

**NREL Research Fellow Arthur J. Nozik  
Publications List – Updated December 2005**

1. "Highly Efficient Multiple Exciton Generation in Colloidal PbSe and PbS Quantum Dots", *Nano Letters*, **5**, 865 (2005) (R. J. Ellingson, M. Beard, J. Johnson, P. Yu, O.I. Mičić, A. Shaebev, Al. L. Efros, and A.J. Nozik).
2. "Exciton Multiplication and Relaxation Dynamics in Quantum Dots: Applications to Ultrahigh-Efficiency Solar Photon Conversion", *Inorganic Chemistry (Forum)* **44**, 6893 (2005).
3. "Absorption Cross Section and Related Optical Properties of Colloidal InAs Quantum Dots", *J. Phys. Chem. B*, **109**, 7084 (2005) (P. Yu, M. C. Beard, R. J. Ellingson, S. Ferrere, C. Curtis, J. Drexler., F. Luiszer, and A.J. Nozik).
4. "Electron and Hole Transfer from Indium Phosphide Quantum Dots", *J. Phys. Chem. B* **109**, 2625 (2005) (J. L. Blackburn, D. C. Selmarten, R. J. Ellingson, M. Jones, O. Mičić, and A.J. Nozik).
5. "Charge Separation in Heterostructures of InP Nanocrystals with Metal Particles", *J. Phys. Chem.* (in press, 2005) (N. Dimitrijevic, T. Tajh, A.P. Ahrenkiel, J.M. Nedeljkovic, O.I. Mičić, and A.J. Nozik).
6. "Ultrafast Photoresponse of Metallic and Semiconducting Single Wall Carbon Nanotubes", *Phys. Rev. B*, **71**, (2005) (R. J. Ellingson, C. Engtrakul, M. Jones, M. Samec, G. Rumbles, A. J. Nozik, and M. J. Heben).
7. "Analysis of Photoluminescence from Solubilized SWNTs", *Phys. Rev.* in press (2005) (M. Jones, C. Engtrakul, W. Metzger, R. Ellingson, A.J. Nozik, M.J. Heben, and G. Rumbles).
8. "Quantum Dot Solar Cells," in *Next Generation Photovoltaics*, Eds, Institute of Physics, London, (2004) (A. Marti and A. Luque).
9. "Growth of InP Nanostructures via Reaction of Indium Droplets with Phosphide Ions: Synthesis of InP Quantum Rods and InP-TiO<sub>2</sub> Composites", *JACS*, in press (2004) (with J.M. Nedeljkovic, O.I. Micic, S.P. Ahrenkiel, A. Miedaner, and A.J. Nozik)
10. "GaInP<sub>2</sub> overgrowth and passivation of colloidal InP nanocrystals using metalorganic chemical vapor deposition", *Appl. Phys. Letts*, **84**, 780 (2004) (with M.C. Hanna, O.I. Micic, M.J. Seong, S.P. Ahrenkiel, and J.M. Nedeljkovic)
11. "Electron Transfer Dynamics in Quantum Dot/Titanium Dioxide Composites Formed by *in situ* Chemical Bath Deposition", *J. Phys. Chem. B* **107**, 14154 (2003) (with J.L. Blackburn and D.C. Selmarten).
12. "Electronic Coupling in InP Nanoparticle Arrays," *Nano Letters* **3**, 1695 (2003) (with M.C. Beard, G.M. Turner, J.E. Murphy, O.I. Mičić, M.C. Hanna, and C. Schmuttenmaer).
13. "GaInP<sub>2</sub> Overgrowth and Passivation of Colloidal InP Nanocrystals Using Metal Organic Chemical Vapor Deposition," submitted to *Appl. Phys. Lett.* (with M.C. Hanna, O.I. Mičić, M.J. Seong, S.P. Ahrenkiel, and J.M. Nedeljković).
14. "Photo-enhancement of Luminescence in Colloidal CdSe Quantum Dot Solutions," *J. Phys. Chem., B*, **107**, 11346 (2003) (with M. Jones, J. Nedeljković, R. Ellingson, and G. Rumbles).

15. "Colloidal InP/ZnS Core Shell Nanocrystals Studied by Linearly and Circularly Polarized Photoluminescence," *J. Chem. Phys.*, in press (with L. Langof, L. Fradkin, E. Ehrenfreund, E. Lifshitz, and O. Mičić).
16. "Advanced Concepts for Photovoltaic Cells," National Center for Photovoltaics (NCPV) Program Review, Golden, March 23-25, 2003.
17. "Synthesis and Characterization of Colloidal InP Quantum Rods," *Nano Letters* **3**, 833 (2003) (with S.P. Ahrenkiel, O.I. Mičić, A. Miedaner, C.J. Curtis, and J.M. Nedeljković).
18. "Theoretical and Experimental Investigation of Electronic Structure and Relaxation in Colloidal Nanocrystalline Indium Phosphide Quantum Dots," *Phys. Rev. B.* **67**, 075308 (2003) (with R.J. Ellingson, J.L. Blackburn, J. Nedeljkovic, G. Rumbles, M. Jones, and H. Fu).
19. "Electron Relaxation in Colloidal InP Quantum Dots with Photogenerated Excitons or Chemically Injected Electrons," *J. Phys. Chem.* **107**, 102 (2003) (with J.L. Blackburn, R.J. Ellingson, and O.I. Mičić).
20. "III-V Quantum Dots and Quantum Dot Arrays: Synthesis, Optical Properties, Photogenerated Carrier Dynamics, and Applications to Photon Conversion," in *Semiconductor Quantum Dots*, V. Klimov, ed., Marcel Dekker, Inc., in press (with O.I. Mičić).
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22. "Experimental and Theoretical Investigation of Electronic Structure in Colloidal Indium Phosphide Quantum Dots," *Phys. Stat. Sol.* **4**, 1229 (with R.J. Ellingson, J.L. Blackburn, J. Nedeljković, G. Rumbles, M. Jones, and H. Fu).
23. "Quantum Dot Solar Cells," chapter in book to be published by the Institute of Physics for the 3<sup>rd</sup> Generation PV Workshop for High Efficiency through Full Spectrum Utilisation, Cercedilla, Madrid, Spain, March 21-22, 2002.
24. "Quantum Dot Solar Cells," *Physica E* **14**, 115 (2002).
25. "Excitation Energy Dependent Efficiency of Charge Carrier Relaxation and Photoluminescence in Colloidal InP Quantum Dots," *J. Phys. Chem. B* **106**, 7758 (2002) (with R.J. Ellingson, J.L. Blackburn, P. Yu, G. Rumbles, and O.I. Mičić).
26. "Continuous-Wave and Time-Resolved Optically Detected Magnetic Resonance Studies of Non-Etched/Etched InP Nanocrystals," *J. Phys. Chem. B* **106**, 1606 (2002) (with L. Langof, E. Ehrenfreund, E. Lifshitz, and O.I. Mičić).
27. "Electron and Hole Adducts Formed in Illuminated InP Colloidal Quantum Dots Studied by Electron Paramagnetic Resonance," *J. Phys. Chem.* **106**, 4390 (2002) (with O.I. Mičić, E. Lifshitz, T. Rajh, O.G. Poluektov, and M.C. Thurnauer).
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33. "Core-Shell Quantum Dots of Lattice-Matched ZnCdSe<sub>2</sub> Shells on InP Cores: Experiment and Theory," *J. Phys. Chem.* **104**, 12149 (2000) (with O.I. Miñari and B.B. Smith).
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37. "Anti-Stokes Photoluminescence in Colloidal Semiconductor Quantum Dots," *Appl. Phys. Lett.* **75**, 971 (1999) (with E. Poles, D.C. Selmarten, and O.I. Miñari).
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117. "Size Quantization in Small Semiconductor Particles," *J. Phys. Chem.* **89**, 397 (1985) (with F. Williams, O. Micic, T. Rajh, and M. Nenadovic).
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134. "Efficiency of Hot-Carrier Solar Energy Converters," *J. Appl. Phys.* **53**, 3813 (1982) (with R.T. Ross).
135. "Photoelectrosynthesis at Semiconductor Electrodes," in *Photochemical Conversion and Storage of Solar Energy*, J.S. Connolly, Ed., Academic Press, N.Y. (1981).
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137. "Photoelectrochemical Devices for Solar Energy Conversion," in *Photovoltaic and Photoelectrochem. Energy Conversion*, F. Cardon, S.P. Gomes, W. Dekeyser, Eds., Plenum Pub. Corp., N.Y. (1981).
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141. "Photoelectrochemistry with  $\text{-Si}$  Electrodes: Effects of Inversion," *Appl. Phys. Lett.* **37**, 488 (1980) (with J.A. Turner and J. Manassen).
142. "Photoelectrochemistry," Introductory Lecture, Faraday Discussions of The Royal Society of Chemistry, No. 70 (1980).
143. "Hot Carrier Injection at Semiconductor-Electrolyte Junctions," *J. Appl. Phys.* **51**, 2158 (1980) (with D.S. Boudreaux and F. Williams).
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148. "Photoelectrochemistry: Applications to Solar Energy Conversion," *Annual Review Phys. Chem.*, Vol. 29 (1978).
149. "Hydrogen Generation via Photoelectrochemistry: Recent Advances," in *Proceedings*, The Second World Hydrogen Energy Conference, Zurich, Switzerland (August 1978).
150. "Temperature Dependence of Photoelectrolysis," Electrochemical Society Meeting, Symposium on Photoelectrochemistry, Seattle, Washington (May 1978) (with R. Chance).
151. "Irreversibilities in the Mechanism of Photoelectrolysis," *Nature* **271**, 137 (1978) (with F. Williams).
152. "Electrode Materials for Photoelectrochemical Devices," *J. Cryst. Growth* **39**, 299 (1977).
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156. "Energy Conversion via Photoelectrolysis," in *Proc.*, 11th Intersoc. Energy Conv. Engineering Conf., State Line, Nevada (September 1976).
157. "Hydrogen Generation by Photoelectrolysis of Water," in *Proc.*, 1st World Hydrogen Energy Conference, Miami, Florida, Vol. II, 5B-31 (March, 1976).
158. "Photoelectrolysis of Water Using Semiconducting  $\text{TiO}_2$  Crystals," *Nature* **257**, 383 (1975).
159. "Optical and Electrical Properties of  $\text{Cd}_2\text{SnO}_4$ : A Defect Semiconductor," *Phys. Rev. B* **6**, 453 (1972).
160. "Mössbauer Evidence for Hole Trapping by Ferric Acceptor States on Rutile Surfaces," *J. Phys. C: Solid State Physics* **5**, 3147 (1972).
161. "Direction of the Magnetic Easy Axis in  $\text{-Fe}_4\text{N}$ ," *Phys. Rev. B* **4**, 2224 (1971) (with J. Wood).
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163. "Mössbauer Effect in  $\text{Fe}_{1-x}\text{Cu}_x\text{Cr}_2\text{S}_4$ ," *Solid State Comm.* **6**, 363 (1968) (with G. Haacke).
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167. "Kinetics of the Cubic-to-Hexagonal Phase Transformation in Ice Doped with Mössbauer Ions," *Chem. Phys. Lett.* **1**, 391 (1967) (with M. Kaplan).
168. "Significance of the Lattice Contribution to Mössbauer Quadruple Splitting: Re-Evaluation of the  $\text{Fe}^{57m}$  Nuclear Quadruple Moment," *Phys. Rev.* **159**, 273 (1967) (with M. Kaplan).
169. "Simple and Sensitive Low Temperature Control Apparatus for Mössbauer Spectroscopy," *Anal. Chem.* **39**, 854 (1967) (with M. Kaplan).
170. "Kinetics and Mechanism of the Decomposition of Ammonia on Nonferrous Surfaces," *J. of Catalysis* **4**, 469 (1965) (with D.W. Bekenken).

## INVITED LECTURES

1. International Workshop on Nanoparticles and Nanoporous Materials for Environment and Energy Applications, Sydney, Australia, January, 2004
2. 15<sup>th</sup> Winter Conference of the Inter-American Photochemical Society, Tempe, AZ, January, 2004
3. Materials Research Soc, Symposium on Novel Interfaces, Boston, MA, December, 2003
4. Naval Research Lab, Seminar on Carrier Dynamics, Washington, DC, November, 2003
5. International Symposium on Clusters and Nano-Assemblies, Richmond, VA, November, 2003
6. Excited State Processes in Electronic and Bio Nano-Materials Conference, LANL, Los Alamos, NM, Aug. 2003.
7. Electrochemical Society, Energy Technology Division Award Address, Paris, April, 2003
8. NSF Workshop on Molecular Electronics and Nanoscience, Quilmes, Argentina, May 2003.
9. ACS Meeting, Symposium on Spectroscopy of Nanoparticles, New Orleans, March, 2003
10. 14<sup>th</sup> International Conference on the Photochemical Conversion and Storage of Solar Energy, Plenary Lecture, Sapporo, Japan, Aug. 2002.
11. 25<sup>th</sup> DOE Solar Photochemistry Conference, Warrenton, VA, June 2002.
12. Case Western Reserve University, Frontiers in Chemistry Distinguished Lecture, April 2002.
13. Quantsol 2002, EU Quantum Solar Energy Conversion Conference, Rauris, Austria, March 2002.
14. International Workshop on Third Generation Photovoltaics, Cercedilla, Spain, March 2002.
15. SPIE Meeting, Seattle, Washington, July 2002
16. University of Washington, Center for Nanotechnology, Dec. 2001.
17. University of California, Davis, NSF Workshop on Solid State Chemistry, Oct. 2001.
18. Yale University, Department of Chemistry Colloquium, Oct. 2001.
19. International Workshop on Nanostructures in Photovoltaics, Keynote Speaker, Dresden, Germany, Aug. 2001.
20. First International Conference on Semiconductor Photochemistry, Glasgow, Scotland, July 2001.
21. Los Alamos National Laboratory, May 2001.
22. Electrochemical Society Meeting, Symposium on Photovoltaics Over the Horizon, Washington, D.C., March 2001.
23. University of California, Santa Barbara, Chemistry Department Colloquium, Nov. 2000.
24. Workshop on Third Generation Photovoltaics, University of New South Wales, Sydney, Australia, Sept. 2000.
25. First Georgia Tech Conference on Nanostructures, Georgia Tech, Atlanta, GA, Oct. 2000.
26. 10<sup>th</sup> International Conference on Clusters and Nanoparticles, Atlanta, GA, Oct. 2000.
27. European Union Workshop on "Molecular Materials and Functional Polymers for Advanced Devices," Patras, Greece, June 2000.
28. Army Research Office, "Applied Physics of Nanostructured and Nanoscale Materials," Arlington, VA, Dec. 1999.

29. E.I. DuPont, Central Research, Wilmington, DE, Nov. 1999.
30. NSF U.S.-Japan Workshop on Electron Transfer at Interfaces, Okazaki, Japan, Nov. 1999.
31. 218<sup>th</sup> ACS National Meeting, New Orleans, Aug. 1999.
32. First IUPAC Workshop on Advanced Materials, Quantum Dots and Nanoparticles, Hong Kong, China, July 1999.
33. Fourth International Symposium on New Trends in Photoelectrochemistry, Nice, France, June 1999.
34. First Gerischer Symposium: Semiconductor Photoelectrochemistry, Berlin, Germany, June 1999.
35. Twenty-third Solar Photochemistry Research Conference, Lake Tahoe, CA, June 1999.
36. Electrochemical Society Meeting, Symposium on Quantum Dots, Seattle, WA, May 1999.
37. Workshop on Future Trends in Photovoltaics, Seattle, WA, May 1999.
38. Materials Research Society Meeting, Symposium on Quantum Dots, San Francisco, April 1999.
39. American Physical Society Meeting, Atlanta, GA, March 1999.
40. Naval Research Laboratory, Arlington, VA, Dec. 1998.
41. 1st International Symposium on Atomic Scale Processing and Novel Properties in Nanoscopic Materials, Osaka University, Japan, Nov. 1998.
42. International Symposium on Prospects for the Design of Environmentally Friendly Photocatalytic Systems Using Solar Beam and/or Visible Light, Osaka Prefecture University, Japan, Nov. 1998.
43. Dept. of Chemical Processing, Faculty of Engineering, Osaka Univ., Osaka, Japan, Nov. 1998.
44. Symposium on Photoelectrochemistry, Electrochemical Society Meeting, Boston, MA, Oct. 1998.
45. La Jolla International School of Physics, The Institute for Advanced Physics Studies, La Jolla Advanced Topics Research School '98, Sept. 1998.
46. University of Oregon, Department of Chemistry Colloquium, May 1998.
47. Emory University, Department of Chemistry Colloquium, April 1998.
48. Auburn University, Department of Chemistry Colloquium, April 1998.
49. University of Georgia, Department of Chemistry Colloquium, April 1998.
50. California Institute of Technology, Department of Chemistry Seminar, Jan. 1998.
51. University of Toronto, Dept. of Chemistry Colloquium, Oct. 1997.
52. Colorado State University, Dept. of Chemistry Colloquium, Oct. 1997.
53. American Chemical Society, Symposium on Liquid Interfaces, Las Vegas, Sept. 1997.
54. Gordon Conference on Nanocrystals, Nanostructures and Clusters, Plymouth, N.H., July 1997.
55. Third International Conference on New Trends in Photoelectrochemistry, Estes Park, CO, May 1997.
56. First Conference on Future Generation Photovoltaic Technologies, Denver, CO, March 1997.
57. University of North Carolina, Dept. of Physics Colloquium, Nov. 1996.
58. International Chemical Conference of Pacific Basin Societies, Hawaii, Dec. 1995.
59. Chemistry Dept. Seminar, University of California., Santa Cruz, April 1995.

60. NATO Advanced Research Workshop on Fine Particle Science, Maratea, Italy, July 1995
61. National Meeting, Israel Chemical Society, Weizmann Institute, Feb. 1995.
62. Guest Lectureship, Gordon Lectures on Energy, Tel Aviv University, Israel, Feb. 1995.
63. Tenth International Conference on the Photochemical Conversion and Storage of Solar Energy, Interlaken, Switzerland, August 1994.
64. Electronic Materials Conference, Boulder, CO, June 1994.
65. University of Minnesota, Physics Dept., Seminar, March 1994.
66. SPIE Conference on Hot Electrons, San Diego, CA, January 1994.
67. Colorado School of Mines, Physics Dept., Colloquium, October 1993.
68. Seventeenth DOE Solar Photochemistry Conference, Wisconsin, June 1993
69. Electrochemical Society Meeting, Honolulu, Hawaii, May 1993.
70. University of Chicago, Graduate Seminar, Chemistry Department, April 1993.
71. Second International Conference on Solar Energy Storage and Photochemistry, Cairo, Egypt, Jan. 1993.
72. Tel Aviv University, Dept. of Chemistry, Seminar, Dec. 1992.
73. Weizmann Institute of Science, Seminar, Dec. 1992.
74. First International Conference on TiO<sub>2</sub> Photocatalysis, London, Ontario, Nov. 1992.
75. University of Colorado, Dept. of Electrical Engineering, Graduate Seminar, Oct. 1992.
76. Ninth International Conference on Conversion and Storage of Solar Energy, Plenary Lecture, Beijing, China, August 1992.
77. American Chemical Society, Symp. on Electron Transfer at Surfaces, San Francisco, Apr 1992.
78. SPIE-International Society for Optical Engineering, Symposium on Quantum Wells and Fast Transient Spectroscopy, Sommerset, N.J., March 1992.
79. Tokyo Public Lecture Celebrating 10th Anniversary of U.S.-Japan Cooperative Research Program in Photoconversion and Photosynthesis, Chem. Soc of Japan, Tokyo, Japan, Dec. 1991.
80. 10th Anniversary Symposium of U.S.-Japan Cooperative Research Program, Institute of Molecular Science, Okazaki, Japan, December 1991.
81. University of Arizona, Optical Sciences Center, Colloquium, November 1991.
82. 7th International Conference on Hot Carrier in Semiconductors, Nara, Japan, June 1991.
83. Fifteenth DOE Solar Photochemistry Conference, Snowmass, Colorado, June 1991.
84. Electrochemical Society Meeting, Washington, D.C., May 1991.
85. American Society of Mechanical Engineers Meeting, Plenary Lecture, Symposium on Renewable Energy, March 1991.
86. Louisiana State University, Department of Chemistry Colloquium, March 1991.
87. American Association of Science Meeting, Symposium on Scientific Advances in Emerging Solar Energy Technologies, Washington, D.C., February 1991.
88. Gordon Research Conference on Electrochemistry, January 1991.
89. University of Colorado, Boulder, Condensed Matter Seminar, October 1990.
90. University of North Carolina, Chapel Hill, Department of Physics, September 1990.
91. Gordon Research Conference on Electron-Donor-Acceptor Interactions, August 1990.
92. Gordon Research Conference on Physical Electrochemistry, July 1990.
93. California Polytechnic Institute, AWU Distinguished Lectureship, July 1990.

94. University of Oklahoma, AWU Distinguished Lectureship, February 1990.
95. University of Wyoming, AWU Distinguished Lectureship, February 1990.
96. University of New Mexico, AWU Distinguished Lectureship, January 1990.
97. International Society of Electrochemistry, Keynote Lecture, Kyoto, Japan, September 1989.
98. Osaka University, Osaka, Japan, September 1989.
99. Tokyo Institute of Technology, Tokyo, Japan, September 1989.
100. Thirteenth DOE Solar Photochemistry Conference, Silver Creek, Colorado, June 1989.
101. Electrochemical Society Meeting, Los Angeles, May 1989.
102. University of Colorado, Department of Physics, March 1989.
103. Gordon Research Conference on Electrochemistry, January 1989.
104. IBM Laboratories, San Jose, California, January 1989.
105. Electrochemical Society, San Francisco Local Section, Stanford, California, January 1989.
106. IEA International Conference on Renewable Energy, Charmay, Switzerland, September 1988.
107. U.S.-Japan Seminar on Photosynthetic Processes on Semiconductor Surfaces, Gleneden Beach, Oregon, June 1988.
108. Hawaiian Natural Energy Institute, Hawaii, February 1988.
109. Iowa State University, Ames Laboratory, Ames, Iowa, March 1988.
110. University of Rochester, Chemistry Department Colloquium, January 1988.
111. Workshop on Hydrogen Photoproduction, Hawaiian Natural Energy Institute, Hawaii, Jan. 1988.
112. Fritz-Haber-Institute, Max-Planck Society, Berlin, Germany, September 1987.
113. Plenary Lecture on Chemical Conversion, International Solar Energy Society Meeting, Hamburg, Germany, September 1987.
114. Eleventh DOE Solar Photochemistry Conference, Lake Tahoe, CA, June 1987.
115. American Chemical Society Mtg, Symposium on Photoelectrochem., Denver, CO, April 1987.
116. Weizmann Institute of Science, Physics Colloquium, Rehovot, Israel, April 1987.
117. SPIE-The International Society for Optical Engineering, Symposium on Superlattices, Bay Point, Florida, March 1987.
118. Colorado State University, Chemistry Department, November 1986.
119. Electrochemical Society Meeting, San Diego, California, October 1986.
120. Argonne National Laboratory, October 1986.
121. Sixth International Conference on Photochemical Conversion and Storage of Solar Energy, Paris, France, July 1986.
122. Lawrence Berkeley Laboratory Seminar Series, Berkeley, California, March 1986.
123. Plenary Lecture, American Section/Solar Energy Society Meeting, Boulder, CO, June 1986.
124. Gordon Research Conference on Photoconductivity, Santa Barbara, California, February 1986.
125. Princeton University, Chemistry Department Seminar, December 1985.
126. AT&T Bell Labs, Seminar, Murray Hill, New Jersey, December 1985.
127. DuPont Company, Seminar, Wilmington, Delaware, December 1985.

128. Cornell University, Seminar, Ithaca, New York, October 1985.
129. NATO Advanced Summer Institute on Photocatalysis, Maratea, Italy, September 1985.
130. University of Colorado, Department of Chemistry Seminar, September 1985.
131. Colorado School of Mines, Physics Department Seminar, September 1985.
132. Colorado State University/SERI Joint Photoconversion Conference, October 1985.
133. Ninth DOE Solar Photochemistry Conference, New York, June 1985.
134. Electrochemical Society Meeting, Toronto, April 1985.
135. Ford Scientific Research Laboratory, Dearborn, Michigan, October 1984.
136. Symposium on Recent Advances in Photocatalysis, Osaka University, Osaka, Japan, Sept. 1984.
137. Okazaki Conference on Electron Transfer, Institute of Molecular Science, Okazaki, Japan, August 1984.
138. Mitsubishi Research Laboratories, Osaka, Japan, August 1984.
139. University of Tokyo, Chemistry Department, Tokyo, Japan, August 1984.
140. Fourth International Conference on Metal Hydrides, Plenary Lecture, Eilat, Israel, April 1984.
141. Weizmann Institute of Science, Energy Institute Lecture, April 1984.
142. International Symposium on Hydrogen Produced from Renewable Energy, Honolulu, Hawaii, May 1984.
143. Eighth DOE Solar Photochemistry Research Conference, Chicago, Illinois, June 1984.
144. Gordon Research Conference on Photoconductivity and Related Phenomena, June 1984.
145. International Electrochemical Society Meeting, San Francisco, California, August 1984.
146. Gordon Research Conference on Electrochemistry, January 1983.
147. Electrochemistry Society Meeting, San Francisco, California, May 1983.
148. NATO Summer Institute on Energy Transfer, Erice, Sicily, June 1983.
149. Seventh DOE Solar Photochemistry Research Conference, San Francisco, CA, June 1983.
150. U.S.-Japan Workshop on Cooperation in Photoconversion Research, Honolulu, Hawaii, March, 1982 and March 1983.
151. Sixth DOE Solar Photochemistry Research Conference, Boulder, Colorado, June 1982.
152. Colorado State University, Chemistry Department Colloquium, April 1982.
153. Boris Kidric Institute of Nuclear Research, Belgrade, Yugoslavia, October 1982.
154. University of California, Santa Barbara, Chemistry Department Colloquium, January 1982.
155. American Cyanamid Company, Laboratory Lecture Series, Stamford, Connecticut, Dec. 1981.
156. American Chemical Society, Northeast Regional Meeting, Rochester, New York, October 1981.
157. Solar World Forum, Plenary Lecture, Brighton, England, August 1981.
158. Pennsylvania State University, Summer School Program, State College, PA, August 1981.
159. Massachusetts Institute of Technology, Chemistry Department, June 1981.
160. Max-Planck-Institute, Fritz-Haber-Institute, May 1981.
161. Texas A&M University, Chemistry Department Colloquium, April 1981.

162. International Energy Agency Workshop on Photoelectrolysis, Leuven, Belgium, April 1981.
163. Canadian Electrochemical Society, Ottawa, Canada, October 1980.
164. University of Göteborg, Sweden, September 1980.
165. European Communities Commission, Research Laboratories, Ispra, Italy, September 1980.
166. Faraday Discussion on Photoelectrochemistry, Opening Address, Oxford, England, Sept. 1980.
167. NATO Summer School Lecturer, Photovoltaic and Photoelectrochemical Energy Conversion, University of Gent, Belgium, August 1980.
168. Third International Conference on Conversion and Storage of Solar Energy, Plenary Lecture, University of Colorado, Boulder, Colorado, August 1980.
169. Gordon Conference on Photoeffects in Solids, June 1980.
170. International Solar Energy Society Meeting, Plenary Lecture, Phoenix, Arizona, June 1980.
171. Fourth DOE Solar Photochemistry Conference, Notre Dame University, Notre Dame, Indiana, June 1980.
172. American Chemical Society Meeting, Symposium on Photoelectrochemistry, Houston, Texas, March 1980.
173. University of Colorado, Department of Physics, Boulder, Colorado, May 1980.
174. University of Colorado, Department of Chemistry, Boulder, Colorado, April 1980.
175. SERI Contractors Review Meetings, Washington, D.C., January 1980.
176. University of California, Berkeley, Chemistry Department, October 1979.
177. Electrochemical Society Meeting, Symposium on Photoelectrochemical Energy Conversion, Los Angeles, California, September 1979.
178. Electrochemical Society Meeting, Rocky Mountain Section, Denver, Colorado, May 1979.
179. University of Denver, Department of Chemistry, Denver, Colorado, April 1979.
180. Royal Society Meeting on Solar Energy, Royal Institution, London, England, November 1978.
181. International Solar Energy Society Meeting, Denver, Colorado, August 1978.
182. American Chemical Society Meeting, Miami Beach, Florida, September 1978.
183. Hudson Valley Chapter, American Society of Metals, Armonk, New York, May 1978.
184. Solar Energy Research Institute, Golden, Colorado, March 1978.
185. American Chemistry Society Southeastern Regional Conference, Tampa, Florida, Nov. 1977.
186. City College of New York Seminar Series, October 1977.
187. Sandia Laboratories, Albuquerque, New Mexico, February 1977.
188. Bell Laboratories, Holmdel, New Jersey, November 1976.
189. 11th Intersoc. Energy Conv. Engineering Conference, State Line, Nevada, September 1976.