

Publications

David E. Bugay

1. D.E. Bugay, J-O. Henck, M.L. Longmire, and F.C. Thorley, "Raman Analysis of Pharmaceuticals", in Pivonka, D.E., Chalmers, J.M., and Griffiths, P.R. (Eds.), *Applications of Vibrational Spectroscopy in the Pharmaceutical Research and Development*, Chichester: John Wiley & Sons, 2007, pp. 239-262.
2. D.E. Bugay and H.G. Brittain, "Infrared Absorption Spectroscopy", in Brittain, H.G. (Ed.), *Spectroscopy of Pharmaceutical Solids*, New York: Marcel Dekker, 2006, pp. 235-269
3. D.E. Bugay and H.G. Brittain, "Raman Spectroscopy", in Brittain, H.G. (Ed.), *Spectroscopy of Pharmaceutical Solids*, New York: Marcel Dekker, 2006, pp.271-312.
4. Ivanisevic, D.E. Bugay, and S. Bates, "On pattern matching of x-ray powder diffraction data", *J. Phys. Chem. B*, 109(16), 7781-7787 (2005).
5. P.A. Tishmack, D.E. Bugay, and S.R. Byrn, "Solid-State Nuclear Magnetic Resonance Spectroscopy - Pharmaceutical Applications", invited article in *J. Pharm. Sci.*, 92, 577-610 (2003).
6. D.E. Bugay and P.A. Martoglio-Smith, "Raman Spectroscopy", in Moffat, A.C., Osselton, M.D., and Widdop, B. (Eds.), *Clarke's Analysis of Drugs and Poisons*, 3rd Ed., London: Pharmaceutical Press, 2004, pp. 358-367.
7. D.E. Bugay and W.P. Findlay, "Vibrational Spectroscopy", in Ohannesian, L.A. and Streeter, A. (Eds.), *Handbook of Pharmaceutical Analysis*, New York: Marcel Dekker, Inc., 2002, pp 501-535.
8. D.E. Bugay, "Nuclear Magnetic Resonance Spectroscopy", in Ohannesian, L.A. and Streeter, A. (Eds.), *Handbook of Pharmaceutical Analysis*, New York: Marcel Dekker, Inc., 2002, pp 467-499.
9. D.E. Bugay, "Characterization of the Solid-State: 2. Spectroscopic Techniques", invited article in *Adv. Drug Del. Rev.*, 48(1), 43-65 (2001).
10. R.B. Gandhi, J.B. Bogardus, D.E. Bugay, R.K. Perrone, and M.A. Kaplan, "Pharmaceutical Relationships of Three Solid State Forms of Stavudine", *Int. J. Pharm.*, 201, 221-237 (2000).
11. D.E. Bugay, "Physical Characterization of Pharmaceutical Solids by Raman Spectroscopy," in *Biomedical Applications of Raman Spectroscopy*, M.D. Morris, Editor, *Proceedings of SPIE*, 3608, 56-63 (1999).
12. D.E. Bugay and W.P. Findlay, *Pharmaceutical Excipients: Characterization by IR, Raman, and NMR Spectroscopy*, Marcel Dekker, New York, 1999.
13. D.E. Bugay and W.P. Findlay, *Pharmaceutical Excipients: Characterization by IR, Raman, and NMR Spectroscopy*, Electronic Spectral Library, Nicolet Instruments, Inc., Madison, WI, December 1998.
14. W.P. Findlay and D.E. Bugay, "Utilization of Fourier Transform-Raman Spectroscopy for the Study of Pharmaceutical Crystal Forms", *J. Pharm. Biomed. Anal.*, 16, 921-93- (1998).
15. C. Rodriguez and D.E. Bugay, "Characterization of Pharmaceutical Solvates by Thermogravimetric/Infrared Analysis (TG/IR)", *J. Pharm. Sci.*, 86(2), 263-266 (1997).

16. D.E. Bugay, A.W. Newman, and W.P. Findlay, "Quantitation of Cefepime 2-HCl Dihydrate in Cefepime 2-HCl Monohydrate by Diffuse Reflectance IR and Powder X-Ray Diffraction Techniques", *J. Pharm. Biomed. Anal.*, 15(1), 49-61 (1996).
17. C.J. Petty, D.E. Bugay, W.P. Findlay, and C. Rodriguez, "Applications of FT-Raman Spectroscopy in the Pharmaceutical Industry", *Spectroscopy*, 11(5), 41-45 (1996).
18. A.W. Newman, R.L. Mueller, I.M. Vitez, C.C. Kiesnowski, D.E. Bugay, W.P. Findlay, and C. Rodriguez, "Starch", in: Brittain, H.G. (Ed.), *Analytical Profiles of Drug Substances and Excipients*. New York: Academic Press, 1996; Vol. 24, pp 523-577.
19. D.E. Bugay, "Magnetic Resonance Spectrometry", in *Physical Characterization of Pharmaceutical Solids*, Brittain, H.G. (Ed.), New York: Marcel Dekker, Inc., 1995, pp 93-125.
20. D.E. Bugay and A.C. Williams, "Vibrational Spectroscopy", in *Physical Characterization of Pharmaceutical Solids*, Brittain, H.G. (Ed.), New York: Marcel Dekker, Inc., 1995, pp 59-91.
21. D.E. Bugay, "Solid-State NMR: Theory, Experimental, and Selected Pharmaceutical Applications", in: *Proceedings of the PharmAnalysis '94 Conference*. Atlantic City, NJ: Advanstar Communications, 1994; pp 218-235.
22. K.R. Morris, A.W. Newman, D.E. Bugay, S.A. Ranadive, A.K. Singh, M. Szyper, S.A. Varia, H.G. Brittain, and A.T.M. Serajuddin, "Characterization of Humidity Dependent Changes in Crystal Properties of a New HMG CoA Reductase Inhibitor in Support of its Dosage Form Development", *Inter. J. Pharm.*, 108, 195-206 (1994).
23. A.W. Newman, I.M. Vitez, P. Cortina, G. Young, J. DeVincentis, D.E. Bugay, and T. Patel, "Talc", in: Brittain, H.G. (Ed.), *Analytical Profiles of Drug Substances and Excipients*. New York: Academic Press, 1994; Vol. 23, pp 511-542.
24. H.G. Brittain, K.R. Morris, D.E. Bugay, A.B. Thakur, and A.T.M. Serajuddin, "Solid-State NMR and IR for the Analysis of Pharmaceutical Solids: Polymorphs of Fosinopril Sodium", *J. Pharm. Biomed. Anal.*, 11, 1063-1069 (1994).
25. D.E. Bugay, W.P. Findlay, and F. Rinaldi, "A Review of IR Sampling Techniques for Modern Problem Solving and Methods Development in the Pharmaceutical Laboratory", in: *Proceedings of the PharmAnalysis '93 Conference*. East Brunswick, NJ: Advanstar Communications, 1993; pp 200-210.
26. D.E. Bugay, "Solid State Nuclear Magnetic Resonance Spectroscopy - Theory and Pharmaceutical Applications", *Pharm. Res.*, 10(3), 317-327 (1993).
27. F.M. Wasacz, S.W. Strand, D.E. Bugay, and K.R. Morris, "The Characterization of the Hydration State of Pharmaceuticals by Variable Temperature Diffuse Reflectance Infrared Spectroscopy", *Eighth International Conference on Fourier Transform Spectroscopy*, H.M. Heisse, E.H. Korie, and H.W. Siesler, Editors, *Proceedings of SPIE*, 1575, 305-306 (1992).
28. H.G. Brittain, S.J. Bogdanowich, D.E. Bugay, J. DeVincentis, G. Lewen, and A.W. Newman, "Anhydrous Lactose", in: Florey, K. (Ed.), *Analytical Profiles of Drug Substances*. New York: Academic Press, 1991; Vol. 20, pp 369-398.
29. H.G. Brittain and D.E. Bugay, "Solid-State Properties at the Molecular Level", in: *Proceedings of the Pharm Tech Conference '91*. New Brunswick, NJ: Aster Publishing Corp., 1991; pp 519-527.

30. H.G. Brittain, S.J. Bogdanowich, D.E. Bugay, J. DeVincentis, G. Lewen, and A.W. Newman, "Physical Characterization of Pharmaceutical Solids", *Pharm. Res.*, 8(8), 963-973 (1991).
31. D.E. Bugay, K.R. Morris, "Polymorphic Characterization by 31P Solid State NMR", *TAMU NMR Newsletter*, 374, 53-54 (1989).
32. D.E. Bugay, C.H. Bushweller, C.T. Danehey, Jr., S. Hoogasian, J.A. Blersch, W.R. Leenstra, "A Complementary IR/NMR Approach for the Determination of IR Extinction Coefficients and Thermodynamic Parameters for Conformers in Rapid Equilibrium. The Halocyclohexanes.", *J. Phys. Chem.*, 93, 3908-3911 (1989).
33. D.E. Bugay, "Characterization and Quantification of the Pseudopolymorphs of Aztreonam by 13C CP/MAS", *TAMU NMR Newsletter*, 364, 60-61 (1989).
34. H.G. Brittain, D.E. Bugay, S.J. Bogdanowich, and J. DeVincentis, "Spectral Methods for Determination of Water", *Drug Dev. Ind. Pharm.*, 14(14), 2029-2046 (1988).
35. D.E. Bugay, "Quantitative 31P NMR", *TAMU NMR Newsletter*, 354, 34-35 (1988).
36. D.E. Bugay and W.R. Leenstra, "Conversion of QCFF (QCPE 247) to the VAX 8600 System", *QCPE Bulletin*, 7(3), 111-114 (1987).
37. D.E. Bugay and W.R. Leenstra, "Excited Triplet State Infrared Spectrometry as an Analytical Technique", *Anal. Chem.*, 58, 2335-2337 (1986).
38. D.E. Bugay and G.A. Pearse, Jr., "Potentiometric Determination of Equivalent Weight of ortho-Substituted Benzonitriles", *Microchem. J.*, 28, 595-599 (1983).

Invited Seminars

39. Ahura Scientific TruScan Workshop and Advisory Board, "Raman Spectroscopy: An Evolving Technology for Pharma," Boston, MA, October 23, 2008.
40. United States Pharmacopeia Annual Scientific Meeting 2008, Advisory Panel Symposium, "Spectral Libraries: Current Status, Usage, and How They May be Incorporated into the USP," Kansas City, MO, September 23, 2008.
41. Washington, D.C. Bar Association Meeting, "Where Pharmaceutical Science and Patent Law Battle: Polymorphs and the Solid-State, Case Studies", Washington, D.C., March 20, 2007.
42. European Patent and Trademark Office, "Analytical Techniques Used for the Physical Characterization of Pharmaceutical Solids", Munich, Germany, December 1, 2006.
43. United States Patent and Trademark Office, "Analytical Techniques Used for the Physical Characterization of Pharmaceutical Solids", Alexandria, VA, October 11, 2006.
44. United States Pharmacopeia Annual Scientific Meeting 2005, Session II, Track I: Analytical Validation and Verification of Compendial Methods, "Validation of Spectroscopic Test Methods", San Diego, CA, September 27-30, 2005.
45. Tenth Arden House European Conference in association with AAPS and RPSGB, Materials Science - Characterization of Pharmaceutical Materials for Candidate Selection, Formulation Development, Good Process Outcomes, and Regulatory Approval, "Advances in Spectroscopic Methods for Solid-State Characterization", London, UK, March 21-23, 2005.

46. Nicolet Instruments Research Symposium, "Vibrational Spectroscopy in Pharmaceutical Development", Montreal, Quebec, February 3, 2005.
47. American Association of Pharmaceutical Scientists 40th Annual Pharmaceutical Technologies Conference at Arden House, Pharmaceutical Materials Science - From Drug Substance to Drug Product, "Spectroscopic Techniques for the Characterization of Pharmaceutical Solids", Harriman, NY, January 23-28, 2005.
48. 2004 American Association of Pharmaceutical Scientists Meeting and Exposition, Roundtable Session: Validation of Non-Chromatographic Methods, "Implementation of ICH Validation Guidelines for the Validation of Solid Form Quantitative Assays", Baltimore, MD, November 7-11, 2004.
49. NATO International School of Crystallography, 35th Course: Diversity Amidst Similarity: A Multidisciplinary Approach to Polymorphs, Solvates, and Phase Relationships, Lecture: "Polymorphism and Raman Spectroscopy", Erice, Sicily, Italy, June 9-20, 2004.
50. NATO International School of Crystallography, 35th Course: Diversity Amidst Similarity: A Multidisciplinary Approach to Polymorphs, Solvates, and Phase Relationships, Lecture: "Quantitative Analysis of Polymorphic Mixtures", Erice, Sicily, Italy, June 9-20, 2004.
51. NATO International School of Crystallography, 35th Course: Diversity Amidst Similarity: A Multidisciplinary Approach to Polymorphs, Solvates, and Phase Relationships, Workshop: "Developing Methods for the Quantitative Analysis of Polymorphic Mixtures", Erice, Sicily, Italy, June 9-20, 2004.
52. American Chemical Society ProSpectives Conference Series, Polymorphism in Crystals: Fundamentals, Prediction, and Industrial Practice, "Quantitative Phase Analysis: Approaches, Limitations, and New Directions", Tampa, FL, February 23-26, 2003.
53. Nicolet Instruments Research Symposium, "Characterization of Pharmaceuticals by IR and Raman Spectroscopy", Vancouver, BC/San Diego, CA; San Francisco, CA; Research Triangle Park, NC, November 21, 2002/January 16, 23, and 30, 2003.
54. Seventeenth Annual American Association of Pharmaceutical Scientists Meeting and Exposition, Sunrise Pharmacy School, Techniques in Solid-State Characterization, Spectroscopic Methods for Characterization of Drug Substances", Toronto, ON, Canada, November 13, 2002.
55. Forty-Second Annual Conference on Pharmaceutical Analysis - Land O'Lakes Conference, "Drug Product Analysis by Raman Spectroscopy", Devil's Head Lodge, Merrimac, WI, July 29-August 2, 2002.
56. AAPS Workshop on Chemical and Physical Form Selection of Drug Candidates: Principles, Considerations and Case Studies, "Analytical Techniques Used in the Solid-State Characterization of Pharmaceuticals Salts and Polymorphs", Arlington, VA, April 25-26, 2002.
57. Nicolet Instruments Research Symposium, "Drug Product Analysis by Raman Spectroscopy", Research Triangle Park, NC, December 13, 2001.
58. Fortieth Eastern Analytical Symposium and Exposition, Symposium: Vibrational Spectroscopy in the Pharmaceutical Industry: "Phase Purity Analysis of a Drug Substance by Raman Spectroscopy", Atlantic City, NJ, October, 2001.

59. Sixteenth Annual American Association of Pharmaceutical Scientists Meeting and Exposition, Symposium: New Analytical Technology Applications for In Situ Analysis of Dosage Forms: "Drug Product Analysis Using Raman Spectroscopy", Denver, CO, October 23, 2001.
60. Pharmaceutical Spectroscopy Symposium, Workshop #2: Utilizing Molecular Spectroscopy for Drug Development, Philadelphia, PA, June 21-22, 2001.
61. Pharmaceutical Congress of the Americas, Importance of Solid-State Behavior in the Development of Pharmaceutical Dosage Forms Short Course, "Practical Issues/Characterization Methods: Spectroscopic Techniques", and "Practical Issues/Characterization Methods: Regulatory Considerations", Orlando, FL, March 25, 2001.
62. Nicolet Instruments Research Symposium, "IR and Raman of Pharmaceuticals: Quantitative Assays and Mapping", San Francisco, CA/Princeton, NJ, January 18, January 25, 2001.
63. Thirty-Ninth Annual Eastern Analytical Symposium and Exposition, New York Microscopical Society's Ernst Abbe Award to Maria Kuhnert-Brändstatter, "Polymorphism Analysis: From Optical Microscopy to Molecular Spectroscopy," Atlantic City, NY, November 2, 2000.
64. Second International Symposium on Polymorphism and Crystallization, Chemical Development Issues, "Current Analytical/Regulatory Issues Concerning Polymorphism and Crystallization," Chester, Cheshire, United Kingdom, October 16-18, 2000.
65. Nicolet Instruments Research Symposium, "Solid-State Pharmaceutical Analysis by Vibrational Spectroscopy", Princeton, NJ/San Francisco, CA, November 30, February 8, 1999-2000.
66. Fourteenth Annual American Association of Pharmaceutical Scientists Meeting and Exposition, Roundtable Discussion Moderator and Speaker: "Molecular Spectroscopy: Current Status in the Pharmaceutical Industry", New Orleans, November 14-18, 1999.
67. Aspects of Polymorphism and Crystallization Symposium, "Quantitative and Regulatory Aspects of Polymorphism", Hinkley, Leicestershire, United Kingdom, June 23-25, 1999.
68. Tenth International Symposium on Pharmaceutical and Biomedical Analysis, Short Course: Physical Characterization of Pharmaceutical Solids, co-presented with Dr. H. Brittain, Washington, D.C., May 9, 1999.
69. Thirteenth Annual American Association of Pharmaceutical Scientists Meeting and Exposition, Crystallization in the Pharmaceutical Sciences Short Course: "Analytical Methods for Determining the Progress and Outcome of Crystallization" and "Regulatory Considerations", San Francisco, November 15-19, 1998.
70. Thirteenth Annual American Association of Pharmaceutical Scientists Meeting and Exposition, Characterization of Drug Substances - A Holistic Approach Short Course: "Physical Characterization - Polymorphism", San Francisco, November 15-19, 1998.
71. Nicolet Instruments Research Symposium, "Pharmaceutical Analysis Utilizing IR and Raman Spectroscopy", Chicago, IL/Boston, MA/Philadelphia, PA/Washington, D.C./San Francisco, CA, October 20, November 3, December 3, 10, and January 28, 1998-9.
72. The Twenty-Fifth International Symposium on Controlled Release of Bioactive Materials, Workshop: Crystallization and Polymorphism Issues in Controlled Release Dosage Forms, "Methods of Analysis - Spectroscopic Techniques" and "Advanced Issues - Mixture Analysis", Las Vegas, NV, June 25-26, 1998.

73. Nicolet Instruments Research Symposium, "Analysis of Pharmaceutical Materials Through a Combined Use of Vibrational Spectroscopy Techniques", Washington, D.C./Philadelphia, PA/Boston, MA/San Francisco, CA/Denver, CO, November 13, December 2, 9, 16, and January 22, 1997-8.
74. Twelveth Annual American Association of Pharmaceutical Scientists Meeting and Exposition, Revolutions in Stability Testing Symposium: "A Summary of Analytical Techniques for the Physical Stability Testing of Solids", Boston, MA, November 2-6, 1997.
75. NYC Section - American Chemical Society Analytical Topical Group Meeting, Selected Applications of Raman Spectroscopy in the Pharmaceutical Industry, New York, October 9, 1997.
76. The 134th British Pharmaceutical Conference, Polymorphism Symposium: "Spectroscopic Techniques - Case Examples in Practice", Scarborough, UK, September 15-18, 1997.
77. The Eighth International Symposium on Pharmaceutical and Biomedical Analysis, "Solid-State Spectroscopic Techniques for the Study of Pharmaceutical Solids", Orlando, FL, May 4-7, 1997.
78. Thirtieth Annual Higuchi Research Seminar, "A Multi-Disciplinary Approach to Pharmaceutical Solids Characterization", Lake Ozark, MO, March 9-12, 1997.
79. Nicolet Instruments Research Symposium, "Analysis of Pharmaceutical Materials Through a Combined Use of Vibrational Spectroscopy Techniques", Washington, D.C./Boston, MA/Denver, CO/San Francisco, CA/Philadelphia, PA/Los Angeles, CA, October 16, 30, November 6, 20, December 11, and January 15, 1996-7.
80. AAPS/FDA Workshop on Polymorphism of Drug Substances: Manufacturing, Formulation, Analytical, Stability, Bioavailability, and Regulatory Affairs Issues, planning committee member and invited speaker: "Quantitative Analysis of Polymorphism in Bulk Drug Substance and Dosage Forms", Arlington, VA, February 26-28, 1996.
81. Nicolet Instruments Research Symposium, "FT-Raman Applications in the Pharmaceutical Development Laboratory", Chicago, IL/Boston, MA/Princeton, NJ/San Francisco, CA/Los Angeles, CA, November 2, 7, 9, December 12 and 14, 1995.
82. PharmAnalysis Conference and Exhibition '94, "Solid-State NMR: Theory, Experimental, and Selected Pharmaceutical Applications", Atlantic City, NJ, June 21, 1994.
83. Nicolet Instruments User's Meeting, "A Review of IR Sampling Techniques for Modern Problem Solving and Methods Development", Saddlebrook, NJ, October 26, 1993.
84. SSCI's Pharmaceutical Solids Short Course, "An Integrated Solid-State IR, Raman, and NMR Approach to Pharmaceutical Solids Characterization", yearly participation.
85. Nicolet Instruments User's Meeting, "Utilization of Various IR Sampling Techniques for the Qualitative and Quantitative Characterization of Pharmaceutical Polymorphs", Somerset, NJ, August 26, 1993.
86. PharmAnalysis Conference and Exhibition '93, "IR Sampling Techniques for Modern Problem Solving and Methods Development in the Pharmaceutical Laboratory", East Brunswick, NJ, June 14-15, 1993.
87. Fourth International Symposium on Pharmaceutical and Biomedical Analysis, "Solid-State NMR and IR for the Analysis of Pharmaceutical Solids", Baltimore, MD, April 18-21, 1993.

88. Seventh Annual American Association of Pharmaceutical Scientists Meeting and Exposition, "An Integrated Solid State IR and NMR Approach to Polymorph Characterization", San Antonio, TX, November 15-19, 1992.
89. The Midwest Organic Solid State Chemistry Symposium, "Quantitative Determination of Polymorphism in Fosinopril Sodium Utilizing Solid State NMR and Diffuse Reflectance IR Spectroscopy", Purdue University, West Lafayette, IN, June 8-9, 1990.
90. Federation of Analytical Chemistry and Spectroscopy Society Meeting, "Chiroptical Studies of Pharmaceutical Compounds", Chicago, IL, October, 1989, Submission 207.
91. Nicolet Instruments Spring Seminar Series, "Identification and Quantitation of Pharmaceutical Polymorphs", New Brunswick, NJ, June, 1989.

Presentations

92. D.E. Bugay, "Pharmaceutical Polymorphs", Twenty-fourth Annual Humphrey Memorial Symposium in Chemistry, University of Vermont, 09/23/05, Burlington, VT.
93. D.E. Bugay, P.A. Martoglio-Smith, R.L. Te, and M.A. Houghtaling, "Drug Product Investigations Utilizing Raman Spectroscopy", Twenty-ninth Federation of Analytical Chemistry and Spectroscopy Societies Meeting, 10/15/02, Providence, RI.
94. D.E. Bugay, P.A. Smith, M.A. Houghtaling, and A. Park, "Investigating Drug Delivery Systems by Spectroscopic Mapping Techniques", Twenty-ninth Meeting and Exposition of the Controlled Release Society Meeting, 07/24/02, Seoul, Korea.
95. P.A. Martoglio Smith, B.W. Russell, D.E. Bugay, and C. Rojewski "The Use of Raman Spectroscopy and Discriminant Analysis to Characterize Crystallization of an Amorphous Drug Substance in Drug Product", Thirty-ninth Annual Eastern Analytical Symposium, 10/31/00, Atlantic City, NJ.
96. P.A. Martoglio Smith, D.E. Bugay, and M.A. Houghtaling, "Chemometric Applications of Mixture Analysis using FT-Raman Spectroscopy", Twenty-seventh Federation of Analytical Chemistry and Spectroscopy Societies Meeting, 09/27/00, Nashville, TN.
97. D.E. Bugay, "Physical Characterization of Pharmaceutical Solids by Raman Spectroscopy", BIOS '99, 01/25/99, San Jose, CA.
98. D.E. Bugay, "Physical Characterization of Pharmaceutical Solids by Raman Spectroscopy", Twenty-fifth Federation of Analytical Chemistry and Spectroscopy Societies Meeting, 10/15/98, Austin, TX.
99. R.L. Mueller, A.W. Newman, I.M. Vitez, C. Kiesnowski, D.E. Bugay, and W.P. Findlay, "Scanning Electron Microscopy as a Problem Solving Tool", Thirty-sixth Eastern Analytical Symposium, 11/16/97-11/21/97, Somerset, NJ.
100. D.E. Bugay, W.P. Findlay, and F. Rinaldi, "A Multi-Disciplinary, Molecular Spectroscopy Approach to Pharmaceutical Solids Characterization", Twenty-Sixth Annual Meeting of the Fine Particle Society, 8/23/95 - 8/24/95, Chicago, IL.
101. F. Rinaldi, D.E. Bugay, K.R. Morris, and G. Addona, "Quantitative Analysis of Polymorphism in Fosinopril Sodium Utilizing ¹³C and ³¹P Solid-State NMR Spectroscopy", Thirty-third Eastern Analytical Symposium, 11/13/94-11/18/94, Somerset, NJ.

102. W.P. Findlay and D.E. Bugay, "Hot-Stage Infrared Microspectroscopy for the Study of Pharmaceutical Polymorphs", Twenty-first Federation of Analytical Chemistry and Spectroscopy Societies Meeting, 10/2/94-10/7/94, St. Louis, MO.
103. A.W. Newman, P. Cortina, J. DeVincentis, I. Vitez, S.A. Ranadive, F. Rinaldi, and D.E. Bugay, "Pharmaceutical Solid and Particulate Characterization During Drug Development", Twenty-fifth Annual Meeting of the Fine Particle Society, 7/25/92-7/28/94, East Brunswick, NJ.
104. K.R. Morris, A.W. Newman, and D.E. Bugay, "The Energetic and Structural Effect of Partial Size on the Characterization of Pharmaceutical Solids", Twenty-third Annual Meeting of the Fine Particle Society, 7/13/92-7/17/92, Las Vegas, NV.
105. D.E. Bugay, K.R. Morris, W.P. Findlay, and D.P. Lambarski, "Where Did The IR Peaks Go? - Comparison of Diffuse Reflectance and KBr Pellet Sampling Techniques for Hydrate Characterization by FTIR Spectroscopy", Sixth National American Association Pharmaceutical Scientists Meeting, 11/17/91-11/21/91, Washington, D.C., Abstract APQ1001.
106. H.G. Brittain and D.E. Bugay, "Solid-State Properties at the Molecular Level", Pharm Tech Conference '91, 9/23/91-9/25/91, New Brunswick, NJ.
107. S.W. Strand, D.E. Bugay, and K.R. Morris, "Applications of FT-IR Reflection Spectroscopy in the Study of Materials at Elevated Temperatures", 1991 Pittsburgh Conference, 3/4/91-3/8/91, Chicago, IL, Abstract 857.
108. H.G. Brittain, D.E. Bugay, and G.A. Addona, "Determination of Water in Alkylboronic Acids by CIR-FTIR", Fifth National American Association Pharmaceutical Scientists Meeting, 11/4/90-11/8/90, Las Vegas, NV, Abstract APQ1123.
109. D.E. Bugay, "Pharmaceutical Problem Solving by FTIR Microscopy", Spectra-Tech, Inc. User's Meeting, Sixteenth Federation of Analytical Chemistry and Spectroscopy Scientists Meeting, Chicago, IL, October, 1989.

Patents

110. Ivanisevic, S. Bates, D.E. Bugay, B.C. Stahly, and D.R. Hallenbeck, System and Method for Matching Diffraction Patterns, US Patent 7,372,941, issued May 13, 2008