

PUBLICATIONS:

Patents

6. US Patent 7,695,970, R.S. Parnas and Y.P. Patil, Optical fiber based fluorescence sensor for in-situ measurement and control of fuel cells, April 13, 2010.
5. US Patent 7,520,929 B2, D. Woerdeman, W. Vereverbeke, I. Verpoest, J. Delcour and **R.S. Parnas**, Gluten Biopolymers, April 21, 2009.
4. US Patent 7,544,830, **R.S. Parnas**, C. Weed, N. Leadbeater, M. Boucher, Methods and Systems for Alkyl-Ester Production, June 9, 2009.
3. US Patent Application, 20110042315, **R.S. Parnas** and S.Y. Li, Pervaporation Composite Membrane for Aqueous Solution Separation and Methods for Using the Same, August 19, 2009.
2. US Patent Application, 20090247785, **R.S. Parnas** and M. Boucher, Methods and Systems for Pretreatment of an Oil Stream, June 1, 2009.
1. Patent PCT/BE03/000163, D. Woerdeman, ..., **R.S. Parnas**, Gluten Biopolymers, 2005.

Books & Chapters

4. L.M. McGrath, J.L. Lenhart, **R.S. Parnas** and S.H. King, Fracture Toughness and Rheology of Alumina-Filled Epoxy Composites, ACS Symposium Series on Polymer Durability and Radiation Effects, V. 978, 328, 2008.
3. R.S. Parnas, *Liquid Composite Molding*, Hanser-Verlag, 2000.
2. R.S. Parnas, Chapter 8. Preform Permeability, in *RTM for Aerospace Applications*, T.K. Kruckenberg (ed.), Chapman & Hall, 1998.
1. S.G. Advani, M.V. Brusckhe, and **R.S. Parnas**, Resin Transfer Molding, in *Flow and Rheology in Polymeric Composites Manufacturing*, S.G. Advani (ed.), Elsevier, 465-515, 1994.

Invited Peer Reviewed Papers

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4. D.L. Woerdeman, K.M. Flynn, J.P. Dunkers, and **R.S. Parnas**, The Use of Evanescent Wave Fluorescence Spectroscopy for Control of the Liquid Molding Process, *J. Reinforced Plastics and Composites*, **15**, 922-43, 1996.
3. **R.S. Parnas**, C.R. Schultheisz, and S. Ranganathan, Hydrodynamically Induced Preform Deformation, *Polymer Composites*, **17**(1), 4-10, 1996.
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1. **R.S. Parnas**, A.J. Salem, T.A.K. Sadiq, H.P. Wang, and S.G. Advani, The Interaction Between Micro and Macroscopic Flows in RTM Preforms, *Composite Structures*, **27**, 93-108, 1994.

Peer Reviewed Journal Articles

74. S. Hemsri, K. Grieco, A.D. Asandei and R.S. Parnas, Biopolymer Composites of Wheat Gluten with Silica and Alumina, *Composites, Part A*, 2011, submitted.
73. I. Noshadi, N.A.S. Amin, **R.S. Parnas**, Continuous production of biodiesel from waste cooking oil in a reactive distillation column catalyzed by superacid heteropoly acid: Optimization using response surface methodology (RSM), *Fuel*, 2011, submitted.

72. K. Okonkwo, P. Simacek, S.G. Advani and **R.S. Parnas**, Characterization of 3D Fiber Preform permeability tensor in radial flow using an inverse algorithm based on sensors and simulation, *Composites, Part A*, 2011, in press.
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67. S.Y. Li, R. Srivastava and **R.S. Parnas**, Separation of 1-butanol by pervaporation using a novel PDMS/PE composite membrane, *J. Membrane Sci.*, **363**, 287–94, 2010.
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14. T.A.K. Sadiq, S.G. Advani, and **R.S. Parnas**, Experimental Investigation of Transverse Flow Through Aligned Cylinders, *Int. J. Multiphase Flow*, **21(5)**, 755-74, 1995.
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1. **R.S. Parnas** and S.K. Friedlander, Particle Deposition by Diffusion and Interception from Boundary Layer Flows, *Aerosol Sci. Tech.*, **3**, 3-8, 1984.

Invited Talks

115. Industrial Chemistry in the Biofuels World: It's not just the reactor, Brown University Chemistry Dept., February 22, 2011.
114. Kickstarting a Biofuels Industry in New England, Chemical Engineering Dept., Worcester Polytechnic Institute Chemical Engineering Dept., November 17, 2010.
113. Biofuels to Keep our Civilization Running, Engineering Leadership and Energy Crisis Conference, Bernard and Sophia Gordon Engineering Leadership Center, University of California, San Diego, October 14, 2010.
112. Biofuels to Keep our Civilization Running, Department of Natural Resources and the Environment, University of Connecticut, October 1, 2010.
111. Reaction Engineering for Scalable Biofuels Production, US-China Workshop on Biofuels, University of New Hampshire, Durham, NH, June 1, 2010.
110. Biofuels Research at UCONN and the Materials Needed to Move Forward, Institute of Materials Science Advisory Board Meeting, University of Connecticut, May 27, 2010.
109. UConn Biofuels, UConn 2010 Biofuels Symposium, April 8, 2010.
108. Variable Feedstock Biodiesel Synthesis via Novel Laminar Flow Reactor / Separator, BlazeTech Corp., Woburn, MA, March 12, 2010.
107. Biofuels at UCONN, Guest Lecture in EcoHouse INTD 1784, University of Connecticut, Feb. 16, 2010.
106. Sustainable Energy Solutions, Connecticut Venture Group, December 10, 2009.
105. Biofuels at UCONN, Guest Lecture in EcoHouse INTD 1810, University of Connecticut, Dec. 2, 2009.

104. Protein Based Plastics and Biodiesel Fuel: 2 Sides of the Sustainability Coin, Consorzio San Marco Innovazione, Hotel Fiore, Castel Franko, Italy, July 11, 2009.
103. Low Value Waste to High Value Fuel and Power, Idroesse Infrastrutture SpA, Padova, Italy, July 8, 2009, Low Value Waste to High Value Fuel and Power, Fincantieri SpA, Venice, Italy, July 9, 2009.
102. Alternative Fuels vs the Vested Interests, Guest Lecture in Political Science 3208, University of Connecticut, April 22, 2009.
101. Protein Based Plastics and Biodiesel Fuel: 2 Sides of the Sustainability Coin, Syracuse University, April 9, 2009.
100. Biodiesel Education at the University of Connecticut, Rennselaer Polytechnic Institute, April 1, 2009.
99. Two Sides of Sustainability – Biodegradable Plastics and Biodiesel Fuel, Rennselaer Polytechnic Institute, April 1, 2009.
98. What role should biofuels play in our future energy mix?, Featured presentation on <http://www.commentvisions.com/month/march/2009>, an international forum on climate change.
97. CREST / UCONN BioFuels Partnership Proposal, Crest Ultrasonics, Trenton, NJ, Jan. 22, 2009.
96. Industrial Chemistry Governs the Usefulness of BioPlastics and BioFuels, University of California Los Angeles, Nov. 7, 2008.
95. Explorations with Wheat Protein for Biodegradable Plastics, Composites and Fibers, University of Delaware, Oct. 9, 2008.
94. Green is the Thing – Biodegradable Plastics and Biodiesel Looking for Integration, Tufts University, Oct. 6, 2008.
93. Biofuels at Home, in the Workplace, and in the Sustainable Economy, University of Rhode Island, June 26, 2008.
92. Green Polymers and Sustainable Energy, Eastern Connecticut State University, April 16, 2008.
91. Composite Structures at Several Length Scales, Air Force Research Laboratory, Edwards Air Force Base, CA, Feb.28, 2008.
90. Biofuels in New England: A Once in a Lifetime Opportunity, AIChE Boston Chapter, Jan.10, 2008.
89. The UConn Biofuels Consortium with Emphasis on Chemical Engineering, Winchester High School, Winchester, MA, Jan.3, 2008.
88. Biofuels in Connecticut: A Once in a Lifetime Opportunity, UConn/Mansfield Climate Change Conference, University of Connecticut, Nov.1, 2007.
87. Biofuels Initiative at UConn and Further Afield, Materials Science & Engineering Program, University of Connecticut, Oct. 24, 2007.
86. The Biofuels Revolution, Does CT have a Role?, Suffield Town Public Forum, October 10, 2007.
85. Biodiesel R&D at the University of Connecticut with an Engineering Perspective, Northeast Joint Summer Meeting of Northeastern Regional Association of State Agricultural Experiment Station Directors (NERA), the Northeast Extension Directors (NEED), Northeast Academic Heads (AHS), members of the Council for Agricultural Research, Extension and Teaching (CARET), July 9, 2007, Providence RI.
84. The UConn Biofuels Consortium with Emphasis on Chemical Engineering, Greater Hartford Academy of Math and Sciences, June 11, 2007.
83. KISS Reactor Design for Biodiesel, Connecticut Venture Group, Avery Point, CT, June 6, 2007.
82. Global Warming-New Opportunities for Idealists And Business Development, ASM Hartford Chapter, March 20, 2007.
81. Investigation of Wheat Gluten for Industrial Composites, USDA NRI Conference, Washington DC, March 13, 2007, poster.

80. Biofuel Feedstocks for Polymers, UConn/ICCAS polymer symposium, March 10, 2007.
79. Global Warming-New Opportunities for Idealists And Business Development, University of Connecticut Research & Development Corporation, Annual Board of Directors Meeting, March 1, 2007.
78. Wheat protein as a possible low cost composite matrix, Genie Mechanique de Ecole Polytechnique du Montreal, Feb.27, 2007.
77. Statistical Correlations of the Permeability Tensor, Genie Mechanique de Ecole Polytechnique du Montreal, Feb.27, 2007.
76. Global Warming-New Opportunities for Idealists And Business Development, World Affairs Forum, Greenwich, CT, Feb.22, 2007.
75. The Formation of the UConn Energy Institute, US Coast Guard Academy, Dec. 12, 2006.
74. Biofuels at UConn, CT State Legislative Fuel Diversification Task Force, Dec. 1, 2006.
73. Big Molecules Are Inside of Us and All Around Us, Greater Hartford Academy of Math and Science, High School Science Teacher Professional Development, Nov.7, 2006.
72. L.M. McGrath, Q. Liu and R.S. Parnas, Statistical Correlations in the Permeability Tensor, Proc. 8th Int. Conf. on Flow Processes in Composite Materials, Douai, France, July 2006, invited.
71. Liquid Composite Molding – The Role of Permeability, Beijing Aerospace, Beijing China, July 4, 2006.
70. Thiolation to Compatibilize Polymer / Protein Blends, Polymer Physics 2006, Suzhou China, June 1-5, 2006.
69. The role of thiolated additives in modifying the properties of wheat protein, Physics Dept., University of Akron, Akron, OH, 6 April. 2006.
68. Fiber Optic Monitoring of the Liquid Composite Molding Process, Genie Mechanique de Ecole Polytechnique du Montreal, 15 February, 2006. 3 hour short course.
67. Cure Kinetics of Common Resins Used in Liquid Composite Molding, Genie Mechanique de Ecole Polytechnique du Montreal, 13 February, 2006. 3 hour short course.
66. Optical Fiber Fluorescence for In-Situ Membrane Performance Measurement, Mechanical Engineering Dept., University of Connecticut, 24 September, 2004.
65. Wheat Protein Based Commodity Plastic, Polymer Science & Engineering Dept., University of Massachusetts, Amherst, MA, 17 September, 2004.
64. An experimentalist's view of modeling composite molding processes, NSF/DOE/APC Future of Modeling in Composites Molding Processes workshop, June 9, 2004, in Arlington, VA.
63. Low Cost Composites - Can We Control their Properties, and Some New Material Ideas, UC San Diego Structural Engineering Department, March 29, 2004.
62. An Engineering Approach to Wheat Protein Based Commodity Plastics, USDA National Center for Agricultural Utilization Research, Peoria, IL, 2, Dec. 2003.
61. Wheat Gluten as a Commodity Plastic?, National Association of Wheat Growers, 9 September, 2003.
60. Fiber Optic Sensors for Fuel Cells, United Technologies Research Center, 7 August, 2003.
59. Stochastic Process Parameters in Liquid Composite Molding, Michigan Technological University, 28 February, 2003.
58. Stochastic Process Parameters in Liquid Composite Moulding, Vrije Universiteit Brussel, Belgium, 31 January, 2003.
57. Comparison of Imaging Results and Image Analysis for Microstructure and Damage Analysis in Composites, General Electric Corporate R&D, Schenectady, NY, November 12, 2002.
56. Controlling the liquid moulding process by noticing the 3-D fibre architecture, Symposium on The Past, Present and Future of Polymer Composites, Katholieke Universiteit, Leuven, Belgium, 6 – 7 November, 2002.

55. Length Scales in Heterogeneous Media, Olin Materials Research Laboratory, New Haven, CT, July 9, 2002.
54. Composites Manufacturing at Many Length Scales, Army Research Laboratory, Aberdeen, MD, April 18, 2002.
53. Can the Properties of Commercial Composites be Controlled?, Gordon Conference on Composites, Ventura, CA, January, 2002.
52. Several Length Scales Important for Composites Manufacturing, EPFL, Lausanne Switzerland, June 1, 2001.
- 49-51. An Introduction to the Many Length Scales that Impact Composites Manufacturing. A series of 3 lectures given at Katholieke Universiteit, April 2001 (1. Composite Manufacturing - The Liquid Molding Example, 2. Quality Control Issues at the Large Scale During Liquid Molding Operations, 3. Measurement Technology for Probing the Buried Interface in Composites).
48. Sensors and Imaging in Composites, University of Connecticut, Storrs, CT, April, 2000.
47. Processing for Microstructural Control in Polymer Composites, University of Pittsburgh, Pittsburgh, PA, March, 2000.
46. Measurements for Processing and Characterization of Composites and Tissue Scaffolds, Rensselaer Polytechnic Institute, Troy, NY, Feb.10, 2000.
45. Microstructural Measurements in Polymer Composites, University of Massachusetts, Lowell, MA, Nov.2, 1999.
44. Composites Process Modeling, and Measuring Your Mistakes with Sensors, Pennsylvania State University, State College, PA, Oct.1999.
43. Flow Prediction in Real Structures Using Optical Coherence Tomography and Lattice Boltzmann Mathematics, 5th Int. Conf. On Flow Proc. in Comp. Mat., Keynote Lecture, Plymouth, UK, July 1999.
42. Micro-Structural Characterization of Polymer Composites, Katholieke Universiteit, Leuven, Belgium, March 4, 1999.
41. Micro-Structural Characterization Techniques for Polymer Composites, Cranfield University, Cranfield, UK, March 5, 1999.
40. Evanescent Wave Fiber Optic Spectroscopy with Long Period Gratings for both Flow and Cure Monitoring of Liquid Composite Moulding, ESPRC Engineering Programme Network, Farnborough, UK, March 6, 1999.
39. Optical Fiber Sensors for Composites, SPE Thermoset RETEC, Chicago, IL, March 5, 1998.
38. Polymer Composites Research at NIST, NRL, Washington, DC, March 23, 1998.
37. Monitoring Composites with Optical Fiber Sensors, SPE ANTEC'98, Atlanta, GA, May, 1998, **Best Paper Award**.
36. J.L. Lenhart, J.H. van Zanten, J.P. Dunkers, C.G. Zimba, C.A. James, S.K. Pollack, R.S. Parnas, A Fiber Optic Sensor for Composite Cure Monitoring, Proc. ASC Conference, Baltimore, MD, Sept.1998.
35. S.M. Kueh, S.G.Advani and R.S. Parnas, Virtual Sensor Simulation Study of Flow During Resin Transfer Molding Process, ASC Conference, Baltimore, MD, Sept.1998.
34. J.Dunkers, C.Zimba, K.Flynn, R.Parnas, D.Hunston, J. Fujimoto, B. Bouma and R. Prasankumar, Optical Coherence Tomography of Polymer Composites, ASC Conference, Baltimore, MD, Sept.1998.
33. Real Structure Determination for Permeability Prediction, 8th US-Japan Conf on Composite Mat, Baltimore, MD, Sept.1998.
32. Quality Control Tools for Composites Processing, Chemical Eng. Dept. University of Missouri, Oct. 1998.
31. Optical Fiber Based Sensors for Monitoring and Control of Composites Manufacturing, International Conference on Automated Composites, Glasgow, Scotland, Sept. 4, 1997.
30. Evanescent Wave Optical Fiber Spectroscopy for Composites Processing, College de France, Paris, Sept. 7, 1997.

29. Evanescent Wave Optical Fiber Spectroscopy: Mode Coupling Theory, Corning France, S.A., Fountainbleau, Sept. 8, 1997.
28. Experiments with Evanescent Wave Optical Fiber Sensors, Symposium on Rheology and Fluid Mechanics of Nonlinear Materials, ASME International Mechanical Engineering Congress & Exposition, Dallas, TX, November 16, 1997.
27. Mode Coupling Theory for Evanescent Wave Optical Fiber Sensors, Symposium on CAE and Intelligent Processing of Polymeric Materials, ASME International Mechanical Engineering Congress & Exposition, Dallas, TX, November 16, 1997.
26. Composites Program in the NIST Polymers Division, North Carolina A&T University, April, 1996.
25. D. Surlas, S. Naha, G. Patterson, R. Parnas, Measurement and Control of Liquid Composite Molding, AIChE Annual Meeting, Chicago, IL, November, 1996.
24. Permeability Measurement, in Short Course on Liquid Molding, University of Nottingham Composites Club, Nottingham, England, Sept.5, 1995.
23. Evanescent Wave Optical Fibre Sensors for Monitoring and Control of the Liquid Moulding Process, International Conference on Automated Composites, Nottingham, England, Sept.6, 1995.
22. The Use of Evanescent Wave Fluorescence Spectroscopy in Process Control of the Liquid Molding Process, International Conference on Composite Materials and Energy, Montreal, Canada, May, 1995.
21. D. Woerdeman, R. Parnas, J. Spoerre and B. Wang, Evanescent Wave Fluorescence Cure Monitoring for Use with Process Control of the Liquid Molding Process, AIChE Annual Meeting, Miami Beach, FL, November, 1995.
20. H.L. Friedman, R.A. Johnson, B. Miller, D.R. Salem, and R.S. Parnas, In-Plane Movement of Fluid Through Curved Fabric Structures, *ASME Symposium on Composite Materials*, November 1995, San Francisco, CA.
19. An Evanescent Wave Fluorescence Sensor for Process Control of RTM, University of Michigan, October, 1994.
18. Liquid Composite Molding: Experiments and Modeling, University of Minnesota, October, 1994.
17. Manufacturing Polymer Composites by Liquid Composite Molding, University of Delaware, November, 1994.
16. Resin Transfer Molding Optimization using 3-D Permeability Tensors, Gordon Conference on High Performance Thermosets, Plymouth, NH, June, 1993.
15. Anisotropy and Heterogeneity in RTM Preforms: Structure-Flow Relationships, Gordon Conference on Composites, Ventura, CA, January, 1992.
14. Brownian Dynamics of Terminally Anchored Polymer Chains in Shear Flow, Dept. of Materials Science, University of California at Santa Barbara, January, 1992.
13. A Comparison of the Radial and the One-D Flow Techniques for Measuring Permeability, Department of Engineering Mechanics, Pennsylvania State University, October, 1992.
12. The Interaction Between Micro- and Macro-scopic Flows in RTM Preforms, Conference on High Performance Composite Materials, Capri Italy, June 1992.
11. Anisotropy and Heterogeneity in the Flow of Fluids through Woven Composite Reinforcements, Dept. of Chemical Engineering, University of Maryland, May, 1991.
10. The Effects of Heterogeneities on the Mold Filling Behavior in Resin Transfer Molding, GE Corporate Research, Schenectady, NY, July 1990.
9. Consequences of Heterogeneity and Anisotropy on Fluid Flow in Resin Transfer Molding Preforms, Michigan Molecular Institute, Midland, MI, December, 1990.
8. Macromolecular Behavior at Solid Surfaces, Dept. of Chemical Engineering, University of Cincinnati, Cincinnati, OH, Jan. 1989.
7. Macromolecular Behavior at Solid Surfaces, Dept. of Chemical Engineering, Washington University, St. Louis, MO, Jan. 1989.

6. The Hydrodynamics of Surface Bound Polymer, Dept. of Chemical Engineering, University of Southern California, Los Angeles, CA, May 1989.
5. Macromolecular Layers Subjected to Shear Flows, IBM Almaden Research Laboratories, Polymers Division, San Jose, CA, June 1989.
4. Polymers at Interfaces, SRI International, Chemical Engineering Laboratory, Menlo Park, CA, June 1989.
3. Polymers at Interfaces, NIST Polymers Division, July 1989.
2. Compound Class Modeling of Thermal Hydrolysis, Engineering Foundation Conference on Chemical Reaction Engineering, Santa Barbara, CA, 1987.
1. Aerosol Deposition on Rough Surfaces From Turbulent Flows, Dept. of Chemical Engineering, Washington University, St. Louis, MO, March 1984.

Contributed Presentations and Conference Proceedings

95. Unker, S.A., Boucher, M.B., Hawley, K.R., Midgette, A.A., Stuart, J.D., Parnas, R.S., Investigation into the Relationship Between the Gravity Vector and the Flow Vector to Improve Performance in Two-Phase Continuous Flow Biodiesel Reactor, Prepr. Pap.-Am. Chem. Soc., Div. Petroleum Chem. **2010**, 56 (1).
94. M. Donahue, W. Smith, C. Shende, S. Farquharson and R. Parnas, Monitoring Biodiesel Reactors by Raman Spectroscopy, Biodiesel/Biofuel Analysis Symposium, Talk #547, Eastern Analytical Symposium, Somerset, N.J., November 19, 2009.
93. Dong, J.; Parnas, R.; Asandei, A. D. Viscoelastic Properties of Wheat Gluten/Thiolated Poly(Vinyl Alcohol) Aqueous Solutions. *Polym. Prepr.* **2009**, 50(1), 97.
92. Hemsri, S.; Simpson, C. P.; Parnas, R. S.; Asandei, A. D. Isocyanate, Thiol, Epoxide and Hydroxy Functionalized Silane Coated Alumina/Wheat Gluten Blends. *Polym. Prepr.* **2009**, 50(1), 171.
91. Dong, J.; Parnas, R.; Asandei, A. D. Time Dependent Rheological Behavior of Wheat Gluten-Based Aqueous Mixtures. *Polym. Mater.: Sci. Eng.* **2009**, 100, 231.
90. Hemsri, S.; Simpson, C. P.; Parnas, R. S.; Asandei, A. D. Wheat Gluten Blends with Aldehyde, Thiol, Epoxide and Hydroxy Functionalized Silane Coated Alumina. *Polym. Mater.: Sci. Eng.* **2009**, 100, 204.
89. Dong, J.; Parnas, R.; Asandei, A. D. Chemical interactions while electrospinning wheat gluten / thiolated additive blends from aqueous solutions. The 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009.
88. Dong, J.; Parnas, R.; Asandei, A. D. Time Dependent Rheological Behavior of Wheat Gluten-Based Aqueous Mixtures. The 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009.
87. Hemsri, S.; Simpson, C. P.; Parnas, R. S.; Asandei, A. D. Wheat Gluten Blends with Aldehyde, Thiol, Epoxide and Hydroxy Functionalized Silane Coated Alumina. The 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009.
86. Hemsri, S.; Simpson, C. P.; Parnas, R. S.; Asandei, A. D. Isocyanate, Thiol, Epoxide and Hydroxy Functionalized Silane Coated Alumina/Wheat Gluten Blends. The 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009.
85. Dong, J.; Parnas, R.; Asandei, A. D. Viscoelastic Properties of Wheat Gluten/Thiolated Poly(Vinyl Alcohol) Aqueous Solutions. The 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009.
84. Dong, J.; Wu D.; McGrath, L. M.; Parnas, R.; Asandei, A. D. Morphology and mechanical properties of wheat gluten/thiol-functionalized alumina blends. *Polym. Prepr.* **2008**, 49(2), 752.
83. Dong, J.; Parnas, R.; Asandei, A. D. Role of disulfide bonds in the electrospinning of wheat gluten blends from water/1-propanol. *Polym. Mater.: Sci. Eng.* **2008**, 99, 40.
82. Hemsri, S.; Simpson, C. P.; McGrath, L. M.; Parnas, R.; Asandei, A. D. Improving compatibilization of wheat gluten, *Polym. Prepr.* **2008**, 49(2), 727.
81. Hemsri, S.; Simpson, C. P.; McGrath, L. M.; Parnas, R.; Asandei, A. D. Effect of mixing procedure on mechanical properties of silica functionalized alumina/wheat gluten blends. *Polym. Mater.: Sci. Eng.* **2008**, 99, 538.

80. Simpson, C.; McGrath, L. M.; Parnas, R.; Asandei, A. D. Mechanical properties of wheat gluten/functionalized silica blends. *Polym. Prepr.* **2008**, *49(1)*, 519.
79. Simpson, C.; McGrath, L. M.; Parnas, R.; Asandei, A. D. Wheat gluten blends with functionalized alumina particles. *Polym. Mater.: Sci. Eng.* **2008**, *98*, 348.
78. Dong, J.; Parnas, R.; Asandei, A. D. Thermal analysis of wheat gluten/poly(vinyl alcohol) and wheat gluten/thiolated poly(vinyl alcohol) blends. *Polym. Prepr.* 2008, *49(1)*, 634.
77. Dong, J.; Parnas, R.; Asandei, A. D. Optimizing the viscosity of wheat gluten aqueous solutions for electrospinning by blending with thiolated additives. *Polym. Mater.: Sci. Eng.* 2008, *98*, 556.
76. R. Zaffou, R. Brooker, R. Kunz, L. Bonville and R. Parnas, Low Cost, Low Weight Bipolar plates for Elevated Temperature PEMFC Operation, Pacific Rim Meeting on Electrochemical and Solid State Science, Joint international meeting, October 16, 2008.
75. R. Brooker, P. Baker, R. Kunz, L. Bonville and R. Parnas, Enhanced PEMFC Cathode Kinetics at 120°C and Low Relative Humidity Using Heteropolyacid Additives, Pacific Rim Meeting on Electrochemical and Solid State Science, Joint international meeting, October 16, 2008.
74. P. Brooker, R.S. Parnas, L. Bonneville and R. Kunz, Enhanced PEMFC Cathode Kinetics at 120°C and Low Relative Humidity Using Heteropolyacid Additives, Electrochemical Society, May 2008 Phoenix, AZ.
73. P. Brooker, R.S. Parnas, L. Bonneville and R. Kunz, Enhanced PEMFC Performance Using Heteropolyacid Additives, Electrochemical Society, May 2008 Phoenix, AZ.
72. M.B. Boucher, S.Y. Li, C. Weed, B. Wilhite, J. Stuart, R. Parnas, Soybean Oil Transesterification Kinetic Study, American Chemical Society 241st National Meeting, August 2007, Boston, MA.
71. Laura M. McGrath, Joseph L. Lenhart, and Richard S. Parnas, Silanated alumina for novel epoxy composites, *Polymer Preprints*.
70. Laura M. McGrath, Joseph L. Lenhart, Richard S. Parnas and Saskia H. King, Investigations of Epoxy Composites Containing Silane Treated Alumina, MRS Boston, MA, Nov 27-Dec 1, 2006, poster FF12.8.
69. J. Dong, R. Dicharry, R.S. Parnas, A.D. Asandei, Aqueous media electrospinning of wheat gluten fibers, *Polym. Mater.: Sci. Eng.* 2006, **95**, 568.
68. L.M. McGrath, G. Saha, R.S. Parnas and A.D. Asandei, Towards Wheat Gluten Blends with Superior Performance: Synthesis of Poly(vinyl thiol) Additives, *Polymer Preprints* *47(2)*, **2006**, 733.
67. Dicharry, R.; Ye, P. Saha G.; Asandei, A. D.; Parnas, R., Morphological And Thermal Studies Of Wheat Gluten/Thiolated Poly(Vinyl Alcohol) Blends. *Polym. Mater.: Sci. Eng.* 2006, **94**, 530-531.
66. Dicharry, R.; Ye, P. Saha G.; Asandei, A. D.; Parnas, R., A Comparison of Thiol-Containing Reactive Modifiers For Wheat Gluten Materials.; *Polym. Prepr.* 2006, **47(1)**, 87-88.
65. McGrath, L. M.; Parnas, R.S.; Lenhart, J. L.; King, S. H., Fracture toughness of alumina-epoxy composites. *Polym. Mat. Sci. Eng.* Preprints 2006, **94**, 683-684.
64. McGrath, L. M.; Lenhart, J. L.; Parnas, R. S., High performance alumina-epoxy composites with enhanced fracture toughness, Abstracts of Papers (113 Polymer Performance and Degradation 1158) Pacifichem 2005, Honolulu, HI, United States, Dec. 15th-Dec. 20th 2005.
63. McGrath, L. M.; Lenhart, J. L., Parnas, R. S.; King, S. H., Understanding Micro-Mechanical Behavior in Epoxy-Alumina Composites to Enhance Fracture Toughness, Abstracts of Posters (AA 7.9) MRS 2005 Fall Meeting, Boston, MA United States, Nov. 27th-Dec 2nd 2005.
62. McGrath, L. M.; Lenhart, J. L.; Parnas, R. S., Al₂O₃-Reinforced Epoxy Composites with Enhanced Fracture Toughness: a SEM, Rheology and Mechanical Study, Abstracts of Papers (Composites-207b), AIChE 2005 Annual Meeting, Cincinnati, OH, United States, Oct. 30th-Nov. 4th, 2005.
61. McGrath, L. M.; Lenhart, J. L.; Parnas, R. S., The Effect of Filler and Diamine Size on the Fracture Toughness of Alumina Reinforced Epoxy Composites. Abstracts of Posters (MESD-142ak), AIChE 2005 Annual Meeting, Cincinnati, OH, United States, Oct. 30th-Nov. 4th, 2005.

60. Q. Liu, R.S. Parnas, M.T. Shaw, A.M. McDonnell, Basalt fiber reinforced polymer composites, SAMPE, Seattle, WA, November 2005.
59. Q. Liu, R.S. Parnas, New set-up for permeability measurement, SAMPE, Seattle, WA, November 2005.
58. P. Ye, C. Horan, A. Asandei and R.S. Parnas, Modification of wheat gluten by SHPVA, SAMPE, Seattle, WA, November 2005.
56. McGrath, L. M.; Lenhart, J. L.; Parnas, R. S., High performance alumina-epoxy composites with enhanced fracture toughness, *PMSE Preprints*, 2005, **93**, 340-341.
55. Patil, Y. P.; Shaw, M. T.; Parnas, R. S., Measuring membrane water and fuel humidity variations in a fuel cell by Fluorescence Spectroscopy, *PMSE Preprints* **2005**, *93*, 591.
54. P. Ye, L. Reitz, C. Horan and R.S. Parnas, Synthesis and biodegradation of plant protein composites, *Polymer Preprints (ACS, Polymer Chemistry)* (2005), *46*(1), 329-330.
53. Q. Liu, M.T. Shaw, R.S. Parnas, A. McDonnell, Preliminary Investigation of Basalt Fiber Composite Properties for Applications in Transportation, Proc. Transportation Research Board Annual Meeting, January, 2005, Washington, DC, paper 05-1117, session 487.
52. P. Ye, D. L. Woerdeman and R. S. Parnas, Synthesis and biodegradation of wheat gluten based materials, 12th Ann. Meeting, BioEnvironmental Polymer Society, Monterrey, Mexico, December, 2004.
51. D. L. Woerdeman, R. S. Parnas, L. McGrath, W. S. Veraverbeke, J. A. Delcour, Designing Wheat Protein Based Commodity Plastics, Polymer Processing Society, Session M-4, June 21, 2004.
50. D. L. Woerdeman, P. Ye, R. S. Parnas, W. S. Veraverbeke, S. Shenoy, Wheat Gluten-Based Plastics & Electrospun Fibrous Mats, Fall ACS Meeting, Philadelphia, PA, Aug. 25, 2004.
49. Y. P. Patil, T. A. P. Seery, M. T. Shaw and R. S. Parnas, In-situ pH measurement in a Nafion® based Polymer electrolyte fuel cell by fluorescence spectroscopy, *ACS Fuel Chemistry Preprints*, *49*(2), 683, 2004.
48. Q. Liu and R. Parnas, New Set-up for Permeability Measurement, 7th Int. Conf. on Flow Processes in Composite Materials, Newark, DE, July 2004.
47. R.S. Parnas, Q. Liu and S. Walsh, Void Formation During Infusion Molding, SAMPE, Long Beach, CA, May 17, 2004.
46. Y. Patil, M. Jordi, K. McBrearity, T. Seery and R. Parnas, In-Situ Measurement of PEM Water Content via Fluorescence Spectroscopy, 1st Int. Conf. on Fuel Cell Development and Deployment, Univ. of CT, March 2004, **2nd Prize Poster**.
45. D. L. Woerdeman, W. S. Veraverbeke, R. S. Parnas, J. Lee, J. A. Delcour, I. Verpoest, Optimizing the Interactions between a HMW Protein and a Tri-Thiol Modifying Agent, 11th Ann. Meeting, BioEnvironmental Polymer Society, Denver, CO, August 10-13, 2003.
44. R.S. Parnas, J.P. Dunkers, D.P. Sanders, D.L. Hunston, M.J. Everett, W.H. Green, Comparison of Optical Coherence Tomography, X-Ray Computed Tomography, and Confocal Microscopy Results from an Impact Damaged Epoxy/E-Glass Composite, ASNT 12th Annual Research Symp., Orlando, FL, March 12-14, 2003.
43. R.S. Parnas, M. Wevers, I. Verpoest, Using Topological Rule Based Algorithms to Analyze X-Ray CT Data of Composite Microstructure, ASNT 12th Annual Research Symp., Orlando, FL, March 12-14, 2003.
42. Sophomore Design by Mixing a bit of Felder & Rousseau with a bit of Smith & van Ness, ASEE Summer School for Chemical Engineering Faculty, Boulder, CO, July 28, 2002, poster.
41. E.B. Belov, S.V. Lomov, I. Verpoest, T. Peters, D. Roose, K. Hoes, H. Sol and R.S. Parnas, Modelling of permeability of textile reinforcements: Lattice Boltzmann method, Proc. ECCM-10, Brugge, Belgium, June 2002.
40. K. Hoes, D. Dinescu, M. Vanheule, H. Sol, R.S. Parnas, E. Belov and S. Lomov, Statistical distribution of permeability values of different porous materials, Proc. ECCM-10, Brugge, Belgium, June 2002.

39. S. Lomov, R.S. Parnas, P.M. Russell, J. Summerscales, The fractal dimensions of tomographic sections of a woven composite, 6th Int. Conf. on Microscopy of Composite Materials, St John's College – Oxford, 25-26 March 2002.
38. I. Verpoest, G. Huysmans, Y. Luo, R.S. Parnas, A. Prodromou and S.V. Lomov, An integrated modeling strategy for processing and properties of textile composites, Proc. 46th International SAMPE symposium and exhibition, Long Beach, California, USA, May 6–10, 2001, pp. 2472-2483.
37. K. Hoes, H. Sol, D. Dinescu, Y. Luo, I. Verpoest and R.S. Parnas, New sensor-based set-up for permeability identification (ID# 111), Proc. 3rd Canadian Int. Composites Conference, August, 2001, Montreal, Canada.
36. R.S. Parnas, M. Wevers, I. Verpoest, Using Textile Topography to Analyze X-Ray CT Data of Composite Microstructure, Proc. Int. Mechanical Engineering Congress and Exposition, November 11-16, 2001, New York.
35. J.L. Lenhart, J.P. Dunkers, J.H. vanZanten, D.L. Woerdeman, and R.S. Parnas, Localizing a Fluorescent Dye to Probe the Buried Interfacial Chemistry, Proc. 24th Ann. Meeting of the Adhesion Society, Feb. 2001.
34. R.S. Parnas, Quality Control Starts at the Interface and Continues Through Flow During Processing, Proceedings ACUN-3, Feb. 2001, Sydney, Australia.
33. R.S. Parnas, Characterisation of the fiber/resin interface by fluorescence spectroscopy, Proc. 5th International Conference on Textile Composites (TexComp-5), 18 – 20 September, 2000, Leuven, Belgium.
32. R.S. Parnas, Statistical quality control applied to mold design for liquid molding, Proc. 5th International Conference on Textile Composites (TexComp-5), 18 – 20 September, 2000, Leuven, Belgium.
31. S.R.M. Kueh, J.P. Dunkers, S.G. Advani, R.S. Parnas, P.S. Furrows, M.E. Jones, and T.A. Bailey, Long Period Gratings as Flow Sensors for Liquid Composite Molding, SPIE: 5th International Symposium on Nondestructive and Health Monitoring of Aging of Infrastructure, Vol. 3993, 2000, p240-250.
30. W.G. McDonough, J.P. Dunkers and R.S. Parnas, Micro-Mechanical Test Techniques and Optical Coherence Tomography for Characterizing Tissue Scaffolds", Advances in Orthopaedic Tissue Engineering workshop at the Capital Hilton, Washington, D.C. January, 2000, poster.
29. J.L. Lenhart, J. Van Zanten, S. Pollack, C. James, J.P. Dunkers and R.S. Parnas, Interphase Sensitive Fiber-Optic Sensor to Monitor Resin Cure, Gordon Research Conference on Composites, Jan.2000, Poster.
28. W.G. McDonough, J.P. Dunkers, G.A. Holmes and R.S. Parnas, The Effect of Processing on Interfacial Shear Properties of Composite Materials, Proc. 23rd Ann. Meeting of the Adhesion Society, Feb. 2000.
27. Phelan Jr., F. R.; Dunkers, J. P.; Zimba, C. G.; Flynn, K. M.; Parnas, R. S.; Peterson, R. C.; Li, X.; and Fujimoto, J. G., Numerical Prediction of Permeability Using A Lattice Boltzmann Method and Optical Coherence Tomography, Proc. 6th Int. Conf. on Automated Composites (ICAC99), p. 15, 1999. **Best Paper of Conference.**
26. A Minimalist Sensor System for Mold Filling, Proc. ICCM-12, Paris, France, July 1999.
25. R.S. Parnas, D.L. Hunston, J.P. Dunkers, G.A. Holmes, Microstructural Characterization for Polymer Composites, Proc. Int. SAMPE Symp. Exhib, **44**, 748-59, 1999.
24. Optical Fiber Monitoring of Fast Systems, AIChE Annual Meeting, Los Angeles, CA, November 17, 1997.
23. D.Sourlas, S. Naha, G. Patterson and R. Parnas, On-Line Control of Liquid Composite Molding, ISA Conference, Miami, FL, June 1997.
22. Fiber Optic Sensors for Monitoring the Liquid Composite Molding Process, Spring Conference of the American Society of Nondestructive Testing, Norfolk, VA, March 1996.
21. R. Neff, J. Dunkers and R. Parnas, Real-Time Monitoring of Liquid Molding by Optical Fiber Evanescent Wave Techniques, AIChE Annual Meeting, Chicago, IL, November, 1996.
20. Hydrodynamically Induced Preform Deformation During High Speed Processing, International Conference on Automated Composites, Nottingham, England, Sept.6, 1995.
19. Cure Monitoring with an Evanescent Wave Fluorescence Sensor, Society of Plastics Engineers ANTEC'95 meeting, Boston, MA, May, 1995. **Best Paper award.**

18. M. Myrick, J. Aust, K. Booksh, C. Stellman and R. Parnas, In-Situ Fiber-Optic Probes and the Applied Spectroscopy of Polymer Cure Monitoring, AIChE Annual Meeting, Miami Beach, FL, November, 1995.
17. A Proposed Standard Reference Material for Permeability, AIChE Annual Meeting, San Francisco, CA, November, 1994.
16. D.L. Woerdeman, J.P. Dunkers & R.S. Parnas, An Evanescent Wave Fluorescence Sensor for Cure Monitoring and Process Control, ACCE Meeting, Detroit, MI, 1994.
15. S. Manoochehri, G. Mychajluk & R.S. Parnas, Model Based Process Control of the Liquid Molding Process, ACCE Meeting, Detroit, MI, 1994.
14. The Development of a Standard Reference Material for Permeability, AIChE Summer Meeting, Seattle, WA, 1993.
13. D.L. Woerdeman & R.S. Parnas, Interpretation of Permeability Measurements in Three-Dimensions, AIChE Summer Meeting, Seattle, WA, 1993.
12. The Effect of Heterogeneous Porous Media on Mold Filling in Resin Transfer Molding, Proc. 36th Ann. SAMPE meeting, San Diego, CA, 36, 506, 1991.
11. The Unidirectional and Radial In-Plane Flow of Fluids Through Woven Composite Reinforcements, 63rd Ann. meeting of the Soc. Rheol., Rochester, NY, October, 1991.
10. Void Formation in the Tows of Resin Transfer Molding Preforms During Mold Filling, AIChE Annual Meeting, Los Angeles, CA, 1991.
9. A Consistent Calculation of the Effective Hydrodynamic Thickness of a Terminally Anchored Bead Rod Chain in Shear Flow, AIChE Annual Meeting, Los Angeles, CA, 1991.
8. Statistical and Dynamical Properties of a Freely-Jointed Bead-Rod Model Chain, ACS Polymer Preprints, 31(2), 515, 1990.
7. The Effect of Hydrodynamic Interactions on a Terminally Anchored Bead-Rod Model Chain, Proc. Symposium M, MRS Fall Meeting, November 26, 1990.
6. Brownian Dynamics of Terminally Anchored Freely-Jointed Chains, ACS Polymer Preprints, 30(9), 385, 1989.
5. Brownian Dynamics of Terminally Anchored Chains, ACS Polymer Division Workshop on Polymer Surfaces and Interfaces, Asilomar, CA, September, 1988.
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