Bruce Parkinson Professional Information

Bruce Alan Parkinson
Department of Chemistry and School of Energy Resources
University of Wyoming
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Professional Preparation:
Iowa State University, 1972, B.S., Chemistry
California Institute of Technology, 1977, Ph.D., Chemistry
Bell Laboratories, 1978, Postdoctoral Studies

Appointments:
2009 – J. E. Warren Professor of Energy and Environment, University of Wyoming
2008 – Professor of Chemistry and School of Energy Resources, University of Wyoming
1991 - 2008 Professor of Chemistry, Colorado State University
1985 - 1991 Senior Research Chemist, DuPont Central Research
1981 - 1985 Solar Energy Research Institute, Senior Scientist
1979 - 1981 Ames Laboratory, Iowa State University, Staff Scientist

Relevant Publications: (4 publications out of 262 total)

Jennifer Schuttlefield, Justin Sambur, Melissa Gelwick, Carrick Eggleston and B. A, Parkinson, "Photooxidation of Chloride by Oxide Minerals: Implications for Perchlorate on Mars", J. Am. Chem. Soc, 133, 17521-17523, (2011)

Alero J. Gure, Thomas Sorenson, Janet C. Dewey, Theodore Kraus, Carrick M. Eggleston, and Bruce A. Parkinson, "Photostationary State in Photoelectrochemical Generation of Perchlorate: Relevance to Mars", ACS Earth and Space Chem., 3, 2171-2174, (2019), DOI:10.1021/acsearthspacechem.9b00106

Lenore Kubie and Bruce A. Parkinson, "Photosensitization of Single Crystal Oxide Substrates with Quantum Confined Semiconductors", Langmuir, 35(18), 5997-6004, (2018). DOI: 10.1021/acs.langmuir.8b00720

Kevin J. Watkins, B. A. Parkinson and M. T. Spitler, "Fundamental Aspects of Photoinduced Charge Flow at a Quantum Dot Sensitized Single Crystal TiO_2 Semiconductor Interface", J. Phys Chem. C, 122, 13608-13616, (2018), DOI: 10.1021/acs.jpcc.7b12803

Other Significant Publications:

Justin B. Sambur, Thomas Novet and B. A. Parkinson, "Multiple Exciton Collection in a Sensitized Photovoltaic System", Science, 330, 63-66, (2010)

Kevin J. Watkins, B. A. Parkinson and M. T. Spitler, "Physical Models for Charge Transfer at Single Crystal Oxide Semiconductor Surfaces as Revealed by the Doping Density Dependence of Collection Efficiency of Dye Sensitized Photocurrents", J. Phys. Chem B, 119(24), 7579, (2015).

Peter Sutter, Rina Ibragimova, Hannu-Pekka Komsa, Bruce A. Parkinson and Eli Sutter, "Self-Organized Twist-Heterostructures via Aligned van der Waals Epitaxy and Solid-State Transformations", Nature Communications, doi.org/10.1038/s41467-019-13488-5 (2019)

Valerie Kuehl, Jiashi Yin, Duong Phuoc, Bruce Mastorovich, Brian Newell, Katie Dongmei Li-Oakey, Bruce A. Parkinson, and John O. Hoberg, "A Highly Ordered Nanoporous, Two-Dimensional Covalent Organic Framework with Modifiable Pores and Its Application in Water Purification and Ion Sieving", J. Am. Chem. Soc., 140 (51), 18200–18207, (2018)

Synergistic Activities: The Parkinson Group has developed a highly successful and widely imitated outreach activity, the Solar Hydrogen Activity Research Kit (SHArK) program (www.thesharkproject.org) that enlists undergraduates and high school students in real research to help discover new semiconducting materials for solar water splitting. This program, that uses Legos®, laser pointers and other inexpensive components, has been implemented in more than 100 sites in the US and abroad. In 2012 the SHArK Project was recognized as one of the top ten citizen science projects of the year. In 2014 we published a paper (see Rowley et al above) that was based on an undergraduate SHArK participant's initial discovery that has since spawned several follow up papers from other laboratories.

Collaborators and Co-Editors: Mark Spitler, Zbigniew Galazka, Paul A. Maggard, Rainer Eichberger, Thomas Bein, Wolfram Jaegermann, Thomas Mayer, Ralu Divan, Alfred Ludwig, Wolfgang Schuhmann, Carrick Eggleston, Peter Sutter, David A. Cleary, John Turner, Jay R. Winkler, Oliver Monti, Steven Drew, Roel van der Krol, Takashi Yanase

Thesis Advisor: Professor Fred C. Anson (Caltech, retired)
Postdoctoral Sponsor: Professor Adam Heller, currently emeritus at the University of Texas

Graduate Students Advised (Since 2003 out of a total of 29)**:**
Brian France, PhD 2003, Joon Bum Park, PhD 2004, Yungfeng Lu, PhD 2007, Anna Chick, PhD 2007, Mike Woodhouse, PhD 2007, Dave Seley, PhD 2007, Shannon Riha, PhD 2011, Justin Sambur, PhD 2011, Dae-Jin Choi, PhD 2012, Fei Liu, PhD 2015, Kevin Watkins, PhD 2018, Brandon Durant PhD 2018, Current, Ted Kraus, PhD 2019, Yuqi Shi, current

Post Doctoral Scholars Advised (since 2005 out of a total of 30)**:**
Bengt Jäckel, 2005-2007, Kedar Manandhar, 2008-2010, Jennifer Schuttlefield, 2008-2010, Jianghua He, 2007, Robert Herrick (2007), Zhijie Wang, 2009-2011, Chaminda Hettige, 2008-2009, Jennifer Drayton, 2010-2012, Yongxin Li, 2010-2011, Katie Li, 2011, Yongqi Jiang, 2009-2012, Dave Seley, 2012, Maria Kirsanova, 2012-2013, John Rowley, 2011-2013, Paul Newhouse, 2011-2013, Alec Nepomnyashchii, 2011-2014, Lauren King, 2013-2015, Erwin Sabio, 2012-2015, Meghan Kern, 2013-2015, Katarzyna Skorupska, 2013-2015, Lenore Kubie, 2015-2017, Peng Wang 2016, Josh Stecher, 2015-2017, Thomas Martin, 2020-present

Recent Undergraduate Researchers Mentored (Since 2004 out of a total of 30)**:**
Jimmy Nelson, 2004 REU, Jill Tomlinson, 2003-2005, Jeff Irby, 2004-2006, Aaron Wolfe, 2006-2008, Dan Wood, 2006, Kristin Suhr, 2007-2008 Stacy Althaus, 2007 REU, Colin Bradley III, 2009 REU, Craig Markum, 2009, Chris Averill, 2011, Sam Bartko, 2011, Levi Hamilton, 2009, Paige Amundson, 2010 REU, Melissa Gelwicks, 2008, Jim Thorne, 2012-2013, Allyssa Hughes, 2012, Sydney Laramie, 2012 REU, Phillip Pelkey, 2015, Pinya Lin, 2015, Michael Grossett, 2015,Xiaoyi Ding, 2015, Qian Wang, 2017, Zach Witters, 2018, Dakota Lucht 2020, SungHa Kim, current, Ethyn Etchechoury, current

Recent Honors and Awards:
David C. Grahame Award, Physical Electrochemistry Division of Electrochemical Society, 2020
University of Wyoming Presidential Research Award, 2019
Humboldt Research Prize, 2014
Fellow, Electrochemical Society, 2014
Marple Switzer Lecturer, Northwestern University, 2012
Fellow, American Association for the Advancement of Science, 2010
Fellow, Global School for Advanced Studies, 2009
J. E. Warren Professor of Energy and Environment, University of Wyoming, 2010