Publication List
Ryan J. White

2015

1. L. R. Schoukroun-Barnes, E. P. Glaser, and **R. J. White**, "Heterogenous Electrochemical, Aptamer-Based Sensor Surfaces for Controlled Sensor Response," *Langmuir* **2015**, *31*, 6563–6569.
2. L. R. Schoukroun-Barnes and **R. J. White**, "Rationally Designing Aptamer Sequences with Reduced Affinity for Controlled Sensor Performance," *Sensors* **2015**, *15*, 7754-7767. *Special Issue: Smart Materials for Switchable Sensors.*
3. F. C. Macazo, R. Karpel,, and **R. J. White**, "Monitoring Cooperative Binding Using Electrochemical DNA-Based Sensors," *Langmuir*, **2015**, *31*, 868-875.

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4. J. Liu, S. Wagan, M. Dávila Morris, J. Taylor, and R. J. White, "Achieving Reproducible Performance of Electrochemical, Folding Aptamer-Based Sensors on Microelectrodes: Challenges and Prospects," *Anal. Chem.* **2014**, *86*, 11417-11424.
5. F. C. Macazo and **R. J. White**, "Monitoring Charge Flux to Quantify Unusual Ligand-Induced Ion Channel Activity for use in Biological Nanopore-Based Sensors," *Anal. Chem.* **2014**, *86,* 5519-5525.
6. J. Liu, M. Dávila Morris, F. C. Macazo, L. R. Schoukroun-Barnes, and **R. J. White**, "The Current and Future Role of Aptamers in Electroanalysis," *Invited Critical Review*, *J. Electrochem. Soc.*, **2014**, *161*, H301-H313.
7. L. R. Schoukroun-Barnes, S. Wagan, and **R. J. White**,"Enhancing the Analytical Performance of Electrochemical RNA Aptamer-Based Sensors for Sensitive Detection of Aminoglycoside Antibiotics," *Anal. Chem.* **2014** *86,* 1131-1137.
8. R. J. Powell, **R. J.** White, R. T. Hill, "Merging Metabolism and Power: Development of a Novel Photobioelectric Device Driven by Photosynthesis and Respiration," *PLOS ONE*, **2014**, *9*, e86518. (*Collaboration with IMET*)

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9. B. S. Ferguson, D. A. Hoggarth, D. Maliniak, K. Ploense, **R. J. White**, N. Woodward, K. Hsieh, A. J. Bonham, M. Eisenstein, T. E. Kippin, K. W. Plaxco, and H. T. Soh, "Real-Time, Aptamer-Based Tracking of Circulating Therapeutic Agents in Living Animals," *Sci. Transl. Med*.,**2013**, *5*, 213ra165
10. K.-C. Huang and **R. J. White**, "Random Walk on a Leash: A Simple Single-Molecule Diffusion Model for Surface-Tethered Redox Molecules with Flexible Linkers," *J. Am. Chem. Soc.* **2013***, 135,* 12808–12817.

11. L. R. Schoukroun-Barnes, S. Wagan, J. Lui, J. B. Leach, and **R. J. White**, "Biocompatible Hydrogel Membranes for the Protection of RNA Aptamer-Based Electrochemical Sensors," *Proc. SPIE,* **2013**, *8719*, 871901-871908.

2012

12. D. Kang, **R. J. White**, F. Xia, X. Zuo, A. Vallée-Bélisle, and K. W. Plaxco, "DNA Biomolecular-Electronic Encoder and Decoder Devices Constructed by Multiplex Biosensors," *Nat. Pub. Group Asia Mater*. **2012**, *4*, 1-6.
13. **R. J. White**, H. M. Kallewaard, K. Hsieh, A. S. Patterson, J. B. Kasehagen, K.J. Cash, T. Uzawa, H. T. Soh, and K. W. Plaxco, "Wash-free, Electrochemical Platform for the Quantitative, Multiplexed Detection of Specific Antibodies," *Anal. Chem.* **2012**, *84*, 1098-1103. Most Read Articles Analytical Chemistry January 2012.

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14. A. A. Rowe, A. J. Bonham, **R. J. White**, and K. W. Plaxco, "Fabrication of Electrochemical-DNA Biosensors for the Reagentless Detection of Nucleic Acids, Proteins and Small Molecules," *J. Vis. Exp.* **2011**, *52*, 29221-29226.
15. K. Hsieh, **R. J. White**, B. D. Ferguson, K. W. Plaxco, Y. Xiao, H. T. Soh, "Polarity-Switching Electrochemical Sensor for Specific Detection of Single-Nucleotide Mismatches," *Angew. Chemie. Intl. Ed.* **2011**, *50*, 11176-11180.
16. A. A. Rowe, A. J. Bonham, **R. J. White**, M. P. Zimmer, R. J. Yadgar, T. M. Hobza, I. Yaacov, K. W. Plaxco, "CheapStat: An Open-Source, "Do-It-Yourself" Potentiostat for Analytical and Educational Applications," *PLOS One*, **2011**, *6*, e23783.
17. A. E. Abelow, **R. J. White**, K. W. Plaxco, and I. Zharov, "Nanoporous Silica Colloidal Films with Molecular Transport Gated by Aptamers Responsive to Small Molecules," *Coll. Czech CC* **2011**, *76*, 683-694.

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18. T. Uzawa, R. R. Cheng, **R. J. White**, D. Makarov, and K. W. Plaxco, "A Mechanistic Study of Electron Transfer from the Distal Termini of Electrode-Bound, Single-Stranded DNAs," *J. Am. Chem. Soc*. **2010**, *132*, 16120-16126.
19. A. E. Abelow, O. Schepelina, **R. J. White**, A. Vallée-Bélisle, K. W. Plaxco, and I. Zharov, "Biomimetic Glass Nanopores Employing Aptamer Gates Responsive to a Small Molecule," *Chem. Comm.*, **2010**, *46*, 7984-7986.
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21. F. Xia, X. Zuo, R. Yang, **R. J. White**, Y. Xiao, D. Kang, X. Gong, A. J. Heeger and K. W. Plaxco, "Label-Free, Dual-Analyte Electrochemical Biosensors: A New Class of Molecular-Electronic Logic Gates," *J. Am. Chem. Soc.* **2010**, *132*, 8557-8559.

22. **R. J. White**, A. A. Rowe, and K. W. Plaxco, "Re-engineering Aptamer Constructs for Reagentless, Self-Reporting Electrochemical Sensors," *Analyst* **2010**, *135*, 589-594.

23. **R. J. White** and K. W. Plaxco, "Exploiting Binding-Induced Changes in Probe Flexibility for the Optimization of Electrochemical Biosensors," *Anal. Chem*. **2010**, *82*, 73–76.

24. D. Kang, X. Zuo, R. Yang, F. Xia, K. W. Plaxco and **R. J. White**, "Comparing the Properties of Electrochemical-Based DNA Sensors Employing Different Redox Tags," *Anal. Chem*. **2009**, *81*, 9109-9113.

25. **R. J. White** and K. W. Plaxco, "Engineering New Aptamer Geometries for Electrochemical Aptamer-Based Sensors," *Proc. SPIE* **2009**, *7321-5*, 732105-1 – 132105-9.

26. Y. Xiao, K. J. I. Plakos, X. Luo, **R. J. White**, J. Qian, K. W. Plaxco and H. T. Soh, "Fluorescence Detection of Single Nucleotide Polymorphism via a Single, Self-Complementary, Triple-stem DNA Probe," *Angew. Chem*ie. **2009**, *121*, 4418-4422.

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28. A. A. Lubin, B. Vander Stoep Hunt, **R. J. White** and K. W. Plaxco, "The Effects of Probe Length, Probe Geometry and Redox-Tag Placement on the Performance of the Electrochemical E-DNA Sensor," *Anal. Chem*. **2009**, *81*, 2150-2158.

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31. **R. J. White**, N. Phares, A. A. Lubin, Y. Xiao, and K. W. Plaxco, "Optimization of Electrochemical Aptamer-Based Sensors via Optimization of Probe Packing Density and Surface Chemistry," *Langmuir* **2008**, *24*, 10513-10518.

32. E. N. Ervin, R. Kawano, **R. J. White**, and H. S. White, "Simultaneous Alternating and Direct Current Readout of Protein Ion Channel Blocking Events using Glass Nanopore Membranes," *Anal. Chem.* **2008**, *80*, 2069-2076.

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34. **R. J. White**, E. N. Ervin, S. Daniel, T. Yang, P. S. Cremer, and H. S. White, "Single Ion Channel Recordings using Glass Nanopore Membrane Supports," *J. Am. Chem. Soc.* **2007**, *129*, 11766-11775.

35. **R. J. White** and H. S. White, "Influence of Electrophoresis Waveforms in Determining Stochastic Nanoparticle Capture Rates and Detection Sensitivity," *Anal. Chem.* **2007**, *79*, 6334-6349.

36. B. Zhang, J. Galusha, G. Wang, A. J. Bergren, R. M. Jones, **R. J. White**, E. N. Ervin, C. C. Cauley, P. Shiozawa, and H. S. White, “Fabrication of Glass-Sealed Nanodisk Electrodes, Glass Nanopore Electrodes, and Glass Nanopore Membranes,” *Anal. Chem.* **2007**, *79*, 4778-4787.

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39. **R. J. White**, B. Zhang, S. Daniel, J. M. Tang, E. N. Ervin, P. S. Cremer and H. S. White, “Ionic Conductivity of the Aqueous Layer Separating a Lipid Bilayer Membrane and a Glass Support,” *Langmuir* **2006**, *22*, 10777-10783.

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