, **32**, 57-62 (2019)
14. Roh, S.-H., Lim, M.-H., Sadhasivam, T., and Jung, H.-Y. "Investigation on physico-chemical and electrochemical performance of poly(phenylene oxide)-based anion exchange membrane for vanadium redox flow battery systems" *Electrochimica Acta*, **325**, 134944 (2019
15. Shanahan, B., Böhma, T., Britton, B., Holdcroft, S., Zengerle, R., Vierrath, S., Thiele, S., and Breitwieser, M. "30 μm thin hexamethyl-p-terphenyl poly(benzimidazolium) anion exchange membrane for vanadium redox flow batteries" *Electrochemistry Communications*, **102**, 37-40 (2019)
16. Fetyan, A., Schneider, J., Schnucklake, M., El-Nagar, G. A., Banerjee, R., Bevilacqua, N., Zeis, R., and Roth, C. "Comparison of Electrospun Carbon–Carbon Composite and Commercial Felt for Their Activity and Electrolyte Utilization in Vanadium Redox Flow Batteries" *ChemElectroChem*, **6**(1), 130-135 (2018)
17. Pezeshki A.M., Clement J.T., Veith G.M., Zawodzinski T.A. and Mench M.M., "High performance electrodes in vanadium redox flow batteries through oxygen-enriched thermal activation," *Journal of Power Sources*, **294**, 333-338 (2015)
18. Eifert, L., Banerjee, R., Jusys, Z., and Zeis, R. "Characterization of Carbon Felt Electrodes for Vanadium Redox Flow Batteries: Impact of Treatment Methods." *Journal of The Electrochemical Society*, **165**(11), A2577-A2586 (2018)
19. Oldenburg, F. J., Schmidt, T. J., and Gubler, L. "Tackling capacity fading in vanadium flow batteries with amphoteric membranes." *Journal of Power Sources*, **368**, 68-72 (2017)
20. Thong, P. T., Sadhasivam, T., Lim, H., Jin, C.-S., Ryi, S.-K., Park, W., Kim, H. T., Roh, S.-H., and Jung, H.-Y. "High Oxidizing Stability and Ion Selectivity of Hybrid Polymer Electrolyte Membrane for Improving Electrochemical Performance in Vanadium Redox Flow Battery." *Journal of The Electrochemical Society*, **165**(10), A2321-A2329 (2018)
21. Wang, Z., Parrondo, J., and Ramani, V. "Polystyrene-Block-Poly(ethylene-ran-butylene)-Block-Polystyrene Triblock Copolymer Separators for a Vanadium-Cerium Redox Flow Battery." *Journal of The Electrochemical Society*, **164**(4), F372-F378 (2017)
22. Zhang, L., Porter, T., Guillory, S., Chi, C., and Arges, C. G. "Patterning Polymer Electrolyte Membrane for Fuel Cell and Electrolysis Applications." *ECS Transactions*, **77**(11), 1325-1335 (2017)
23. Houser J., Clement J., Pezeshki A. and Mench M.M., "Influence of architecture and material properties on vanadium redox flow battery performance," *Journal of Power Sources*, **302**, 369-377 (2016)
24. Aaron D., Liu Q., Tang Z., Grim G.M., Papandrew A.B., Turhan A., Zawodzinski T.A. and Mench M.M., "Dramatic performance gains in vanadium redox flow batteries through modified cell architecture," *Journal of Power Sources*, **206**, 450-453 (2012)

25. Liu Q.H., Grim G.M., Papandrew A.B., Turhan A., Zawodzinski T.A. and Mench M.M., "High Performance Vanadium Redox Flow Batteries with Optimized Electrode Configuration and Membrane Selection," *Journal of the Electrochemical Society*, **159**, A1246-A1252 (2012)

26. Manahan M.P., Liu Q.H., Gross M.L. and Mench M.M., "Carbon nanoporous layer for reaction location management and performance enhancement in all-vanadium redox flow batteries," *Journal of Power Sources*, **222**, 498-502 (2013)

27. Clement J.T., Aaron D.S. and Mench M.M., "In Situ Localized Current Distribution Measurements in All-Vanadium Redox Flow Batteries," *Journal of the Electrochemical Society*, **163**, A5220-A5228 (2016)

28. Chen D., Hickner M.A., Agar E. and Kumbur E.C., "Optimized Anion Exchange Membranes for Vanadium Redox Flow Batteries," *ACS Applied Materials and Interfaces*, **5**, 7559-7566 (2013)

29. Mayrhuber I., Dennison C.R., Kalra V. and Kumbur E.C., "Laser-perforated carbon paper electrodes for improved mass transport in high power density vanadium redox flow batteries," *Journal of Power Sources*, **260**, 251-258 (2014)

30. Dennison C.R., Agar E., Akuzum B. and Kumbur E.C., "Enhancing Mass Transport in Redox Flow Batteries by Tailoring Flow Field and Electrode Design," *Journal of the Electrochemical Society*, **163**, A5163-A5169 (2016)

31. Derr I., Fetyan A., Schutjajew K. and Roth C., "Electrochemical analysis of the performance loss in all vanadium redox flow batteries using different cut-off voltages," *Electrochimica Acta*, **224**, 9-16 (2017)

32. Derr I., Bruns M., Langner J., Fetyan A., Melke J. and Roth C., "Degradation of all-vanadium redox flow batteries (VRFB) investigated by electrochemical impedance and X-ray photoelectron spectroscopy: Part 2 electrochemical degradation," *Journal of Power Sources*, **325**, 351-359 (2016)

33. Derr, D. Przyrembel, J. Schweer, A. Fetyan, J. Langner, J. Melke, M. Weinelt and C. Roth, "Electroless chemical aging of carbon felt electrodes for the all-vanadium redox flow battery (VRFB) investigated by Electrochemical Impedance and X-ray Photoelectron Spectroscopy," *Electrochimica Acta*, **246**, 783-793 (2017).

34. Langner J., Melke J., Ehrenberg H. and Roth C., "Determination of Overpotentials in All Vanadium Redox Flow Batteries," *ECS Transactions*, **58**, 1-7 (2014)

35. J. Langner, M. Bruns, D. Dixon, A. Nefedov, C. Wöll, F. Scheiba, H. Ehrenberg, C. Roth and J. Melke, "Surface properties and graphitization of polyacrylonitrile based fiber electrodes affecting the negative half-cell reaction in vanadium redox flow batteries," *Journal of Power Sources*, **321**, 210-218 (2016).

36. Fetyan A., Derr I., Kayarkatte M.K., Langner J., Bernsmeier D., Kraehnert R. and Roth C., "Electrospun Carbon Nanofibers as Alternative Electrode Materials for Vanadium Redox Flow Batteries," *ChemElectroChem*, **2**, 2055-2060 (2015)

37. Yun S., Parrondo J. and Ramani V., "Composite anion exchange membranes based on quaternized cardo-poly (etherketone) and quaternized inorganic fillers for vanadium redox flow battery applications," *International Journal of Hydrogen Energy*, **41**, 10766-10775 (2016)

38. Yun S., Parrondo J. and Ramani V., "A Vanadium–Cerium Redox Flow Battery with an Anion-Exchange Membrane Separator," *ChemPlusChem*, **80**, 412-421 (2015)

39. Di Blasi D., Briguglio N., Blasi O.D. and Antonucci V., "Charge–discharge performance of carbon fiber-based electrodes in single cell and short stack for vanadium redox flow battery," *Applied Energy*, **125**, 114-122 (2014)

40. Schweiss R., Pritzl A. and Meiser C., "Parasitic Hydrogen Evolution at Different Carbon Fiber Electrodes in Vanadium Redox Flow Batteries," *Journal of the Electrochemical Society*, **163**, A2089-A2094 (2016)

41. Nibel O., Schmidt T.J. and Gubler L., "Bifunctional Ion-Conducting Polymer Electrolyte for the Vanadium Redox Flow Battery with High Selectivity," *Journal of the Electrochemical Society*, **163**, A2563-A2570 (2016)

42. F. J. Oldenburg, T. J. Schmidt and L. Gubler, "Characterization of imbalance effects in vanadium redox flow batteries ", *Electrochemistry Laboratory Annual Report*, 2016, 65-66

43. O. Nibel, T. J. Schmidt and L. Gubler, "Ion exchange membranes for the all-vanadium redox flow battery with improved vanadium barrier properties", *Electrochemistry Laboratory Annual Report*, 2014, 34-35

44. O. Nibel, S. M. Taylor, A. Pătru, E. Fabbri, L. Gubler and T. J. Schmidt, "Performance of Different Carbon Electrode Materials: Insights into Stability and Degradation under Real Vanadium Redox Flow Battery Operating Conditions," *Journal of the Electrochemical Society*, **164**, A1608-A1615 (2017).

45. Brooker R.P., Bell C.J., Bonville L.J., Kunz H.R. and Fenton J.M., "Determining Vanadium Concentrations Using the UV-Vis Response Method," *Journal of the Electrochemical Society*, **162**, A608-A613 (2015)

46. Jang J.-K., Kim T.-H., Yoon S.J., Lee J.Y., Lee J.-C. and Hong Y.T., "Highly proton conductive, dense polybenzimidazole membranes with low permeability to vanadium and enhanced H_2SO_4 absorption capability for use in vanadium redox flow batteries," *Journal of Materials Chemistry A*, **4**, 14342-14355 (2016)

47. Di Blasi A., Di Blasi O., Briguglio N., Aricò A.S., Sebastián D., Lázaro M.J., Monforte G. and Antonucci V., "Investigation of several graphite-based electrodes for vanadium redox flow cell," *Journal of Power Sources*, **227**, 15-23 (2013)