Dr. Detlef Bahnemann

Refereed Publications

(Updated 21.03.2016)

1. M. Bonifaciç, H. Möckel, D. Bahnemann, K.-D. Asmus
   “Formation of Positive Ions and Other Primary Species in the Oxidation of Sulphides by Hydroxyl Radicals”
   DOI: 10.1039/P29750000675

2. D. Bahnemann, K.-D. Asmus
   “Formation of a Sulphur-Sulphur Bridged Radical Cation During the Oxidation of 1,4-Dithian by Hydroxyl Radicals”
   DOI: 10.1039/c39750000238

3. K.-D. Asmus, D. Bahnemann, M. Bonifaciç, H. A. Gillis
   “Free Radical Oxidation of Organic Sulphur Compounds in Aqueous Solution”
   DOI: 10.1039/DC9776300213

4. K. Schäfer, M. Bonifaciç, D. Bahnemann, K.-D. Asmus
   “Addition of Oxygen to Organic Sulfur Radicals”
   J. Phys. Chem. 82 (1978) 2777-2780
   DOI: 10.1021/j100515a005

   “Metronidazole (Flagyl), Misonidazole (Ro 07-0582), Iron, Zinc, and Sulphur Compounds in Cancer Therapy”
   Br. J. Cancer 37, Suppl. III (1978) 16-19
   DOI/PMCID: PMC2149407

   “Free Radical Cascades and the Interaction of Radiosensitizers and Radioprotectors”
   Brit. J. Radiology 52 (1979) 600-601
   ISSN: 0007-1285
7. K.-D. Asmus, D. Bahnemann, Ch.-H. Fischer, D. Veltwisch
“Structure and Stability of Radical Cations from Cyclic and Open Chain Dithia Compounds in Aqueous Solutions”
J. Am. Chem. Soc. 101 (1979) 5322-5329
DOI: 10.1021/ja00512a035

8. J. E. Packer, R. L. Willson, D. Bahnemann, K.-D. Asmus
“Electron Transfer Reactions of Halogenated Aliphatic Peroxy Radicals: Measurement of Absolute Rate Constants by Pulse Radiolysis”
DOI: 10.1039/P29800000296

9. D. Bahnemann, K.-D. Asmus, R. L. Willson
“Free Radical Reactions of the Phenothiazine, Metizinic Acid”
DOI: 10.1039/P29810000890

10. D. Bahnemann, E. J. Hart
“Rate Constants of the Reaction of the Hydrated Electron and Hydroxyl Radical with Ozone in Aqueous Solution”
DOI: 10.1021/j100391a024

11. L. Forni, D. Bahnemann, E. J. Hart
“Mechanism of the Hydroxide Ion Initiated Decomposition of Ozone in Aqueous Solution”
DOI: 10.1021/j100391a025

12. D. Bahnemann, K.-D. Asmus, R.L. Willson
“Free Radical Induced One-electron Oxidation of the Phenothiazines, Chlorpromazine and Promethazine”
DOI: 10.1039/P29830001661

13. D. Bahnemann, K.-D. Asmus, R. L. Willson
“Phenothiazine Radical-Cations: Electron Transfer Equilibria with Iodide Ions and the Determination of One-electron Redox Potentials by Pulse Radiolysis”
DOI: 10.1039/P29830001669

14. J. Mönig, D. Bahnemann, K.-D. Asmus
“One-Electron Reduction of CCl₄ in Oxygenated Aqueous Solutions: A CCl₃O₂*-Free Radical Mediated Formation of Cl⁻ and CO₂”
DOI: 10.1016/0009-2797(83)90144-8
15. Z. Alfassi, D. Bahnemann, A. Henglein
   “Photochemistry of Colloidal Metal Sulfides. 3. Photoelectron Emission from CdS-ZnS Co-Colloids”
   DOI: 10.1021/j100221a002

   “Flash Photolysis Observation of the Absorption Spectra of Trapped Positive Holes and Electrons in Colloidal TiO$_2$”
   DOI: 10.1021/j150648a018

17. D. Bahnemann, A. Henglein, L. Spanhel
   “Detection of the Intermediates of Colloidal TiO$_2$-catalyzed Photoreactions”
   DOI: 10.1039/dc9847800151

   “One-Electron Induced Degradation of Halogenated Methanes and Ethanes in Oxygenated and Anoxic Aqueous Solutions”
   Life Chemistry Reports 3 (1985) 1-15
   ISSN: 0278-6281

19. D. Meissner, R. Memming, B. Kastening, D. Bahnemann
   “Fundamental Problems of Water Splitting at Cadmium Sulfide”
   DOI: 10.1016/0009-2614(86)80583-8

20. A. P. Hong, D. W. Bahnemann, M. R. Hoffmann
   “Co(II)Tetrasulfophthalocyanine on Titanium Dioxide: A New Efficient Electron Relay for the Photocatalytic Formation and Depletion of Hydrogen Peroxide in Aqueous Suspensions”
   J. Phys. Chem. 91 (1987) 2109-2117
   DOI: 10.1021/j100292a027

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   J. Phys. Chem. 91 (1987) 3782-3788
   DOI: 10.1021/j100298a014

22. D. W. Bahnemann, C. Kormann, M. R. Hoffmann
   “Preparation and Characterization of Quantum Size Zinc Oxide: A Detailed Spectroscopic Study”
   J. Phys. Chem. 91 (1987) 3789-3798
   DOI: 10.1021/j100298a015
23. D. W. Bahnemann, Ch.-H. Fischer, E. Janata, A. Henglein
   “The Two-Electron Oxidation of Methylviologen: Detection and Analysis of Two Fluorescing Products”
   DOI: 10.1039/f19878302559

24. D. W. Bahnemann, M. R. Hoffmann, A. P. Hong, C. Kormann
   “Photocatalytic Formation of Hydrogen Peroxide”
   DOI: 10.1021/bk-1987-0349.ch010

25. A. P. Hong, D. W. Bahnemann, M. R. Hoffmann
   “Cobalt(II)Tetrasulfophthalocyanine on Titanium Dioxide: II. Kinetics and Mechanisms of the Photocatalytic Oxidation of Aqueous Sulfur Dioxide”
   DOI: 10.1021/j100308a035

   “Photocatalytic production of hydrogen peroxides and organic peroxides in aqueous suspensions of titanium dioxide, zinc oxide, and desert sand”
   DOI: 10.1021/es00172a009

27. C. Kormann, D. W. Bahnemann, M. R. Hoffmann
   “Preparation and Characterization of Quantum-Size Titanium Dioxide (TiO$_2$)”
   DOI: 10.1021/j100329a027

28. B. C. Faust, M. R. Hoffmann, D. W. Bahnemann
   “Photocatalytic Oxidation of Sulfur Dioxide in Aqueous Suspensions of $\alpha$-Fe$_2$O$_3$”
   DOI: 10.1021/j100354a021

29. C. Kormann, D. W. Bahnemann, M. R. Hoffmann
   “Environmental Photochemistry: Is Iron Oxide (Hematite) an Active Photocatalyst? A Comparative Study: $\alpha$-Fe$_2$O$_3$, ZnO, TiO$_2$”
   DOI: 10.1016/1010-6030(89)87099-6

30. C. Kormann, D. W. Bahnemann, M. R. Hoffmann
   “Photolysis of Chloroform and Other Organic Molecules in Aqueous TiO$_2$ Suspensions”
   DOI: 10.1021/es00015a018
31. D. Bockelmann, R. Goslich, D. Bahnemann
   “Mechanistic Studies of Water Detoxification in Illuminated TiO₂ Suspensions”
   DOI: 10.1016/0165-1633(91)90091-X

32. D. W. Bahnemann
   “Ultrasmall Metal Oxide Particles: Preparation, Photophysical Characterization and Photocatalytic Properties”
   DOI: 10.1002/ijch.199300017

   “Photocatalytic Detoxification: Novel Catalysts, Mechanisms and Solar Applications”
   “Trace Metals in the Environment 3: Photocatalytic Purification and Treatment of Water and Air”, D.
   ISBN: 978-0444898555

34. D. Weichgrebe, A. Vogelpohl, D. Bockelmann, D. Bahnemann
   “Treatment of Landfill Leachates by Photocatalytic Oxidation using TiO₂: A Comparison with Alternative Photochemical Technologies”
   “Trace Metals in the Environment 3: Photocatalytic Purification and Treatment of Water and Air”, D.
   ISBN: 978-0444898555

35. D. Bockelmann, R. Goslich, D. Weichgrebe, D. Bahnemann
   “Solar Detoxification of Polluted Water: Comparing the Efficiencies of a Parabolic Trough Reactor and a novel Thin-Film-Fixed-Bed Reactor”
   “Trace Metals in the Environment 3: Photocatalytic Purification and Treatment of Water and Air”, D.
   ISBN: 978-0444898555

   “Photocatalytic Detoxification of Polluted Aquifers: Novel Catalysts and Solar Applications”
   ISBN: 978-0873718714

37. D. W. Bahnemann, J. Cunningham, M. A. Fox, E. Pelizzetti, P. Pichat, N. Serpone
   “Photocatalytic Treatment of Waters”
   ISBN: 978-0873718714

38. H. Gulyas, D. Bockelmann, L. Hemmerling, D. Bahnemann, I. Sekoulov
   “Treatment of Recalcitrant Organic Compounds in Oil Reclaiming Wastewater by Ozone/Hydrogen Peroxide and UV/Titanium Dioxide”
   ISSN: 0273-1223
39. D. Bahnemann
   “Solare Abwasserentgiftung”
   DOI: 10.1002/nadc.19940420413

40. M. Lindner, D. Bahnemann, B. Hirthe, W.-D. Griebler
   “Neue Katalysatoren zur Photokatalytischen Abwasserreinigung”

41. M. Hilgendorff, M. Hilgendorff, D. W. Bahnemann
   “Photokatalytische Reduktion Perhalogenierter Kohlenwasserstoffe an Platiniertem Titandioxid in
   Wäßriger Lösung”
   ISSN: 0863-0453

42. D. Bockelmann, D. Weichgrebe, R. Goslich, D. Bahnemann
   “Concentrating vs. Non-concentrating Reactors for Solar Water Detoxification”
   DOI: 10.1016/0927-0248(95)00005-4

   “Environmental Applications of Semiconductor Photocatalysis”
   DOI: 10.1021/cr00033a004

44. R. Dillert, M. Brandt, I. Fornefett, U. Siebers, D. Bahnemann
   “Photocatalytic Degradation of Trinitrotoluene and other Nitroaromatic Compounds”
   Chemosphere 30 (1995) 2333-2341
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45. M. Hilgendorff, M. Hilgendorff, D. W. Bahnemann
   “Mechanisms of Photocatalysis: The Reductive Degradation of Tetrachloromethane in Aqueous
   Titanium Dioxide Suspensions”
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46. R. Dillert, I. Fornefett, U. Siebers, D. Bahnemann
   “Photocatalytic Degradation of Trinitrotoluene and Trinitrobenzene: Influence of Hydrogen Peroxide”
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47. M. Bekbölte, M. Lindner, D. Weichgrebe, D. Bahnemann
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   Polluted Landfill Effluents Using a Novel TiO₂-Photocatalyst”
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   Langmuir 12 (1996) 6368-6376
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49. M. Lindner, D. Bahnemann, B. Hirthe, W.-D. Griebler
   “Solar Water Detoxification: Novel TiO\textsubscript{2} Powders as Highly Active Photocatalysts”
   DOI: 10.1115/1.2887890

50. M. van Well, R. H. G. Dillert, D. W. Bahnemann, V. W. Benz, M. A. Müller
   “A Novel Non-concentrating Reactor for Solar Water Detoxification”
   DOI: 10.1115/1.2887888

   “Photocatalytic Degradation of Naphthalene and Anthracene: GC/MS Analysis of the Degradation Pathway”
   DOI: 10.1163/156856797X00457

52. R. Goslich, R. Dillert, D. Bahnemann
   “Solar Water Treatment: Principles and Reactors”
   DOI: 10.1016/S0273-1223(97)00019-X

53. M. Lindner, J. Theurich, D. W. Bahnemann
   DOI: 10.1016/S0273-1223(97)00012-7

   “Detoxification and Recycling of Wastewater by Solar-Catalytic Treatment”
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55. D. Bahnemann, M. Hilgendorff, R. Memming
   “Charge Carrier Dynamics at TiO\textsubscript{2} Particles: Reactivity of Free and Trapped Holes”
   DOI: 10.1021/JP9639915

56. M. Nahen, D. Bahnemann, R. Dillert, G. Fels
   “PhotocatalyticDegradationofTrinitrotoluene:ReductiveandOxidativePathways”
   DOI: 10.1016/S1010-6030(97)00171-8
Dr. Detlef Bahnemann: Refereed Publications

57. A. Klapproth, S. Linnemann, D. Bahnemann, R. Dillert, G. Fels
   “14C-Trinitrotoluene: Synthesis and Photocatalytic Degradation”
   DOI: 10.1002/(SICI)1099-1344(199804)41:4<337::AID-JLCR83>3.0.CO;2-Z

58. R. Dillert, U. Siemon, D. Bahnemann
   “Photokatalytische Desinfektion eines kommunalen Abwassers”
   Chem.-Ing.-Techn. 70 (1998) 308-310
   DOI: 10.1002/cite.330700320

59. R. Dillert, U. Siemon, D. Bahnemann
   “Photocatalytic Disinfection of Municipal Wastewater”
   DOI: 10.1002/(SICI)1521-4125(199804)21:4<356::AID-CEAT356>3.0.CO;2-H

60. J. Dzengel, J. Theurich, D. W. Bahnemann
   “Formation of Nitroaromatic Compounds in Advanced Oxidation Processes: Photolysis versus Photocatalysis”
   DOI: 10.1021/ES980358J

   “Field Studies of Solar Water Detoxification using Non Light Concentrating Reactors”
   ISSN: 1203-8407

62. R. Dillert, U. Siemon, D. Bahnemann
   “Photocatalytic Disinfection of Municipal Wastewater”
   DOI: 10.1002/(SICI)1521-4125(199804)21:4<356::AID-CEAT356>3.0.CO;2-H

63. R. Dillert, J. Huppatz, A. Renwrantz, U. Siebers, D. Bahnemann
   “Light-Induced Degradation of Nitroaromatic Compounds in Aqueous Systems: Comparison between Titanium Dioxide Photocatalysis and Photo-Fenton Reactions”
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64. M. Muneer, J. Theurich, D. Bahnemann
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   Catalysis Today 58 (2000) 199-230
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72. Q. W. Chen, D. W. Bahnemann
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   DOI: 10.1021/ja991278y

73. I. Arslan, I. A. Balcioglu, D. W. Bahnemann
   “Heterogeneous Photocatalytic Treatment of Simulated Dyehouse Effluent using TiO₂-Photocatalysts”
   DOI: 10.1016/S0926-3373(00)00117-X
74. C. Wang, D. W. Bahnemann, J. K. Dohrmann
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77. I. Arslan, I. A. Balcioglu, D. W. Bahnemann
“Photochemical Treatment of Simulated Dyehouse Effluents by Novel TiO₂ Photocatalysts: Experience with the Thin Film Fixed Bed (TFFB) and Double Skin Sheet (DSS) Reactor”
DOI/PMID: 11695456

78. C. Wang, D. W. Bahnemann, J. K. Dohrmann
“Determination of Photonic Efficiency and Quantum Yield of Formaldehyde Formation in the Presence of various TiO₂ Photocatalysts”
DOI/PMID: 11695471

79. M. Muneer, D. Bahnemann
“Semiconductor-mediated Photocatalysed Degradation of two Selected Pesticide Derivatives, Terbacil and 2,4,5-Tribromoimidazole, in Aqueous Suspension”
DOI: 10.4028/www.scientific.net/MSF.486-487.61

80. M. Muneer, J. Theurich, D. Bahnemann
“Titanium Dioxide Mediated Photocatalytic Degradation of 1,2-Diethyl Phthalate”
DOI: 10.1016/S1010-6030(01)00525-1

81. G. Sagawe, A. Lehnard, M. Lübber, D. Bahnemann
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Helvetica Chimica Acta 84 (2001) 3742-3759
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83. I. A. Alaton, I. A. Balcioglu, D. W. Bahnemann
   “Advanced Oxidation of a Reactive Dyebath Effluent: Comparison of O$_3$, H$_2$O$_2$/UV-C and TiO$_2$/UV-A Processes”
   DOI: 10.1016/S0043-1354(01)00335-9

84. M. Muneer, D. Bahnemann
   “Semiconductor-mediated Photocatalysed Degradation of two Selected Pesticide Derivatives, Terbacil and 2,4,5-Tribromoimidazole, in Aqueous Solutions”
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85. M. Muneer, H. K. Singh, D. Bahnemann
   “Semiconductor-mediated Photocatalysed Degradation of two Selected Priority Organic Pollutants, Benzidine and 1,2-Diphenylhydrazine, in Aqueous Suspension”
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86. D. Hufschmidt, D. Bahnemann, J. J. Testa, C. A. Emilio, M. I. Litter
   “Enhancement of the Photocatalytic Activity of various TiO$_2$ Materials by Platinisation”
   DOI: 10.1016/S1010-6030(02)00048-5

   “Enhancement of Photocatalytic Activity by Semiconductor Heterojunctions: $\alpha$-Fe$_2$O$_3$, WO$_3$ and CdS deposited on ZnO”
   DOI: 10.1016/S1010-6030(02)00055-2

   “Heterogeneous Photocatalytic Reactions Comparing TiO$_2$ and Pt/TiO$_2$”
   DOI: 10.1016/S1010-6030(02)00050-3

89. C. Wang, J. Rabani, D. W. Bahnemann, J. K. Dohrmann
   “Photonic Efficiency and Quantum Yield of Formaldehyde Formation from Methanol in the Presence of Various TiO$_2$ Photocatalysts”
   DOI: 10.1016/S1010-6030(02)00087-4
90. R. Gao, J. Stark, D. W. Bahnemann, J. Rabani
   “Quantum Yields of Hydroxyl Radicals in Illuminated TiO\textsubscript{2} Nanocrystallite Layers”
   DOI: 10.1016/S1010-6030(02)00066-7

91. M. P. Vinod, D. Bahnemann
   “Materials for All Solid-State Thin-Film Rechargeable Lithium Batteries by Sol-Gel Processing”
   DOI: 10.1007/s10008-001-0251-6

92. H. K. Singh, M. Muneer, D. Bahnemann
   “Photocatalysed Degradation of a Herbicide Derivative, Bromacil in Aqueous Suspensions of Titanium Dioxide”
   DOI: 10.1039/b206918k

93. M. A. Rahman, M. Muneer, D. Bahnemann
   “Photocatalysed Degradation of a Herbicide Derivative, Diphenamid in Aqueous Suspensions of Titanium Dioxide”
   DOI/PMID: 12664977

94. G. Sagawe, R. J. Brandi, D. Bahnemann, A. E. Cassano
   “Photocatalytic Reactors for Treating Water Pollution with Solar Illumination. I: A Simplified Analysis for Batch Reactors”
   DOI: 10.1016/S0009-2509(03)00128-3

95. G. Sagawe, R. J. Brandi, D. Bahnemann, A. E. Cassano
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96. M. A. Rahman , M. Muneer, D. Bahnemann
   “Photocatalytic Degradation of Dimethyl Terephthalate in Aqueous Suspensions of Titanium Dioxide”
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   “A Comparative Study of Nanometer sized Fe(III)-doped TiO\textsubscript{2} Photocatalysts: Synthesis, Characterization and Activity”
   DOI: 10.1039/b303716a
98. M. P. Vinod, D. Bahnemann, P. R. Rajamohan, K. Vijayamohan
“A Novel Luminescent Functionalized Siloxane Polymer”
DOI: 10.1021/jp034002s

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DOI: 10.1023/B:NANO.0000023222.85864.78

“Features and Efficiency of some Platinized TiO$_2$ Photocatalysts”
ISSN: 1226-086X

101. D. Hufschmidt, L. Liu, V. Selzer, D. Bahnemann
“Photocatalytic Water Treatment: Fundamental Knowledge required for its Practical Application”
DOI/PMID: 15077961

102. H. K. Singh, M. Muneer, D. W. Bahnemann
“Photocatalysed Degradation of a Herbicide Derivative, Maleic Hydrazide in Aqueous Suspensions of TiO$_2$”
ISSN: 1203-8407

103. S. Sakthivel, M. V. Shankar, M. Palanichamy, B. Arabindoo, D. W. Bahnemann, V. Murugesan
“Enhancement of Photocatalytic Activity by Metal Deposition: Characterisation and Photonic Efficiency of Pt, Au and Pd deposited on TiO$_2$ Catalyst”
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104. C. Wang, R. Pagel, D. W. Bahnemann, J. K. Dohrmann
“Quantum Yield of Formaldehyde Formation in the Presence of Colloidal TiO$_2$–Based Photocatalysts: Effect of Intermittent Illumination, Platinization, and Deoxygenation”
DOI: 10.1021/jp048046s

105. D. Bahnemann
“Photocatalytic Water Treatment: Solar Energy Applications”
DOI: 10.1016/j.solener.2004.03.031
106. G. Sagawe, R. J. Brandi, D. Bahnemann, A. Cassano
   “Photocatalytic Reactors for Treating Water Pollution with Solar Illumination. III: A simplified Analysis for Recirculating Reactors”
   DOI: 10.1016/j.solener.2004.03.022

107. M. C. Hidalgo, S. Sakthivel, D. Bahnemann
   “Highly Photoactive and Stable TiO₂ Coatings on Sintered Glass”

108. M. Muneer, M. Saquib, M. Qamar, D. Bahnemann
   “Titanium-dioxide-mediated Photocatalysis Reaction of three selected Pesticide Derivatives”
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110. F. Dehn, D. Bahnemann, B. Bilger
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   RILEM Proceedings PRO 41 (2005) 347-352
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112. D. Bahnemann, M. Muneer, M. Qamar, M. A. Rahman, H. K. Singh
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