Biographical Sketch of Otto F. Sankey

Department of Physics, Arizona State University (ASU), Tempe, AZ
85287-1504 (480) 965-4334, (480) 965-7954 (Fax), (480) 987-0533 (Home)
otto.sankey@asu.edu http://physics.asu.edu/sankey

Professional Preparation:
Undergraduate: 1973 B.S. (Physics) University of Missouri-St. Louis
Graduate: 1975 M.A. (Physics) Washington University
Graduate: 1979: Ph.D. (Physics) Washington University
1979-1981 Physics Research Associate (Postdoc), University of Illinois-UC.
1981-1982 Physics Visiting Research Assistant Professor, University of Illinois-UC.

Appointments:
2005-Fall Sabbatical Leave, U. of Nebraska Medical Center (Omaha), Coll. Pharmacy
2002-present Associate Chair, Dept. of Physics and Astronomy, Arizona State U.
1992-present Professor, ASU
1999-2003 Director, ASU-NSF Materials Research Science and Engineering Center
1998 Sabbatical Leave -- Motorola Inc., Predictive Engineering Laboratory.
1987-1992 Associate Professor, ASU; 1982-1987 Assistant Professor, ASU

Awards:
Oden Faculty Research Fellowship, University of Texas, Austin – 2006.
Fellow American Physical Society, Nov. 2000.
Department of Physics and Astronomy Outstanding teaching Award, 2002.
Distinguished Alumni Award, Univ. of Missouri – St. Louis, 2003.
Society of Physics Students (SPS) Golden Opus Award for Teaching Excellence, 1996

Five publications closely related to the proposal:
(1) J. Li, G. Speyer, and O. F. Sankey, *Conduction Switching of Photochromic Molecules*, Physical Review Letters **93**, 248302 (1-4) (2004). http://prl.aps.org/
(2) J. K. Tomfohr and O. F. Sankey, *Theoretical analysis of electron transport through organic molecules*, J. Chem. Phys. **120**, 1542-1554 (2004). http://scitation.aip.org/jcpo/
(3) J. K. Tomfohr and O. F. Sankey, *Complex bandstructure, decay lengths, and Fermi level alignment in simple molecular electronic systems*, Physical Review B**65**, 245105/1-12 (2002). http://prb.aps.org/
(4) X. D. Cui, A. Primak, X. Zarate, J. Tomfohr, O. F. Sankey, A. L. Moore, T. A. Moore, D. Gust, G. Harris, S. M. Lindsay, *Reproducible Measurement of Single-Molecule Conductivity***,** Science **293,** 571-574 (2001). http://www.sciencemag.org/
(5) H. Wang, J. P. Lewis, and O. F. Sankey, *Band-Gap Tunneling States in DNA*, Physical Review Letters, **93**, 016401 (1-4) (2004). http://prl.aps.org/

Five other representative publications (from over 200 total):
(1) M. Karymov, D. Daniel, O. F. Sankey, and Y. Lyubchenko, *Holliday Junction Dynamics and Branch Migration - Single Molecule Analysis*, Proceedings of the National Academy of Science **102**, 8186-8191 (2005). http://www.pnas.org/
(2)J. K. Tomfohr and O. F. Sankey, *Simple estimates of the electron transport properties of molecules*, Phys. Status Solidi B **233**, 59-69 (2002). http://www3.interscience.wiley.com/
(3) J. Dong, O. F. Sankey, and C. W. Myles, *Theoretical Study of the Lattice Thermal Conductivity in Ge Framework Semiconductors*, Physical Review Letters **80**, 2361-2364 (2001). http://prl.aps.org/

(4) A. Demkov and Otto F. Sankey, *Growth study and theoretical investigation of the ultra-thin oxide SiO_2-Si heterojunction,* Physical Review Letters **83**, 2038-2041 (1999).
(5) K T Tsen, E.C. Dykeman, Otto F Sankey, S-W D Tsen, N-T Lin and J.G. Kiang, *Raman scattering studies of the low-frequency vibrational modes of bacteriophage M13 in water—observation of an axial torsion mode,* Nanotechnology 17, 5474-5479 (2006).

Synergistic Activities:

(1) Teaches introductory engineering physics for future engineers and business leaders (200 students). Blends lectures, demos, and cooperative learning methodologies. Recipient of the May 2002 Outstanding Teacher Award, ASU Department of Physics.
(2) Former Director of ASU Physics GAANN. Includes outside activities (e.g. science demos at ASU football games), and research seminar series to acquaint students to faculty research. Speaker at US Dept. of Ed. GAANN workshop, Spring 2002, on "Administration of GAANN Grants." (A new proposal is under review.)
(3) Former Director of Physics/Astronomy Graduate Admissions (Prev. 5 years). Hosts graduate student visits to ASU, open-house, and explains department research activities.
(4) Former Director of the ASU/NSF MRSEC (Materials Research Science and Engineering Center) which sponsored education/outreach programs including undergrad. winter workshop, REU students, and research experience for teachers (RET).

Current and pending support – Otto F. Sankey ASU

Pending: **Selective Inactivation of Viruses by Laser-driven Coherent Mechanical Vibrations,** Arizona State University – University of Arizona: Collaborative on Biomedical Research Grant Program, PIs Nafees Ahmad, K.-T. Tsen, CoPIs Otto Sankey, Judith Brown.

Pending: **Physics GAANN program at Arizona State University**, PI. Otto Sankey and Co-PI Timothy Newman, submitted Nov. 20, 2006, US Dept. of Education. Project date: July 1, 2007-June 30, 2010. Fellowships for graduate students in physics program.

Pending:**Theory of Light Activation of Electrical Conduction through Molecules**, PI Otto Sankey, Submitted Nov. 2006, Project period 5/1/07 – 4/30/10, $314,631

Pending: **Complex Framework Structure Antimonides with Potential for Thermoelectric Application**, PI U. Hausserman, CoPIs N. Newman, and O. Sankey, U.S. Department of Energy, $998,760, 1/1/07 – 12/31/09

Pending: **Sequencing by Recognition**, PI Stuart Lindsay, CoPIs Otto Sankey and Peiming Zhang, NIH. 07-01-07/06-30-10 $862,710.00

Pending: **Self-Assembled Nanostructured Photovoltaics**, PI Stuart Lindsay, CoPIS HYan, R. Diaz, J. Wang, P. Zhang, O. Sankey, D. Gust., U.S. Department of Energy, 06/01/07-05/31/10, $1,448,000.

Pending: **EFRI-ARESCI Preliminary Preproposal**: Destruction of Viruses Using Coherent Vibrational Excitation. NSF (Emerging frontiers in research and innovation), PI Bruce C. Towe, CoPIs Kong-Thon Tsen, Otto Sankey, Vincent Pizziconi, $1,953,173, 01/01/2008-12/31/11.

Pending: **Selective Inactivation of Viruses by Laser-driven Coherent Mechanical Vibrations,** Arizona State University – University of Arizona: Collaborative on Biomedical Research Grant Program, PIs Nafees Ahmad, K.-T. Tsen, CoPIs Otto Sankey, Judith Brown.

Current: **IGERT: Optical Biomolecular Devices: From Natural Paradigms to Practical Applications**, PI Neal Woodbury, 9/15/01 – 8/31/07, $3,164,163