

CURRICULUM VITAE

March 2010

JEFFREY WILSON STANSBURY, PhD

PERSONAL HISTORY

Office Address: University of Colorado
School of Dental Medicine
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Aurora, Colorado, 80045 E-mail: jeffrey.stansbury@ucdenver.edu

EDUCATION:

University of Maryland, College Park	PhD	1982-1988	Organic Chemistry
University of Maryland, College Park	BS	1973-1977	Chemistry

PROFESSIONAL EXPERIENCE:

Associate Dean for Research University of Colorado School of Dental Medicine Aurora, Colorado	January 2009 - present
Vice-Chair, Department of Craniofacial Biology University of Colorado School of Dental Medicine Aurora, Colorado	November 2004 – present
Professor, Adjunct Appointment Department of Metallurgy and Materials Engineering Colorado School of Mines Golden, Colorado	June 2003 – September 2007
Professor, Courtesy Appointment Department of Chemical and Biological Engineering University of Colorado Boulder, Colorado	September 2000 - present
Professor, Restorative Dentistry Director, Biomaterials Research Center	July 2000 – December 2004

University of Colorado School of Dental Medicine
Aurora, Colorado

Research Chemist 1983-2000
Polymers Division, National Institute of Standards and Technology
Gaithersburg, Maryland

Chemist 1979-1983
Polymers Division, National Bureau of Standards (NIST)
Gaithersburg, Maryland

Quality Assurance Chemist 1978-1979
S.B. Thomas Company
Frederick, Maryland

HONORS

Omicron Kappa Upsilon Honor Society – honorary member 2010

Wilmer Souder Award 2009
International Association for Dental Research Distinguished Scientist

University of Colorado Pinnacles of Inventorship Group 2005

New Inventor of the Year 2004
University of Colorado Health Sciences Center

University of Colorado Emerging Leaders Fellow 2003-2004

Department of Commerce Bronze Metal 1999

I. TEACHING ACTIVITIES

TEACHING RESPONSIBILITIES

University of Colorado School of Dental Medicine
Dental Materials I – DSRE 5504
Course Director: 2001 – 2004
Instructor: 2002 – 2005 (4-8 hours/course)
Lecturer: 2006 – 2008 (2 hours/course)
Dental Materials II – DSRE 6608
Course Director: 2002 – 2005
Instructor: 2002 – 2004 (4-8 hours/course)

University of Colorado School of Pharmacy
Nanotechnology and Drug Delivery – PHSC 7345
Instructor: 2009 (2 hours)

University of Colorado; Department of Chemical & Biological Engineering
Polymer Chemistry – 4450/5450
Course Co-Director and Co-Instructor: 2008 (18 hours)
Course Director and Instructor: 2006 (35 hours)
Course Co-Director and Co-Instructor: 2002 (18 hours)

II. RESEARCH and SCHOLARLY ACTIVITIES

CURRENT RESEARCH

Polymers used in biomedical materials applications take many different forms and functions. We are designing, synthesizing, characterizing and evaluating novel polymeric materials for a wide array of dental and biomedical applications. Some of these materials, such as dental restorations, are intended for permanent placement while others, as with scaffolds for tissue engineering, may be designed to degrade and clear the body after their service is complete. Analytical efforts that couple real-time conversion measurement along with polymer property evolution, particularly mechanical property development as well as polymerization shrinkage and stress development, are directed toward a better fundamental understanding of network forming photopolymerization processes. We are advancing the controlled formation and unique properties of heterogeneous photopolymers in a variety of forms. Our basic studies of photopolymerization processes and reaction kinetics extend to the development of novel photoinitiator systems.

Current research interests: dental and biomedical polymeric materials; hybrid radical/cationic polymeric materials; photopolymerization processes; network polymers and IPN systems; nano-scale polymeric particles; hydrogels and scaffolds for biomaterial/tissue engineering applications; polymerization with minimal shrinkage and stress development; combinatorial approaches to biomaterials development and characterization; polymerization-induced phase separation; conversion-dependent polymer property evolution; degradable polymers; radical photopolymerization with extensive dark cure and shadow cure potential.

RESEARCH FUNDING (with annual direct costs)

1. Principal Investigator “Improved Resin Bonded Dental Restoratives Based on Nanogel-modified Adhesives”. NIH/NIDCR, \$325,000, October 1, 2009 – September 30, 2011.
2. Principal Investigator “Quantitative Methods and Reference Materials for Characterizing Polymeric Dental Composites” NIST, \$225,397, October 1, 2009 – September 30, 2012.

3. Principal Investigator “Processing and Material Variations to Improve Mechanical Properties of PA-LH”. BioPlant R&D, \$3500, June 1, 2009 – November 31, 2009.
4. Principal Investigator “Characterization of Polymeric Property Development in SDR Materials”. Dentsply/Caulk, \$5500, July 1, 2009 – December 31, 2009.
5. Principal Investigator “Nanogel-modified Resins and Composites”. Septodont, \$80,000, May 25, 2009 – May 24, 2010.
6. Co-Investigator (Christopher Bowman, PI) “Thiol-ene-methacrylate Composites for Dental Restorative Materials”. NIH/NIDCR 1R01DE018233 - 01A2, \$250,000, September 1, 2008 – August 30, 2012.
7. Principal Investigator “Applications of Polymerization-induced Phase Separation to Restorative Materials”. NIH/NIDCR R01, \$250,000, July 1, 2007 – June 30, 2012.
8. Principal Investigator “Heterogeneous Polymer Matrices from Nanogel Macromers”. NIH/NIDCR R21, \$175,000, March 1, 2007 – February 28, 2010.
9. Principal Investigator (Bowman, co-PI) “Controlled Formation and Practical Use of Polymer/Polymer Interfaces”. NSF/IUCRC Fundamentals and Applications of Photopolymerization, \$20,000, January 1, 2007 – December 31, 2008.
10. Co-Investigator (Christopher Bowman, PI) “Novel Cross-link Polymers for Dental Restorations”. NIH/NIDCR R01, \$250,000, April 1, 2006 – March 31, 2011.
11. Principal Investigator “Improved Materials and Characterization Techniques Applied to Dental Composite Restoratives”. NIST CRADA, \$140,000, October 1, 2005 – September 30, 2009.
12. Co-investigator (Kristi Anseth, PI) “3D Scaffolds for Controlled hMSC Differentiation”. NIH/NIDCR R01, \$250,000, May 1, 2005 – April 30, 2010.
13. Co-Principal Investigator (Scranton, co-PI) “Fundamental Characterization of Cationic Polymerizations”. NSF/IUCRC Fundamentals and Applications of Photopolymerization, \$20,000, January 1, 2005 – December 31, 2008.
14. Principal Investigator “Novel Surface Treatment of Fillers for Dental Composites”. NIH/NIDCR R21, \$150,000, April 1, 2005 – March 31, 2008.
15. Principal Investigator “Development of Hybrid Radical/cationic Resins for Dental Composites”. Dentsply/Caulk, \$24,000, January 1, 2005 – December 31, 2005.
16. Co-Principal Investigator (Christopher Bowman, co-PI) “Development of Novel Dental Resins and Composites”. Septodont, \$72,117, April 1, 2004 – January 31, 2011.

17. Co-Principal Investigator (Christopher Bowman, co-PI) “Development and Application of High-throughput Techniques for Evaluation of UV Monomer Formulations”. IUCRC Photopolymerization Center, \$24,000, January 1, 2004 – December 31, 2007.
18. Principal Investigator “Novel Polymer-Drug Conjugates for COPD Therapies”. Colorado Tobacco Research Program, \$75,000, July 1, 2002 – December 31, 2003.
19. Principal Investigator “Low Shrinkage Dental Resins from SOC Oligomers”. NIH/NIDCR R01, \$150,000, May 1, 2002 – April 30, 2007.
20. Principal Investigator “Development of Hybrid Radical/Cationic Resins for Dental Composites”. \$20,000, December 1, 2004 – November 31, 2005.
21. Co-Principal Investigator (Christopher Bowman, CO-PI) “Degradable Acrylic Acid Hydrogel Beads”. Biosphere Medical, \$48,000, July 1, 2001 – June 30, 2002.
22. Co-investigator (Christopher Bowman, PI) “Novel Cross-link Polymers for Dental Restorations”. NIH/NIDCR R01, \$200,000, April 1, 2001 – March 31, 2006.
23. Principal Investigator “Formation of Hybrid Structures by Controlled Photopolymerization”. IUCRC Photopolymerization Center, \$24,000, January 1, 2001 – December 31, 2002.
24. Principal Investigator “Cross-linking Photopolymerization”. Sub-contract with NIST, \$80,000, October 1, 2000 – September 30, 2003.
25. Principal Investigator “Studies of the Cross-linking Photopolymerization Process in Dental Resins“ and “Strategies to Eliminate Polymerization Shrinkage and Stress Development in Dental Resins” contained in “Foundation for Advanced Dental and Medical Materials through Molecular Design and Measurement Science”. NIDCR-NIST Interagency Agreement, \$310,000 (total for projects 1+2) October 1, 1999 – September 30, 2004.
26. Principal Investigator “Dental Resins Based on Fluorinated Monomers and Oligomers” contained in “Improved Dental Restorative Materials and Adhesives through Molecular Design and Measurement Science”. NIDCR-NIST Interagency Agreement, \$242,000, October 1, 1996 – September 30, 1999.
27. Principal Investigator “Improvement of Polymeric Resin Systems for Dental Composites” contained in “Research for Improved Dental Restorative Materials”. NIDCR-NIST Interagency Agreement, \$187,000, October 1, 1993 – September 30, 1996.

PUBLICATIONS

PERIODICALS (peer reviewed)

1. Cramer NB, Stansbury JW, Bowman CN. Recent advances and developments in composite dental restorative materials. *Journal of Dental Research* (submitted).
2. Ferracane JL, Stansbury JW, Burke FJT. Self-etching cements – chemistry, properties and clinical considerations. *Journal of Oral Rehabilitation* (submitted).
3. Cramer NB, Couch C, Schreck KM, Boulden JE, Wydra R, Stansbury JW, Bowman CN. Properties of methacrylate-thiol-ene formulations as dental restorative materials. *Dental Materials* (submitted).
4. Goncalves F, Pfeifer C, Stansbury JW, Braga RR. Influence of matrix composition on polymerization stress development of experimental composites. *Dental Materials* (accepted).
5. Howard B, Wilson ND, Newman SM, Pfeifer CS, Stansbury JW. Relationships between conversion, temperature and optical properties during composite photopolymerization. *Acta Biomaterialia* (accepted).
6. Tanaka J, Hashimoto T, Stansbury JW, Antonucci JM, Kuzuki K. Novel fluoride-releasing compomers based on UDMA/MAA matrix resins. *Dental Materials* (submitted).
7. Cramer NB, Couch C, Carioscia J, Schreck KM, Boulden JE, Stansbury JW, Bowman CN. Investigation of thiol-ene and thiol-ene-methacrylate based resins as dental restorative materials. *Dental Materials* 2010; 26:21-28.
8. Johnson PM, Stansbury JW, Bowman CN. Photopolymerized material design based on high-throughput analysis and kinetic modeling. *AIChE Journal* (accepted).
9. Kilambi H, Reddy SK, Schneidewind L, Stansbury JW, Bowman CN. Influence of the secondary functionality on the radical-vinyl chemistry of novel acrylates. *Journal of Polymer Science: Polymer Chemistry* 2009; 47: 4859-4870.
10. Johnson PM, Stansbury JW, Bowman CN. Optimization of multi-component photopolymer formulations using high-throughput analysis and kinetic modeling. *Nature Materials* (submitted).
11. Johnson PM, Stansbury JW, Bowman CN. FTIR microscopy for kinetic measurements in high-throughput photopolymerization: Experimental design and application. *Macromolecular Reaction Engineering* 2009; 3:522-528.
12. Goncalves F, Kawano Y, Pfeifer C, Stansbury JW, Braga RR. Influence of BisGMA, TEGDMA, and BisEMA contents on viscosity, conversion, and flexural strength of experimental resins and composites. *European Journal of Oral Sciences* 2009; 117:442–446.

13. Kim D, Scranton AB, Stansbury JW. Effect of the electron donor structure on the shelf-life time of visible-light activated three-component initiator systems. *Journal of Applied Polymer Science* 2009; 114:1535-1542.
14. Kim D, Stansbury JW. A photo-oxidizable kinetic pathway of three-component photoinitiator systems containing porphyrin dye (Zn-tpp), an electron donor and diphenyl iodonium salt (DPI). *Journal of Polymer Science Part A: Polymer Chemistry* 2009; 47:3131-3141.
15. Lee TY, Cramer NB, Hoyle CE, Stansbury JW, Bowman CN. (Meth)acrylate vinyl ester hybrid polymerizations. *Journal of Polymer Science Part A: Polymer Chemistry* 2009; 47:2509-2516.
16. Berchtold KA, Hacıoğlu B, Nie J, Cramer N, Stansbury JW, Bowman CN. Rapid solid-state photopolymerization of cyclic acetal-containing acrylates. *Macromolecules* 2009; 42:2433-2437.
17. Kim D, Stansbury JW. Kinetic pathway investigations of three-component photoinitiator systems for visible-light activated free radical polymerizations. *Journal of Polymer Science Part A: Polymer Chemistry* 2009; 47:887-898.
18. Kim D, Scranton AB, Stansbury JW. Analysis of association constant for ground state dye-electron acceptor complex of photoinitiator systems and the association constant effect on the kinetics of visible-light-induced polymerizations. *Journal of Polymer Science Part A: Polymer Chemistry* 2009; 47:1429-1439.
19. Kilambi H, Cramer NB, Schneidwind LH, Shah P, Stansbury JW, Bowman CN. Evaluation of highly reactive mono-methacrylates as reactive diluents for BisGMA-based dental composites. *Dental Materials* 2009; 25:33-38.
20. Berchtold KA, Nie J, Stansbury JW, Bowman CN. Reactivity of monovinyl (meth)acrylates containing cyclic carbonates. *Macromolecules* 2008; 41:9035-9043.
21. Antonucci JM, Fowler BO, Weir MD, Skrtic D, Stansbury JW. Effect of ethyl α -hydroxymethylacrylate on selected properties of copolymers and ACP resin composites. *Journal of Materials Science: Materials in Medicine* 2008; 19:3263-3271.
22. Kilambi H, Stansbury JW, Bowman CN. Enhanced reactivity of monovinyl acrylates characterized by secondary functionalities towards photopolymerization and Michael addition: Contribution of intramolecular effects. *Journal of Polymer Science Part A: Polymer Chemistry* 2008; 46:3452-3458.
23. Stansbury JW, Bowman CN, Newman SM. Shining a light on dental composites. *Physics Today* 2008; 61:82-83.

24. Johnson PM, Stansbury JW, Bowman CN. High-throughput kinetic analysis of acrylate and thiol-ene photopolymerization using temperature and exposure time gradients. *Journal of Polymer Science: Part A: Polymer Chemistry* 2008; 46:1502-1509.
25. Johnson PM, Stansbury JW, Bowman CN. Kinetic modeling of a comonomer photopolymerization system using high-throughput conversion data. *Macromolecules* 2008; 41:230-237.
26. Johnson PM, Stansbury JW, Bowman CN. Alkyl chain length effects on copolymerization kinetics of a monoacrylate with hexanediol diacrylate. *Journal of Combinatorial Chemistry* 2007; 9:1149-1156.
27. Lemon MT, Jones MS, Stansbury JW. Hydrogen bonding interactions in methacrylate monomers and polymers. *Journal of Biomedical Materials Research: Part A* 2007; 83A: 734-746.
28. Tanaka J, Stansbury JW, Antonucci JM, Suzuki K. Surface treatment with N,N'-dimethacryloylcystine for enhanced bonding of resin to dental alloys. *Dental Material Journal* 2007; 26:514-518.
29. Kilambi H, Reddy SK, Schneidewind L, Stansbury JW, Bowman CN. Design, development, and evaluation of monovinyl acrylates characterized by secondary functionalities as reactive diluents to diacrylates. *Macromolecules* 2007; 40:6112-6118.
30. Carioscia JA, Stansbury JW, Bowman CN. Evaluation and control of thiol-ene/thiol-epoxy hybrid networks. *Polymer* 2007; 48:1526-1532.
31. Kilambi H, Reddy SK, Schneidewind L, Stansbury JW, Bowman CN. Copolymerization and dark polymerization studies for photopolymerization of novel acrylic monomers. *Polymer* 2007; 48:2014-2021.
32. Johnson PM, Stansbury JW, Bowman CN. Photopolymer kinetics using light intensity gradients in high-throughput conversion analysis. *Polymer* 2007; 48: 6319-6324.
33. Kilambi H, Reddy SK, Beckel ER, Stansbury JW, Bowman CN. Influence of secondary functionalities on the reaction behavior of monovinyl (meth)acrylates. *Chemistry of Materials* 2007; 19:641-643.
34. Kilambi, H, Konopka, D, Stansbury JW, Bowman CN. Factors affecting the sensitivity to acid inhibition in novel acrylates characterized by secondary functionalities. *Journal of Polymer Science: Part A: Polymer Chemistry* 2007; 45:1287-1295.
35. Kilambi, H, Stansbury JW, Bowman CN. Deconvoluting the impact of intermolecular and intramolecular interactions on the polymerization kinetics of ultrarapid mono(meth)acrylates. *Macromolecules* 2007; 40:47-54.

36. Ge J, Trujillo-Lemon M, Stansbury JW. A mechanistic and kinetic study of the photoinitiated cationic double ring-opening polymerization of 2-methylene-7-phenyl-1,4,6,9-tetraoxa-spiro[4.4]nonane. *Macromolecules* 2006; 26:8968-8976.
37. Lemon MT, Ge J, Lu H, Tanaka J, Stansbury JW. Dimethacrylate derivatives of dimer acid. *Journal of Polymer Science: Part A: Polymer Chemistry* 2006; 44:3921-3929.
38. Calheiros FC, Kawano Y, Stansbury JW, Braga RR. Influence of radiant exposure on shrinkage stress, degree of conversion and mechanical properties of resin composites. *Dental Materials* 2006; 22:799-803.
39. Beckel ER, Stansbury JW, Bowman CN. Evaluation of a potential ionic contribution to the polymerization of highly reactive (meth)acrylate monomers. *Macromolecules* 2005; 38:9474-9481.
40. Kilambi H, Beckel ER, Berchtold KA, Stansbury JW, Bowman CN. Influence of molecular dipole on acrylate reactivity. *Polymer* 2005; 46: 4735-4742.
41. Johnson PM, Reynolds TB, Stansbury JW, Bowman CN. High throughput kinetic analysis of photopolymer conversion using composition and exposure time gradients *Polymer* 2005; 46:3300-3306.
42. Carioscia JA, Lu H, Stansbury JW, Bowman CN. Thiol-ene oligomers as dental restorative materials. *Dental Materials* 2005; 21:1137-1143.
43. Hu L, Carioscia JA, Stansbury JW, Bowman CN. Investigations of step-growth thiol-ene polymerizations for novel dental restoratives. *Dental Materials* 2005; 21:1129-1136.
44. Beckel ER, Stansbury JW, Bowman CN. Effect of aliphatic spacer substitution on the reactivity of phenyl carbamate acrylate monomers. *Macromolecules* 2005; 38:3093-3098.
45. Stansbury JW, Trujillo-Lemon M, Lu H, Ding X, Lin Y, Ge J. Conversion-dependent shrinkage stress and strain in dental resins and composites. *Dental Materials* 2005; 21:56-67.
46. Ge J, Trujillo, M, Stansbury JW. Synthesis and photopolymerization of low shrinkage methacrylate monomers. *Dental Materials* 2005; 21:1163-1169.
47. Lu H, Stansbury JW, Nie J, Berchtold K, Bowman CN. Development of highly reactive mono-(meth)acrylates as reactive diluents for dimethacrylate-based dental resin systems. *Biomaterials* 2005; 26:1329-1336.
48. Lu H, Stansbury JW, Newman SM, Bowman CN. Effect of curing protocols on polymerization shrinkage stress development. *Journal of Dental Research* 2005; 84:822-826.

49. Lin Y, Stansbury JW. The impact of water on photopolymerization kinetics of methacrylate/vinyl ether hybrid systems. *Polymers for Advanced Technologies* 2005; 16:195-199.
50. Beckel ER, Nie J, Stansbury JW, Bowman CN. Effect of aryl substituents on the reactivity of phenyl carbamate acrylate monomers. *Macromolecules* 2004; 37:4062-4069.
51. Berchtold KA, Nie J, Stansbury JW, Hacıoglu B, Beckel ER, Bowman CN. Novel monovinyl methacrylic monomers containing secondary functionality for ultra-rapid polymerization: steady state evaluation. *Macromolecules* 2004; 37: 3165-3179.
52. Lu H, Stansbury JW, Dickens SH, Eichmiller FC, Bowman CN. Probing the origins and control of shrinkage stress in dental resin-composites: I. Shrinkage stress characterization technique. *Journal of Materials Science: Materials in Medicine* 2004; 15:1097-1103.
53. Lu H, Stansbury JW, Dickens SH, Eichmiller FC, Bowman CN. Probing the origins and control of shrinkage stress in dental resin-composites: II. Novel method of simultaneous measurement of polymerization shrinkage stress and conversion. *Journal of Biomedical Materials Research Part B: Applied Biomaterials* 2004; 71B:206-213.
54. Lu H, Stansbury JW, Bowman CN. Towards the elucidation of shrinkage stress development and relaxation in dental composites. *Dental Materials* 2004; 20:979-986.
55. Lin Y, Stansbury JW. NIR spectroscopic investigation of water effects on cationic photopolymerization of vinyl ether systems. *Journal of Polymer Science: Polymer Chemistry* 2004; 42:1985-1998.
56. Trujillo M, Newman SM, Stansbury JW. Use of near-IR to monitor the influence of external heating on dental composites. *Dental Materials* 2004; 20:766-777.
57. Stansbury JW, Ge J. Polymerization shrinkage and stress in resins and composites. *RadTech Report* May/June 2003:56-62.
58. Dickens SH, Stansbury JW, Choi KM, Floyd CJE. Photopolymerization kinetics of methacrylate dental resins. *Macromolecules* 2003; 36:6043-6053.
59. Lin Y, Stansbury JW. Kinetics studies of hybrid structure formation by controlled photopolymerization. *Polymer* 2003; 44:4781-4789.
60. Skrtic D, Stansbury JW, Antonucci JM. Volumetric contraction and methacrylate conversion in photopolymerized amorphous calcium phosphate/methacrylate composites. *Biomaterials* 2003, 24:2443-2449.
61. Khatri CA, Stansbury JW, Schultheisz CR, Antonucci JM. Synthesis, characterization and evaluation of urethane derivatives of Bis-GMA. *Dent Mater* 2003; 19:584-588.

62. Lovell LG, Lu H, Elliott JE, Stansbury JW, Bowman CN. Effect of cure rate on the mechanical properties of dental resins. *Dental Materials* 2001; 17:504-511.
63. Tanaka J, Hashimoto T, Stansbury JW, Antonucci JM, Suzuki K. Polymer properties of resins composed of UDMA and methacrylates with the carboxyl group. *Dental Materials Journal* 2001; 20:206-215.
64. Stansbury JW, Dickens SH. Network formation and compositional drift during photo-initiated copolymerization of dimethacrylate monomers. *Polymer* 2001; 42:6363-6369.
65. Stansbury JW, Dickens SH. Determination of double bond conversion in dental resins by near infrared spectroscopy. *Dental Materials* 2001; 17:71-79.
66. Stansbury JW. Curing dental resins and composites by photopolymerization. *Journal of Esthetic Dentistry* 2000; 12:300-308.
67. Harris CD, Holder AJ, Eick JD, Chappelow C.C., Stansbury JW. Semiempirical and ab initio conformational analysis of 2-methylene-8,8-dimethyl-1,4,6,10-tetraoxaspiro[4.5]decane with application of GIAO-SCF methods to NMR spectrum interpretation. *Journal of Molecular Graphics and Modelling* 2000; 18:567-580.
68. Stansbury JW, Antonucci JM. Dimethacrylate monomers with varied fluorine contents and distributions. *Dental Materials* 1999; 15:166-173.
69. Lovell LG, Stansbury JW, Syrpes DC, Bowman CN. Effects of composition and reactivity on the reaction kinetics of dimethacrylate dimethacrylate copolymerizations. *Macromolecules* 1999; 32:3913-3921.
70. Stansbury JW, Liu D-W, Kim SI. Polymer-supported quinuclidinyl catalysts for synthesis of cyclopolymerizable monomers via the aldehyde-acrylate coupling reaction. *Macromolecules* 1997; 30:4540-4543.
71. Choi KM, Stansbury JW. New families of photocurable oligomeric fluoromonomers for use in dental composites. *Chemistry of Materials* 1996; 8:2704-2707.
72. Stansbury JW, Dickens B, Liu D-W. Preparation and characterization of cyclopolymerizable resin formulations. *Journal of Dental Research* 1995; 74:1110-1115.
73. Stansbury JW. Observations related to the amine-catalyzed coupling reaction of aldehydes and acrylates. *Macromolecules* 1993; 26:2981-2982.
74. Stansbury JW, Antonucci JM. Evaluation of methylene lactone monomers in dental resins. *Dental Materials* 1992; 8:270-273.

75. Stansbury JW. Synthesis and evaluation of new oxaspiro monomers for double ring-opening polymerization. *Journal of Dental Research* 1992; 71:1408-1412.
76. Stansbury JW. Synthesis and evaluation of novel multifunctional oligomers for dentistry. *Journal of Dental Research* 1992; 71:434-437.
77. Stansbury JW. Difunctional and multifunctional monomers capable of cyclopolymerization. *Macromolecules* 1991; 24:2029-2035.
78. Stansbury, J.W. Cyclopolymerizable monomers for use in dental resin composites. *Journal of Dental Research* 1990; 69:844-848.
79. Brauer, G.M., Steinberger, D.R., Stansbury, J.W. Dependence of curing time, peak temperature, and mechanical-properties on the composition of bone-cement. *Journal of Biomedical Materials Research* 1986; 20:839-852.
80. Brauer, G.M., Stansbury, J.W., Flowers, D. Modification of cements containing vanillate or syringate esters. *Dental Materials* 1986; 2:21-27.
81. Stansbury, J.W., Brauer, G.M. Divanillates and polymerizable vanillates as ingredients of dental cements. *Journal of Biomedical Materials Research* 1985; 19:715-725.
82. Brauer, G.M., Stansbury, J.W. Intermediate restoratives from n-hexyl vanillate-EBA-ZnO-glass composites. *Journal of Dental Research* 1984; 63:1315-1320.
83. Brauer, G.M., Stansbury, J.W. Cements containing syringic acid-esters - ortho-ethoxybenzoic acid and zinc-oxide. *Journal of Dental Research* 1984; 63:137-140.
84. Brauer, G.M., Stansbury, J.W., Argentar, H. Development of high-strength, acrylic resin compatible adhesive cements. *Journal of Dental Research* 1983; 62:366-370.
85. Brauer, G.M., Stansbury, J.W., Antonucci, J.M. 4-N,N-Dialkylaminoethanols, - alkanolic acids and esters: New accelerators for dental composites. *Journal of Dental Research* 1981; 60:1343-1348.

PREPRINTS

1. Stansbury JW, Pfeifer CS. Tailoring polymethacrylate network structures through polymerization-induced phase separation. *Am Chem Soc, Polym Prepr* 2009 50(1):393-394.
2. Johnson PM, Stansbury JW, Bowman CN. High throughput evaluation and formulation design for photopolymerization. *Am Chem Soc, Polym Mater: Sci Eng* 2008.

3. Lu H, Trujillo-Lemon M, Ge J, Newman SM, Stansbury JW. Stress development and relaxation in crosslinked dimethacrylate polymers. *Am Chem Soc, Polym Mater: Sci Eng* 2007; 97:838-839.
4. Shah PK, Stansbury JW. Modified filler-matrix interfaces in polymeric composites used as dental restoratives. *Am Chem Soc, Polym Prepr* 2007; 48(1):727-728.
5. Stansbury JW, Trujillo-Lemon M, Ding X, Newman SM. Controlled preparation of nanogel particles and their use as macromonomers. *Am Chem Soc, Polym Prepr* 2006; 47(2):825-826.
6. Kilambi H, Stansbury JW, Bowman CN. Mechanistic studies of enhanced polymerization characteristics of novel (meth)acrylic monomers. *Am Chem Soc, Polym Prepr* 2006; 47(1):30-31.
7. Shah PK, Stansbury JW. Polymer-brush modified fillers for dental composites. *Am Chem Soc, Polym Prepr* 2006; 47(1):494-495.
8. Crawford LR, Stansbury JW. Polymerization induced phase separation and polymerization sequence as controls of hybrid cationic/free radical photopolymerizations. *Am Chem Soc, Polym Prepr* 2006; 47(1):496-497.
9. Ge J, Lemon, MT, Stansbury JW. Photopolymerization of 2-methylene-7-phenyl-1,4,6,9-tetraoxaspiro[4.4]nonane. *Am Chem Soc, Polym Prepr* 2006; 47(1):492-493.
10. Ge J, Trujillo-Lemon M, Lu H, Stansbury JW. Investigation of alternative dimethacrylate structures in dental resins. *Am Chem Soc, Polym Mater: Sci Eng* 2005; 93:646-647.
11. Bowman CN, Lu H, Stansbury JW. Thiol-ene dental materials. *Am Chem Soc, Polym Prepr* 2004; 45(2):344-345.
12. Carioscia JA, Lu H, Stansbury JW, Bowman CN. Thiol-ene oligomers as dental restorative materials. *Am Chem Soc, Polym Prepr* 2004; 45(2):346-347.
13. Lin Y, Stansbury JW. Simultaneous characterizations of polymerization kinetics and volume shrinkage in dimethacrylate/divinyl ether hybrid systems. *Am Chem Soc, Polym Prepr* 2004; 45(2):354-355.
14. Trujillo M, Stansbury JW. Effect of external heating during photopolymerization on structure and properties of dental resins. *Am Chem Soc, Polym Prepr* 2004; 45(2):358-359.
15. Ding X, Stansbury JW. Polymer-brush modified fillers for dental composites. *Am Chem Soc, Polym Prepr* 2004; 45(2):339-340.
16. Stansbury JW, Ding X. Epoxy-brush modified fillers for dental composites. *Am Chem Soc,*

- Polym Prepr 2004; 45(2):341-342.
17. Kilambi H, Beckel ER, Stansbury JW, Bowman CN. Kinetic studies of novel (meth)acrylic monomers. Am Chem Soc, Polym Prepr 2004; 45(2):73-74.
 18. Ding X, Stansbury JW, Newman S. Effect of polymer-brush modified filler on photopolymerization. Am Chem Soc, Polym Prepr 2004; 45(2):16-17.
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PUBLISHED ABSTRACTS

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126. Brauer, G.M., Stansbury, J.W. (1981). Peroxy esters and hydroperoxides as initiators for composite resins. IADR Meeting, Chicago, IL.
127. Stansbury, J.W., Argentar, H., Brauer, G.M. (1981). Cements from 2,5-dimethoxyphenol and zinc oxide. IADR Meeting, Chicago, IL.
128. Brauer, G.M., Stansbury, J.W. (1980). Derivatives of p-N,N-dialkylaminophenylalkanoic

acid: New accelerators for dental composites. IADR Meeting, Osaka, Japan.

Other Published Abstracts

1. Kim D, Barros M, Pfeifer C, Knigge K, Stansbury JW. Radical photopolymerizations with extensive dark cure potential. Pacific Polymer Conference 11, Cairns, Australia, December 9, 2009.
2. Shah PK, Garcia JW, Plaseied A, Newman SM, Stansbury JW. Conversion-dependent stress relaxation in dental resins and composites. April 2009, Society for Biomaterials Meeting, San Francisco, CA.
3. Gozalo DJ, Stansbury JW, Baker KP. The effect of implant design on primary stability. February 2009, University of Colorado School of Dental Medicine Research Day, Aurora, CO.
4. Shah PK, Stansbury JW. Conversion dependent evolution of shrinkage, modulus and stress: filler effects. October 2008, Academy of Dental Materials Meeting, Wurzburg, Germany.
5. Pfeifer CS, Stansbury JW, Newman SM. Simultaneous evaluation of degree of conversion and modulus development of an unfilled resin. October 2008, Academy of Dental Materials Meeting, Wurzburg, Germany.
6. Kim D, Pfeifer CS, Jozsa A, Stansbury JW. Three-component radical photoinitiator system: improving methacrylate conversion in the dark. February 2009, University of Colorado School of Dental Medicine Research Day, Aurora, CO.
7. Kim S, Cramer NB, Stansbury JW. Comparing mechanical properties of chain-growth dimethacrylate and step-growth thiol-ene network polymers. February 2008, University of Colorado School of Dental Medicine Research Day, Aurora, CO.
8. Shah PK, Stansbury JW. Effect of particulate filler content on the simultaneous development of shrinkage, modulus and shrinkage stress, as a function of conversion, for a visible light cured composite. February 2008, University of Colorado School of Dental Medicine Research Day, Aurora, CO.
9. Guimarães TC, Pfeifer CS, Braga RR, Stansbury JW. Conversion of resins with different amine:camphorquinone ratios and concentrations. February 2008, University of Colorado School of Dental Medicine Research Day, Aurora, CO.
10. Garcia JW, Shah PK, Stansbury JW. Effects of reaction kinetics and conversion on photopolymerization stress development. February 2008, University of Colorado School of Dental Medicine Research Day, Aurora, CO.

11. Wilson N, Newman SM, Stansbury JW. Depth-dependent photopolymerization reaction kinetics in dental composites. February 2008, University of Colorado School of Dental Medicine Research Day, Aurora, CO.
12. Schreck KM, Boulden JE, Hetzel AK, Cramer NB, Stansbury JW, Bowman CN. Methacrylate-thiol-ene compositions for dental restorative materials. February 2008, University of Colorado School of Dental Medicine Research Day, Aurora, CO.
13. Johnson, P., Bowman, C.N., Stansbury, J.W. Production of light intensity gradients for photopolymer conversion analysis. February 2007, University of Colorado School of Dentistry Research Day, Aurora, CO.
14. Shah PK, Stansbury JW. Modified filler-matrix interfaces in polymeric composites used as dental restoratives. February 2007, University of Colorado School of Dentistry Research Day, Aurora, CO.
15. Musanje L, Ferracane JL, Stansbury JW. Effects of photoinitiator/co-initiators on degree and rate of monomer conversion. February 2007, University of Colorado School of Dentistry Research Day, Aurora, CO.
16. Howard B, Newman SM, Stansbury JW. Coupled dynamic spectroscopic characterization of composite restorative photopolymerization. February 2007, University of Colorado School of Dentistry Research Day, Aurora, CO.
17. Trujillo-Lemon, M., Bowman, C.N., Anseth, K.S., Stansbury, J.W. Development of novel polymers for applications in bioengineering. March 2005, NanoTech Meeting, San Diego, CA.
18. Johnson, P., Bowman, C.N., Stansbury, J.W. High-throughput analysis of photopolymer kinetics. March 2005, CSU Bioengineering Student Research Forum, Fort Collins, CO.
19. Ge J, Lemon MT, Stansbury JW. Photopolymerization of 2-methylene-7-phenyl-1,4,6,9-tetraoxaspiro[4.4]nonane. February 2006, University of Colorado School of Dentistry Research Day, Aurora, CO.
20. Shah PK, Stansbury JW. Polymer-brush modified fillers for dental composites. February 2006, University of Colorado School of Dentistry Research Day, Aurora, CO.
21. Crawford LR, Stansbury JW. Polymerization induced phase separation and polymerization sequence as controls of hybrid cationic/free radical photopolymerizations. February 2006, University of Colorado School of Dentistry Research Day, Aurora, CO.
22. Johnson P, Bowman CN, Stansbury JW. High-throughput analysis of photopolymer kinetics. February 2005, University of Colorado School of Dentistry Research Day, Denver, CO.

23. Ge J, Trujillo-Lemon M, Lu H, Stansbury JW. Dimer acid-derived dimethacrylates as diluent monomers in restorative resins. February 2005, University of Colorado School of Dentistry Research Day, Denver, CO.
24. Trujillo-Lemon M, Lu H, Stansbury JW. Thermal effects on photopolymerization stress development. February 2005, University of Colorado School of Dentistry Research Day, Denver, CO.
25. Lu H, Trujillo-Lemon M, Ge J, Stansbury JW. Developing novel dental resin formulations with dimer acid-derived dimethacrylate. February 2005, University of Colorado School of Dentistry Research Day, Denver, CO.
26. Carioscia J, Bowman CN, Stansbury JW. Network formation of thiol-ene oligomer polymerizations. February 2005, University of Colorado School of Dentistry Research Day, Denver, CO.
27. Ding X, Judd J, Trujillo-Lemon M, Stansbury JW. Resin-based improvements of composites containing polymer brush-modified fillers. February 2005, University of Colorado School of Dentistry Research Day, Denver, CO.
28. Lin Y, Stansbury JW. Impact of photopolymerization kinetics on volumetric shrinkage and phase behaviors of dimethacrylate/divinyl ether hybrid systems. November 2004, MRS Meeting, Boston, MA.
29. Johnson, P., Bowman, C.N., Stansbury, J.W. Rapid analysis of conversion and material properties using photopolymer property gradients. November 2004, AIChE Meeting, San Antonio, TX.
30. Ge, J., Stansbury, J.W. (2004). Investigation of polymerization induced phase separation effect on polymerization shrinkage. November 2004, AIChE Meeting, San Antonio, TX.
31. Lin, Y., Stansbury, J.W. (2004). In situ characterization of conversion and polymerization shrinkage simultaneously in photo-cured hybrid systems. May 2004, RadTech Meeting, Charlotte, NC.
32. Beckel E, Nie J, Stansbury JW, Bowman CN. Monomers effect of aryl substitution on the polymerization rate of novel monovinyl acrylate. November 2003, AIChE Meeting, San Francisco, CA.
33. Stansbury JW, Trujillo M, Bowman CN. Development of pH-responsive hydrogels as biomaterials. February 2003, University of Colorado School of Dentistry Research Day, Denver, CO.
34. Stansbury JW, Trujillo M, Bowman CN. Controlled swelling and degradation of pH-responsive hydrogels. Colorado Alliance for Bioengineering, BioExpo, December 4, 2002,

Aurora, CO.

35. Lin Y, Stansbury JW. Formation of hybrid structure by controlled photopolymerization. February 2002, University of Colorado School of Dentistry Research Day, Denver, CO.
36. Berchtold KA, Beckel ER, Nie J, Hacıoglu B, Stansbury JW, Bowman CN. Development of novel (meth)acrylate monomers for ultrarapid polymerization and enhanced polymer properties. February 2002, University of Colorado School of Dentistry Research Day, Denver, CO.
37. Syrpes DC, Stansbury JW. Monomer reactivity and polymeric network formation in composite dental restoratives. February 2002, University of Colorado School of Dentistry Research Day, Denver, CO.
38. Berchtold KA, Nie J, Stansbury JW, Bowman CN. Structural effects on the cure characteristics of functionalized methacrylate monomers. Society for Biomaterials Meeting, April 26, 2001, St. Paul, MN.
39. Berchtold KA, Nie J, Elliott JE, Hacıoglu B, Luo N, Trotter AJN, Stansbury JW, Bowman CN. Structural effects on the cure characteristics of functionalized methacrylate monomers. RadTech Europe 2001, Conference Proceedings, Basel, Switzerland, October 2001.
40. Stansbury, J.W., Antonucci, J.M. (2000). Ethyl α -hydroxymethylacrylate: an isomeric analog of HEMA. Colorado Alliance for Bioengineering Meeting, Aurora, CO.
41. Tesk, J.A., Stansbury, J.W. (1998). Cyclopolymerizable monomers for use as acrylic biomaterials. Society for Biomaterials Meeting.
42. Reed, B.B., Stansbury, J.W., Antonucci, J.M. (1991). Radical ring-opening characteristics of cyclic vinyl monomers. Amer. Chem. Soc. Meeting, Div. Organic Chem., New York, NY.
43. Antonucci, J.M., Stansbury, J.W., Reed, B.B. (1991). Radical reactivity of cyclic acetals. Amer. Chem. Soc. Meeting, Div. Organic Chem., New York, NY.

PATENTS

1. Kim D, Stansbury JW. Methods for extensive dark curing based on visible-light initiated, controlled radical polymerization. Application No. 40281.0024USP1, filed July 1, 2008.
2. Bowman CN, Carioscia J, Lu H, Stansbury JW. Reactive oligomeric thiol and ene materials as dental restorative mixtures. US 2007/0185230 A1, issued August 9, 2007. Application optioned to Confi-Dental Products.
3. Stansbury JW, Trujillo M, Ding X. Novel nanogel materials and methods of use thereof.

Jeffrey W. Stansbury, PhD
Curriculum Vitae

- Application No. 40281.0005USU1, filed April 28, 2005. Continuation in part filed November 2008 and optioned by Septodont.
4. Stansbury JW, Trujillo M, Ding X. Novel functionalized nanogel materials and methods of manufacture thereof. Application No. 40281.0005USU2, filed April 28, 2005.
 5. Stansbury JW, Trujillo M, Ding X. Novel nanogel materials for use as dental fillers. Application No. 40281.0005USU3, filed April 28, 2005.
 6. Ding Z, Stansbury JW. Polymer brush modified fillers for composites. Application No. 40281.0003USU1, filed March 10, 2005.
 7. Stansbury JW, Trujillo M, Bowman CN. Dimer acid-derived dimethacrylates and use in dental restorative compositions. Application No. 04815826.5-2318, filed December 29, 2004. Application licensed to Confi-Dental Products/Septodont.
 8. Bowman CN, Stansbury JW, Lu H. Novel photopolymers and use in dental restorative materials. Application No. US2004/034968, filed October 22, 2004. Application optioned by Confi-Dental Products Co.
 9. Bowman CN, Stansbury JW, Berchtold KA. (Meth)acrylic and (meth)acrylamide monomers comprising cyclic acetal/thioacetal groups, polymerizable compositions, and polymers obtained. Application No. 2002.114B, filed February 20, 2004.
 10. Bowman CN, Stansbury JW, Berchtold KA, Nie J. (Meth)acrylic and (meth)acrylamide monomers, polymerizable compositions, and polymers obtained. Application No. WO 2004/077511 A2, filed February 20, 2004.
 11. Stansbury JW, Antonucci JM, Choi KM. High strength polymeric networks derived from (meth)acrylate resins with organofluorine contents and process for preparing same. US Patent No. 6,184,399, issued February 6, 2001.
 12. Antonucci JM, Stansbury JW, Fowler BO. Silylated resins and the synthesis thereof. US Patent No. 6,177,534, issued January 23, 2001.
 13. Antonucci JM, Stansbury JW, Cheng G-W. Novel multifunctional acrylates and the synthesis thereof. US Patent No. 5,380,901, issued January 10, 1995.
 14. Stansbury JW. Monomers for double ring-opening polymerization with expansion. U.S. Patent No. 5,463,008, issued October 31, 1995.
 15. Stansbury JW. Improved monomers for double ring-opening polymerization with expansion. US Patent No. 5,362,889, issued November 8, 1994.

16. Stansbury, JW. Synthetic dental compositions formed from cyclopolymerizable bis-acrylate and multi-functional oligomer and bonding method. U.S. Patent No. 5,145,374, issued September 8, 1992.
17. Brauer GM, Stansbury JW. Biocompatible cementitious dental compositions. U.S. Patent No. 4,486,179, issued December 4, 1984.
18. Brauer GM, Argentar H, Stansbury JW. Cementitious dental compositions which do not inhibit polymerization. U.S. Patent No. 4,362,510, issued December 7, 1982.

THESIS DIRECTED

1. Alan Aguirre – “Radical Dark Cure” 2010 – present.
2. Caroline Szczepanski – “Design of Heterogeneous Polymer Structures” 2010 – present.
3. Eric Dialing – “Nanogels applied to tissue engineering”, 2010 – present.
4. JianCheng Liu, “Nanogel Preparation and Applications”, PhD program in Chemical and Biological Engineering, 2009 – present.
5. Abby Tyler (co-advised with Christopher Bowman and Charles Musgrave), “Computational Approaches to Self-Replicating Polymers”, 2009 (withdrawn).
6. Rafael Moraes, co-advised at University of Colorado Denver during 2008 – 2009 within a dental materials graduate program at Piracicaba School of Dentistry, UNICAMP, Brazil. Graduated with PhD. Current faculty at Piracicaba School of Dentistry.
7. Parag Shah, PhD program in Chemical and Biological Engineering, “Polymer Brush Treatment of Fillers used in Dental Restoratives”, 2005 – present.
8. Peter Johnson (co-advised with Professor Christopher Bowman), Chemical and Biological Engineering, “Highly Parallel Methods for Polymerization Process Design and Polymer Characterization”, 2003 – 2007 Graduated with PhD, currently NRC post-doc at the National Institute of Standards and Technology, Gaithersburg, MD.
9. Junhao Ge, Chemical and Biological Engineering, “Development of Low Shrinkage, Low Stress Polymeric Materials”, 2002 - 2006, Graduated with PhD, currently at Ophthonix in San Diego, CA.
10. Laura Crawford, Chemical and Biological Engineering, “Applications of Cationic

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Photopolymerization to Biomaterials”, 2005 – 2006, Graduated with MS (non-thesis), currently at National Renewable Energy Laboratory, Golden, CO.

11. Yan Lin, Chemical and Biological Engineering, “Formation of Hybrid Structures by Controlled Photopolymerization”, 2001 – 2005, Graduated with PhD, currently at Tufts University, Boston, MA.

POST-DOCTORAL RESEARCH ASSOCIATES ADVISED

1. Dr. Carmem Pfeifer, 2008 – 2009 Current faculty at Univ Colorado School of Dental Medicine.
2. Dr. Dongkwan Kim, 2007 - 2010
3. Dr. Hui Lu, 2004-2006. Currently at Dentsply/Caulk, Milford, DE.
4. Dr. Marianela Trujillo, February 2001 – 2005. Currently at Confi-Dental Products Co., Louisville, CO.
5. Dr. Xingzhe Ding, February 2003 – 2004 Currently at Danville Materials, Orange, CA.
6. Dr. Cathrine Gingreau 1993-1995
7. Dr. Kyung M. Choi 1996-1998 (currently at Lucent/Bell Labs)
8. Dr. Chetan Khatri 1998-2000 (currently at NIST)
9. Dr. Michael Weir 2000-2002
10. Dr. Sheherazad Hartzell 1998-1999 (currently in US Navy)

INDEPENDENT STUDY STUDENTS

Kristin Knigge, Summer 2009, “Factors Affecting Radical Dark Cure Behavior with Three-Component Photoinitiators”
Zach Lakeman, Spring 2008, “Surface Modification of Particulate Fillers”
Rami Foster, Fall 2007, “Interphase Characterization in Filled Polymer Composites”
Jeff Arthur, Fall 2001, “Monitoring Gelation and Phase Separation in Photopolymerizations”
Qiaowei Chu, Fall 2000, “Effect of Polymerizable Co-initiators on Photopolymerization”.
Yan Lin, Fall 2000, “Studies of Water Sorption in Monomer and Its Effect on Photopolymerization Using NIR Spectroscopy”.

FACULTY ADVISOR FOR SCHOOL OF DENTAL MEDICINE SUMMER RESEARCH FELLOWSHIP PROGRAM

Nicholas Wilson - 2007
Andrew Foster - 2009

Jeffrey W. Stansbury, PhD
Curriculum Vitae
REU ADVISOR

Kyle Lampe, Summer 2003, "Degradable Photopolymers"

PRESENTATIONS (no published abstract)

1. Novel denture tooth materials. Ivoclar, Amherst, NY, February 8, 2010
2. Design and characterization of low shrinkage, low stress dental restoratives. Department of Endodontics, Prosthodontics and Operative Dentistry, University of Maryland Dental School, Baltimore, MD, December 1, 2009.
3. Overview of dimer acid chemistry: Low polymerization shrinkage and shrinkage stress. Septodont Mindshare Meeting, Miami, FL, November 6, 2009.
4. Selection of monomers and photo-processing conditions to control the structure and properties of heterogeneous polymers. Photopolymerization Fundamentals Conference, Breckenridge, CO, June 22, 2009.
5. Nanogels as prepolymer fillers and reactive macromers. Confi-Dental/Septodont, Lewisville, CO, October 14, 2008.
6. New developments of materials and characterization techniques applied to photopolymerization. 3M/ESPE Seefeld, Germany, October 6, 2008.
7. Use of well designed polymers and polymerization methods to address challenges in dental materials. Keynote talk in Dental Materials/Polymer Chemistry session at IADR Meeting, Toronto, Canada. July 3, 2008.
8. Recent advances in polymer design and polymer characterization techniques. Beijing University of Chemical Technology, Beijing, China, June 20, 2008.
9. Structural control of heterogeneous polymers prepared by photopolymerization-induced phase separation. PC2008 Conference, Hefei, China, June 18, 2008.
10. Advances in resin composite materials and bonding techniques. University of Colorado School of Dental Medicine, Faculty Development Seminar. Aurora, CO, June 12, 2008.
11. New analytical and materials science approaches to dental composite materials. LSU Dental School, New Orleans, LA April 17, 2008.

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12. Controlled formation of polymer/polymer interfaces: Nanogels/macromers from free radical polymerizations. 3M, St Paul, MN April 15, 2008.
13. Optical property monitoring during photopolymerization of composites and phase separating polymers. NIST/CU Research Symposium, Westminster, CO, March 2007.
14. Compositionally heterogeneous networks formed by photopolymerization-induced phase separation. Photopolymerization Fundamentals Conference, Breckenridge, CO, June 25, 2007.
15. New CU chemistry in dental composite restoratives. Alpha-Omega Winter Meeting, Denver, CO, March 7, 2007.
16. Benefits of combined dynamic characterization techniques applied to photopolymerization reactions. American Dental Association Health Foundation at NIST, Gaithersburg, MD, March 11, 2007.
17. Developing new chemistries for polymeric dental materials. Keynote talk in Dental Materials/Polymer Chemistry session at IADR Meeting, Brisbane, Australia. June 30, 2006.
18. Degradable tissue engineering scaffolds with heterogeneous polymeric morphologies. Seminar for ADA/NIST Biomaterials Group, Gaithersburg, MD, October 2005.
19. Manipulation of polymer structure and properties based on photoprocessing controls. Photopolymerization Fundamentals Conference, Breckenridge, CO, June 28, 2005.
20. Evaluation of polymerization shrinkage strain and stress in resin-based dental restoratives. Dentsply/Caulk Summer Clinician Fellowship, Lake George, NY, August 13, 2004.
21. New materials and characterization techniques for dental resins and composites. Portland Composites Symposium, Oregon Health and Science University, Portland, OR, June 17, 2004.
22. Photocurable dental composites: new materials approaches and characterization techniques. Henkel Technologies, Radiation Curing Workshop, Rocky Hill, CT, March 31, 2004.
23. Biomaterials research at the University of Colorado Dental School. University of Connecticut School of Dental Medicine, Farmington, CT, March 30, 2004.
24. Design and analysis of photocurable biomaterials. Department of Chemical Engineering, University of Iowa, Iowa City, Iowa, February 6, 2003.
25. Photopolymerization kinetics from a molecular perspective. Controversies in polymerization of light-activated polymer matrix composites symposium. International Association for Dental Research Meeting, Chiba, Japan, June 27, 2001.

Jeffrey W. Stansbury, PhD
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26. New polymers designed for use as dental materials. Korean Academy of Conservative Dentistry, Seoul National University, April 17, 2001.
27. Development of expanding monomers for dental restoratives. College of Dentistry, Seoul National University, Seoul, Korea, April 17, 2001
28. More stable dental polymers through minimized polymerization shrinkage and reduced water sorption. Japanese Society for Dental Materials and Devices, Tokyo, Japan, April 27, 2000.
29. Effect of monomer structure on reactivity. Fukuoka Dental College, Fukuoka, Japan, April 24, 2000.
30. Near infrared spectroscopy for the analysis of dental polymers. Tokyo Medical and Dental University, Tokyo, Japan, April 20, 2000.
31. Structure-property evaluation of photocured homopolymers from commercial and experimental dimethacrylates. International Symposium on Advanced Materials with Biomedical Applications, National Institute of Standards and Technology, Gaithersburg, MD, June 8, 1999.
32. Homopolymerization studies of new fluorinated dimethacrylate monomers. Fluoropolymers Symposium. American Chemical Society, Division of Polymer Chemistry, Boston, MA, August, 1998.
33. Considerations in the development of semi-fluorinated dental resins and composites. Dental Polymers, Composites and Adhesives Symposium, American Chemical Society, Division of Polymer Chemistry, Las Vegas, NV, September 10, 1997.
34. Evaluation of cross-linkable double ring-opening monomer and oligomer systems. The Science of Adhesion; Gordon Conference, Tilton, NH, August, 1996.
35. Current Dental Materials Research at NIST. American Society of Mechanical Engineers, Applied Mechanics Division and Materials Division Meeting at Johns Hopkins University, Biomaterials Symposium, June, 1996.
36. Dental resins based on alternative monomers and polymerization pathways. Advances in Materials Science: New Approaches and Developments Symposium. International Association for Dental Research Meeting, San Francisco, CA, March, 1996.
37. Photocured composites based on dimethacrylate monomers of varied fluorine content. Macromolecular Secretariat Composites Symposium, American Chemical Society, Division of Polymer Chemistry, Anaheim, CA, April, 1995.

Jeffrey W. Stansbury, PhD
Curriculum Vitae

38. Ring-opening polymerization and its use in dentistry. Lunch and Learn Seminar at the American Association for Dental Research Meeting, San Antonio, TX, March, 1995.
39. Polymers and cyclopolymers from highly fluorinated monomers and oligomers. American Chemical Society, Division of Polymer Chemistry, Biennial Symposium, San Juan, Puerto Rico, November, 1994.
40. Recent advances in the ring-opening polymerization of spiro orthocarbonates. Advances in Polymerization and High Performance Materials; 16th Biennial Symposium of American Chemical Society, Division of Polymer Chemistry, Palm Springs, CA, November, 1992.
41. Ring-opening polymerization of a methacrylate-substituted spiro orthocarbonate. Polymers of Biological and Biomedical Significance Symposium, American Chemical Society, Division of Polymer Chemistry, Washington, DC, August, 1992.
42. Synthesis and polymerization of difunctional and multifunctional monomers capable of cyclopolymerization. William J. Bailey Memorial Symposium, American Chemical Society, Division of Polymer Chemistry, Washington, DC, August 26, 1990.
43. Evaluation of spiro orthocarbonate monomers capable of polymerization with expansion as ingredients in dental composite-materials. Progress in Biomedical Polymers Symposium, American Chemical Society, Division of Polymeric Materials: Science and Engineering, Los Angeles, CA, September 27, 1988.
44. Measuring and managing photopolymerization shrinkage, Photopolymerization Fundamentals 2002 Meeting, Breckenridge, CO, June 7, 2002
45. Development of fluorinated resins as matrix materials for improved composites. National Institute of Standards and Technology, Polymers Division Seminar, October 3, 1996.
46. Overview of research in the Dental and Medical Materials Group at NIST. American Association for Dental Research, Open House for Dental Students, National Institute of Standards and Technology, March, 1995.
47. Control of polymerization shrinkage with unconventional monomers: Ring opening of spiro orthocarbonates and cyclopolymerization. National Institute of Standards and Technology, Polymers Division Seminar, November, 1993.
48. Polymerization studies of methacrylate-substituted spiro orthocarbonate monomers. Volume change during polymerization symposium at the South East Regional Meeting-Mid-Atlantic Regional Meeting, American Chemical Society, Crystal City, VA, December, 1992.

Jeffrey W. Stansbury, PhD
Curriculum Vitae

49. New polymers to chew on; Improved dental composites. University of Colorado School of Dentistry Student Research Group, UCDHSC, Aurora, CO, December 2, 2005.
50. Advances in dental biomaterials. CU Bioengineering Center-NIST Bioengineering Teleconference, UCDHSC Denver, CO, December 1, 2005.
51. Hybrid resins for dental composites: Nano-scale heterogeneous polymers. Dentsply-Caulk, Milford, DE. November 18, 2005.
52. Development of new resins for dental restoratives. Confi-Dental Products, Westminster, CO, November 2, 2005.
53. Polymeric biomaterials from degradable hydrogels to permanent dental filling materials. University of Connecticut School of Dental Medicine, Farmington, CT, March 30, 2004.
54. Controlled swelling and degradation of pH-responsive hydrogels. Colorado Alliance for Bioengineering, BioExpo, Aurora, CO, December 4, 2002.
55. Biomaterials program at University of Colorado School of Dentistry. Fitzsimons Redevelopment Authority, Fitzsimons Fourteeners, Aurora, CO, February 28, 2002.
56. Designing new polymers for biomaterials applications. University of Colorado Health Sciences Center, School of Dentistry, Research Day presentation, February 7, 2001.
57. Ethyl α -hydroxymethylacrylate: an isomeric analog of HEMA. Colorado Alliance for Bioengineering, BioExpo, Aurora, CO, December 6, 2000.
58. Designing polymers to address needs in biomaterials. University of Colorado, Department of Chemical Engineering, Boulder, CO, October 19, 2000.
59. Development of dental resins based on expanding monomers. University of Missouri Dental School, Kansas City, MO, April 14, 1998.
60. New polymers for use in dental materials. University of Colorado, Department of Chemical Engineering Department, Boulder, CO, March 9, 1998.
61. New monomers for dental material applications. Esstech, Essington, PA, May 16, 1997.
62. Alternative polymers for use in dental materials. Institute of Materials Science, University of Connecticut, Storrs, CT, March 28, 1997.
63. Designing monomers to minimize polymerization shrinkage. AT&T Bell Labs/Lucent Technologies, Murray Hill, NJ, February 3, 1997.

Jeffrey W. Stansbury, PhD
Curriculum Vitae

64. Photoinitiated cyclopolymerization of polyfunctional acrylic monomers. Hercules Research Center, Wilmington, DE. October, 1994.
65. Use of double ring opening and cyclopolymerization techniques to improve dental materials. Department of Polymer Science, University of Southern Mississippi, June, 1994.
66. Reduced polymerization shrinkage through monomer design. Institute of Polymer Science, University of Akron, April, 1994.
67. Synthesis and ring-opening polymerization of spiro orthocarbonates. 3M Dental Product Laboratory, St. Paul, MN, September, 1993.

COMMITTEE APPOINTMENTS

Dental School

- | | |
|----------------------|---------------------------------------------------------------|
| March 2008 – present | Faculty Promotion and Tenure Subcommittee (member) |
| May 2007 - 2009 | Accreditation Committee - Research Programs (member) |
| 2006 | Craniofacial Biology Faculty Search Committee (chair) |
| 2003 -2005 | Facilities and Administrative Costs Waiver Committee (member) |
| 2002 - present | Research Committee (chair as of 1/09) |

Chemical & Biological Engineering

- | | |
|---------------|------------------------------------------------------------------------------------------|
| 2009 | Bioengineering Degree Committee |
| 2008 | Graduate student preliminary exam committees (member on 5) |
| 2008 | Graduate recruitment committee (member) |
| 2007 | Faculty Search Committee (member) |
| 2007 | Graduate student preliminary exam committees
for 8 students (7 as member; 1 as chair) |
| 2006 | Graduate student preliminary exam committees (member on 3) |
| 2005 | Graduate student preliminary exam committees (member on 2) |
| 2001– present | Graduate student thesis committees |

University

- | | |
|----------------|------------------------------------------------------------------------|
| November 2009 | CAPT Center Executive Board (member) |
| 2008 - present | Participant and Clinical Interactions Resources Oversight
Committee |
| 2007 | Discovery, Creativity and Innovation Task Force (member) |
| 2002 - present | Research Park Advisory Committee (member) |
| 2002 | Advisory Board for Strategic Planning and Intellectual Property Policy |
| 2001 – present | Bioengineering Steering Committee (member) |

Jeffrey W. Stansbury, PhD

Curriculum Vitae

National/International

2010	Program Chair, International Association for Dental Research, Dental Materials Group, Polymeric Materials – Properties and Performance
2008-2009	Program Chair, International Association for Dental Research, Dental Materials Group, Polymer Chemistry Section
2007-2008	Abstract reviewer, International Association for Dental Research, Dental Materials Group, Polymer Chemistry Section
2005 – 2006	Program Chair, International Association for Dental Research, Dental Materials Group, Polymer Chemistry Section

Department of Chemical and Biological Engineering (CU Boulder) graduate thesis committee member for:

Brian Adzima (advisor – Christopher Bowman)

Raveesh Shenoy (advisor – Christopher Bowman)

Cole DeForest (advisor – Kristi Anseth)

Neven Steinmetz (advisor – Stephanie Bryant)

Alex Aimetti (advisor - Kristi Anseth)

McKinley Lawson (advisor – Kristi Anseth/Christopher Bowman) Graduated with PhD, 2008

Jeff Arthur (advisor – Kristi Anseth)

Idalis Villanueva (advisor – Stephanie Bryant)

Vaibhav Khire (advisor – Christopher Bowman) Graduated with PhD, 2008

April Kloxin (advisor – Kristi Anseth)

Chelsea Salinas (advisor – Kristi Anseth) Graduated with PhD, 2007

Ben Fairbanks (advisor – Kristi Anseth)

Jacquelyn Carioscia (advisor – Christopher Bowman) Graduated with PhD, 2006.

Amber Rydholm (co-advised by Christopher Bowman and Kristi Anseth) Graduated with PhD, 2006.

Harini Kalambi (advisor - Christopher Bowman) Graduated with PhD in 2006.

Andrew Watkins (advisor – Kristi Anseth) Graduated with PhD in 2006.

Sirish Reddy (advisor - Christopher Bowman) Graduated with PhD in 2006.

Charles Nuttelman (advisor – Kristi Anseth) Graduated with PhD, 2005.

Hui Lu (advisor - Christopher Bowman), Graduated with PhD, 2004.

Eric Beckel (advisor - Christopher Bowman), Graduated with PhD, 2004.

Penny Martens (advisor - Kristi Anseth) Graduated with PhD, 2003.

Stephanie Bryant (advisor - Kristi Anseth) Graduated with PhD, 2003.

Allison O'Brien (advisor - Christopher Bowman) Graduated with PhD, 2002.

Tara Lovestead (advisor - Christopher Bowman) Graduated with PhD, 2002.

Kathryn Berchtold (advisor - Christopher Bowman) Graduated with PhD, 2001.

Lale Lovell (advisor - Christopher Bowman), Graduated with PhD, 2000.

Dental student advisees:

Demitrios Syrpes: runner up, 2002 ADA/DENTSPLY Student Clinician Research Program for “Monomer Reactivity and Polymeric Network Formation in Composite Dental Restoratives”.

Jeffrey W. Stansbury, PhD
Curriculum Vitae

Nicholas Wilson: runner up, 2009 ADA/DENTSPLY Student Clinician Research Program for "Dimethacrylate Network Development in the presence of Chain-Transfer Agents"; Sue Kintzele Scholar 2009-2010 from the Colorado Chapter of ARCS; 2010 Student Table Clinic Award from the Academy of Operative Dentistry; IADR 2009; AADR 2008.

SOCIETY/PROFESSIONAL ORGANIZATIONS

2005 - present	Academy of Dental Materials
2000 - present	American Association for Dental Research - Colorado Section President 2002-2005; 2007 - 2010 Councilor 2005-2006; 2010-2012
2000 – present	American Chemical Society - Colorado Section
2000 - 2005	Colorado Alliance for Bioengineering Executive Board Member
1998 – present	IADR Dental Materials Group
1991-2000	American Association for Dental Research - Washington, DC Section Councilor 1997-2000 President 1996-1997
1994 – present	American Chemical Society Division of Polymeric Materials: Science and Engineering
1987 - present	American Chemical Society Division of Polymer Chemistry
1983 - present	International Association for Dental Research (IADR)
1983 - 2000	American Chemical Society - Washington, DC Section
1980 - present	American Chemical Society

ACADEMIC REVIEW ACTIVITIES

Editorial Board Member, Dental Materials	2010-Present
Editorial Board Member, Polymers for Advanced Technologies	2000-Present

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Curriculum Vitae

Editorial Board Member, Journal of Applied Oral Science 2007-Present

Reviewer for Dept of Defense, DEPSCoR program 2008

Reviewer, Wellcome Trust 1999-2000

Reviewer/Member (ad hoc), NIH Oral, Dental and Craniofacial Sciences (formerly: Oral Biology and Medicine) 1997-Present

Reviewer, NIH Small Business Innovation Research 1996-Present

Reviewer, NIST Advanced Technology Program 1992-2000

Reviewer, National Science Foundation 1988-Present

Manuscript Reviewer for:

Biomaterials

Carbohydrate Polymers

Chemistry of Materials

Composite Science and Technology

Critical Reviews in Oral Biology and Medicine

Dental Materials, Encyclopedia of Polymer Science and Technology

European Journal of Oral Science

European Polymer Journal

Journal of Applied Polymer Science

Journal of Biomaterials Science

Journal of Biomedical Materials Research

Journal of Combinatorial Chemistry

Journal of Composite Materials

Journal of Dental Research

Journal of Dentistry

Journal of Materials Science

Journal of Photochemistry and Photobiology

Journal of Polymer Research

Journal of Polymer Science

Journal of Prosthodontics

Journal of Rheology

Macromolecular Chemistry and Physics

Macromolecular Reaction Engineering

Macromolecules

Nuclear Instruments and Methods in Physics Research

Polymer

Polymer International

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Curriculum Vitae

Polymers for Advanced Technologies

Reactive and Functional Polymers

Vibrational Spectroscopy

CONSULTANTSHIPS

University of South Dakota School of Mines and Technology for development of dental resins (Hao Fong, PI; NIDCR)	2009
SLS Hybrid Ceramic for development of improved dental materials	2007-Present
Envisiontec, Inc. for development of photolithographic materials and suitable analytical characterization techniques	2005
Biopiant R&D for development of delivery devices for in-situ curable degradable polymeric biomaterials	2005-Present
University of Oregon Health and Sciences University for synthesis and characterization of degradable polymers on an R21 (Mitchell, PI)	2005-Present
American Dental Association Health Foundation Center of Excellence for Materials Science Research	1994-1999