

CURRICULUM VITAE OF DAVID O. KAZMER, P.E., PH.D.

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Principal Areas of Technology Leadership:

Plastics Product Design and Manufacturing
Manufacturing Process Development
Design for Manufacturing
Machine Design
Robust Design

Functional Areas of Expertise:

Plastic product design and process development, specifically with injection molding, extrusion, blow molding, and thermoforming.

Mechanical design including concept design, concept selection, materials selection, layout design, stress analysis, heat transfer, detailed design, assembly synthesis, fits and tolerances, performance testing, failure analysis;

Design for manufacturing including needs analysis, specification, process selection, cost and value analysis, robust design, quality function deployment, design of experiments, response surface analysis, failure modes and effects analysis, and design for X (machining, molding, assembly, etc.);

Simulation including constitutive modeling of materials, phenomenological modeling, development and solution of differential equations using finite difference and finite element methods, meshing, programming (C, C++, Pascal, BASIC, Fortran, Java, and other languages), numerical stability analysis, sensitivity analysis, stochastic and Monte Carlo methods, and interfacing;

Manufacturing process development including system decomposition, axiomatic systems design, subsystems analysis, process instrumentation, signal conditioning, data acquisition, systems integration, control systems design, development and tuning of control laws, validation, commissioning, deployment, and training;

Operations Management including manufacturing strategy, forecasting, aggregate planning, inventory control, supply chain management, production control systems,

operations scheduling, project scheduling, facilities design, quality and assurance, reliability and maintenance

A. EDUCATION AND ACADEMIC QUALIFICATIONS

1. Education (specify degree institutions, dates, honors, major fields of study, etc.)

- Ph.D., 1995, Stanford University, Mechanical Engineering Design Division. Dissertation: Dynamic Feed Control for Injection Molding. Committee: P. Barkan (Chair), W. Hausman, K. Ishii, F. Prinz.
- 1991 M. Sci., Rensselaer Polytechnic Institute, Department of Mechanical Engineering, Thesis: Development and Validation of a Radial Flow Analysis Tool. Advisor: D. Lee.
- 1989 B. Sci., Cornell University, Sibley School of Mechanical Engineering, with Distinction.

2. Experience (length of time at each institution, rank(s) held, etc.)

- January, 2002 – present: Associate Professor, Univ. Mass. Lowell, Department of Plastics Engineering (promotion to Full Professor in progress, expected promotion in June, 2005)
- 2001, Director of Research & Development, Synventive Molding Solutions (Peabody, Massachusetts)
Responsible for invention, implementation, and support of advanced melt delivery systems for the molding industry, including: 1) Dynamic Feed Control for multi-gate closed loop pressure control, 2) hot runner molding of molten magnesium, and 3) the first all-electric melt delivery system. Responsibilities include engineering design, management and budgeting responsibilities, market development, and sustaining engineering.
- June, 2000 – June, 2001: Associate Professor, Univ. Mass. Amherst, Department of Mechanical and Industrial Engineering
- September, 1995 – May, 2000: Assistant Professor, Univ. Mass. Amherst, Department of Mechanical and Industrial Engineering
- 1992-1994, Technology Programs Manager, GE Plastics Commercial Development Center (Pleasanton, California)
Developed design methodologies and manufacturing technologies to position GE Plastics as a value added supplier. Translated relevant technology to regional development centers for commercial application. Provided design and processing support on critical applications.
- 1991, Design and Process Development Engineer, GE Plastics Advanced Design Engineering Group (Pittsfield, Massachusetts)

Developed design methodologies and manufacturing technologies to position GE Plastics as a value added supplier. Translated relevant technology to regional development centers for commercial application.

- 1990, Mechanical Engineer, GE Corporate Research & Development Mechanics of Materials Laboratory (Schenectady, New York)
Investigated industrial plastic conversion processes. Developed process simulations which became part of GE Plastics' design methodology. Examined material characterization techniques to estimate molded product consistency.
- 1988-1989, Applications Engineer, GE Plastics Advanced Design Engineering Group (Pittsfield, Massachusetts)
Performed process simulations to ensure product manufacturability as well as structural analyses to predict and optimize part performance.

B. PROFESSIONAL ACTIVITIES

1. Professional Association Participation (state nature of participation: paper read, panel discussant, office holder, etc.)

- Member, American Society of Mechanical Engineers (ASME)
- Member, Society of Plastics Engineers
- Member, Polymer Processing Society
- Member, Institute of Electrical and Electronics Engineers
- Member, American Society for Engineering Education
- Registered Professional Manufacturing Engineer, State of California, License # MF004751
- Specific service to these organizations is provided in Section 1.E.

2. Professional Honors and Awards

- 2004, Best Paper Award, 10th ASME Design for Manufacturing Conference

- 2000, University of Massachusetts Amherst, College of Engineering Outstanding Young Faculty Award
- 1999, Lilly University Teaching Fellowship
- 1998, Office of Naval Research Young Investigator Award
- 1998, Best Paper Award, Society of Plastics Engineers' Design Division
- 1997, National Science Foundation Career Award
- 1996, 1997, and 2000, College of Engineering Outstanding Advisor Service Award
- 1995, Future Professor of Manufacturing, Stanford Integrated Manufacturing Association
- 1994, Innovative Industrial Process Award, U.S. Department of Energy
- 1993, Best of Program, Lincoln Electric National Design Competition
- 1992, Management award for outstanding achievements, General Electric Company
- 1989, Management award for outstanding contributions, General Electric Company

C. RESEARCH

Grants & Contracts

- National Science Foundation, High Rate Nano-Manufacturing (with J. Mead and C. Barry of UML), Status: funded 2004-.
- National Science Foundation, Sensors: Self-Powered Spatial Sensing Array for Injection Molding Process Monitoring (with R. Gao of UMass Amherst), UML Budget: \$218,364, Status: funded 2004-07.
- Mold-Masters Ltd., Technical Feasibility of a Self-Regulating Melt Valve, UML Budget: \$40,000 plus \$20,000 in kind, Status: funded 2004.
- National Science Foundation, Synthesis of Melt Pumps & Brakes for Polymer Processing, UML Budget: \$213,508, Status: funded 2003-06.
- National Science Foundation, Input Profiling for Plastic Molding and Forming Processes (with K. Danai of UMass Amherst), UML Budget: \$78,500, Status: not funded 2004.

- Mold Masters Ltd., Technical Feasibility of Decoupled Gating, UML Budget: \$40,000 plus \$120,000 in kind, Status: funded 2003.
- National Science Foundation, Model-Based Set-Point Profiling for Plastics Molding, (with K. Danai of UMass Amherst), UML Budget: \$73,000, Status: not funded 2003.
- National Science Foundation, Plastics Partnerships for Innovation, (with S. McCarthy), UML Budget: \$600,000, Status: not funded 2002.
- National Science Foundation, Information System Proposal: Solution of Robust & Confident Process Windows, UML Budget: \$337,561, Status: not funded 2002.
- Thermo-CeramiX LLC, Technical Feasibility of Isothermal Molding, UML Budget: \$15,000 plus \$20,000 in kind, Status: funded 2002.
- National Science Foundation, Remote Sensors for Injection Molding (with R. Gao), Budget: \$310,000, Status: funded 1999-2002.
- GE Plastics, Design for Six Sigma: Phase III, (with T. Blake), Budget: \$35,000, Status: funded 1999.
- Office of Naval Research, Dynamic Cooling for Injection Molding, Budget: \$298,000, Status: funded 1998-2001.
- GE Plastics, Optical Molding Process Development (w. K. Danai), Budget: \$42,000, Status: funded 1998.
- National Science Foundation, Remote Sensors for Injection Molding (with R. Gao), Budget: \$275,000, Status: not funded 1998.
- AlliedSignal Plastics, Advanced Design Methods for Injection Molded Parts: Phase I (with B. Kim) Budget: \$35,000, Status: not funded 1998.
- GM Delphi, Virtual Search Method for Automotive Applications (with K. Danai), Budget: \$40,000, Status: not funded 1999.
- GE Plastics, Tight Tolerance Thermoforming Extension, Budget: \$25,000 with \$10,000 in-kind, Status: funded 1999.
- GE Plastics, Design for Six Sigma: Phase II (with T. Blake), Budget: \$35,000, Status: funded 1998.
- Industry Consortium (AMP, Ford, Gillette), Quality Control Methods for Injection Molding (with K. Danai), Budget: \$180,000, Status: not funded 1998.
- National Science Foundation Graduate Engineering Reform, Professional Engineering Education (with J. Rinderle, D. Fisher, and C. Poli), Budget: \$800,000, Status: not funded 1996.
- GE Plastics, Tight Tolerance Thermoforming, Budget: \$35,000 with \$10,000 in-kind, Status: funded 1997.
- Sloan Foundation, Integrated Manufacturing Paradigms, Budget: \$35,000, Status: funded 1997.

- Industry Consortium (AlliedSignal, BIC, Polaroid, Pitney Bowes), Molded Product Design, (with J. Rinderle), Budget: \$500,000, Status: not funded.
- National Science Foundation, Modeling Paradigm for Acquisition, Representation, and Explanation of Expertise (with K. Danai, M. Tsapatsis, and P. Utgoff), Budget: \$340,000, Status: not funded 1997.
- Packard Foundation, Intelligent Processing of Polymeric Materials, Budget: \$500,000, Status: not funded 1997.
- GE Plastics, Design for Six Sigma: Phase I, Budget: \$35,000, Status: funded 1996.
- National Institute of Standard and Technology, Injection Molding Quality (with G. Trantina and A. Poslinski), Budget: \$4,000,000 (\$250,000 Amherst), Status: not funded 1996.
- National Science Foundation, Process Tuning and Optimization (with K. Danai), Budget: \$198,000, Status: funded 1996-1999.
- National Science Foundation, CAREER: Synthesis of Engineering Analysis Methods into the Design Process, Budget: \$310,000, Status: funded 1996-1999.
- GE Plastics, Electro Magnetic Shielding Review, Budget: \$35,000, Status: not funded 1996.
- CUMIRP (Poly. Sci. research initiation project), Electro Magnetic Shielding Review, Budget: \$12,000, Status: not funded 1995.
- Univ. Mass. Amherst (research initiation project), Cost of Complexity in Product Design and Manufacture, Budget: \$5,000, Status: funded 1995.
- National Science Foundation, Cost of Complexity, Budget: \$300,000, Status: not funded 1995.
- National Science Foundation, Virtual Search Method (with K. Danai), Budget: \$178,000, Status: not funded 1995.
- Industry Consortium (GE Plastics, Hewlett Packard, Dynisco Instruments), Moldability Program, Budget: \$25,000 with \$250,000 in kind, Status: funded 1994-95.
- U.S. Dept. of Energy, Innovative Industrial Processes, Budget: \$40,000, Status: funded 1994.

Graduate Student Advising

- Stephen Johnston, D. Eng., Plastics Engineering, 2007, “Remote process sensing of the injection molding process.”
- Peter Knepper, M.S.E., Plastics Engineering, 2006, “Quality estimators for injection molding.”
- Ruchi Karania, M.S.E., Plastics Engineering, 2005, “Analysis of lower volume plastics manufacturing processes.”

- Mark Doyle, M.S.E., Plastics Engineering, 2005 , “Survey of commercial hot runner systems.”
- Michael Johnes, M.S.E., Plastics Engineering, 2005, “Macro molding of micro parts.”
- William Rouseau, M.S.E., Plastics Engineering, 2005, “Analysis and validation of color changes in hot runner molding.”
- Kathryn Garnavish, M.S.E., Plastics Engineering, 2005, “Analysis of hesitation effects in oscillating polymer flows.”
- Stephen Johnston, M.S.E., Plastics Engineering, 2005, “Real time simulation of decoupled molding.”
- Ranjan Nageri, M.S.E., Plastics Engineering, 2005, “Real time simulation of the injection molding process.”
- Greg Rathbone, M.S.E., Plastics Engineering, 2005, “Validation of thermal wave production of optical media.”
- Vijay Kudchakar, M.S.E., Plastics Engineering, 2005, “Validation of a self-regulating melt pressure valve.”
- Rahul Pulchari, M.S.E., Plastics Engineering, 2005, “Characterization of a polymer lubricated hydrodynamic bearing.”
- Charles Theurer, Ph.D., Mechanical Engineering (Amherst), 2004, “Extraction and digitization of a process signal for self-powering a wireless pressure sensor.”
- Mahesh Munavalli, M.S.E., Plastics Engineering, 2004, “Design and analysis of a self-regulating melt pressure valve.”
- Hitesh Mundhra, M.S.E., Plastics Engineering, 2004, “Development and validation of process windows.”
- Dheeraj Gupta, M.S.E., Plastics Engineering, 2004, “Design and validation of low force melt valves in polymer processing.”
- Akash Kamoolkar, M.S.E., Mechanical Engineering (Amherst), 2004, “Optimization of ejector systems for injection molded parts using genetic algorithms.”
- Brendan Cahill, M.S.E., Plastics Engineering, 2003, co-chair with R. Malloy, “Design for in-mold labeling.”
- Nirmal Doshi, M.S.E., Plastics Engineering, 2003, “Design of a platenless injection molding machine.”
- Kaushik Manek, M.S.E., Plastics Engineering, 2003, “Analysis of yield prediction models in plastics manufacturing.”
- Gautam Balasubrahmanyam, M.S.E., Plastics Engineering, 2003, “The stability of plastic melt flows at low temperatures and flow rates”
- Yash Dave, M.S.E., Plastics Engineering, 2003, “Concept validation of a melt brake for extrusion”

- Binfeng Fan, Ph.D., Mechanical Engineering (Amherst), 2002, “Quality simulation and optimization of optical media produced via injection-compression molding.”
- Deepak Kapoor, M.S.E., Manufacturing Engineering, 1997, “Multi-cavity melt control in injection molding.”
- Tatiana Petrova, M.S.E., Mechanical Engineering, 1997, “Hybrid neural network models for prediction of molded part quality.”
- Sally Carter, BS, Mechanical Engineering, 1998, “Structural design of bosses for molded plastic parts.”
- Adekunle Fagade, Ph.D., Industrial Engineering, 1999, “The role of complexity in product life-cycle cost.”
- David Hatch, M.S.E., Mechanical Engineering, 1999, “Modeling and optimization for processing of optical media.”
- Haoyu Xu, M.S.E., Mechanical Engineering, 1999, “Cooling considerations for injection molding.”
- Haihong Xu, M.S.E., Mechanical Engineering, 1999, “Shrinkage prediction of thermoformed parts.”
- Christoph Roser, Ph.D., Mechanical Engineering, 2000, “A flexible design methodology.”
- Prasanth Ambady, M.S.E., Mechanical Engineering, 2001, “Adaptive control of the injection mold cooling process.”
- Ian Stuart, M.S.E., Mechanical Engineering, 2001, “Production quality improvements in plastics processing.”
- Liang Zhu, Ph.D., Mechanical Engineering, 2001, “An Extensive Simplex Method for global feasibility evaluation in systems design.”
- Charles Theurer, M.S.E., Mechanical Engineering, 2001, “Conceptual design of a remotely energized pressure sensor.”

2. Academic and Professional Publications (Citations must include full and exact references; reprints of publications must be available for submission and must be submitted when requested. Use back of this page if additional space is needed.)

Books and Book Chapters

1. Kazmer, D.O., “Injection Molding,” Encyclopedia of Chemical Processing, Marcel Dekker, Sunggyu (K.B.) Lee, Ed., 2005.
2. Kazmer, D.O., “Precision Process Control,” Precision Injection Molding, Hanser Publishers, R.W. Friedl, J. Greener, Ed., 2005.
3. Kazmer, D.O., “Computer Flow Simulations,” Society of Plastics Engineers’ Molding Toolbox, 2002.

4. Roser, C. and D. O. Kazmer, "Defect Cost Analysis," *Plastics Failure Analysis and Prevention*, J. Moalli Ed. , 2001.
5. Kazmer, D.O. and K. Danai, "Control of Polymer Processing," in *The Control Handbook*, edited by W. S. Levine, published by CRC & IEEE Press, 2001.
6. Kazmer, D. O., "Dynamic Feed Control for Injection Molding," Ph.D. Dissertation, Mechanical Engineering Design Division, Stanford University, 1995.
7. Kazmer, D. O., "Development and Validation of a Radial Flow Analysis Tool", M.S.E. Thesis, Department of Mechanical Engineering, Rensselaer Polytechnic Institute, 1991.

Reviewed Articles

8. D. O. Kazmer, R. Nageri, V. Kudchakar, B. Fan., R. X. Gao, "Validation of Three On-Line Flow Simulations for Injection Molding," Submitted to *Polymer Engineering and Science*.
9. S. Johnston and D. Kazmer, "Decoupled Gating and Simulation for Injection Molding," Submitted to *International Polymer Processing*.
10. R. Karania and D. Kazmer, "Low Volume Plastics Manufacturing Strategies," Submitted to *ASME Journal of Mechanical Design*.
11. Y. Cui, R. X. Gao, and D. O. Kazmer, "A Bond Graph Approach to Energy Efficiency Analysis of a Self-Powered Wireless Pressure Sensor," Submitted to *Journal of Smart Structures and Systems*.
12. Kazmer, D., and B. Fan, "Polymer Flow in a Melt Pressure Regulator," Submitted to the *ASME Journal of Manufacturing Science*.
13. B. Fan, D. Kazmer, and R. Nageri, "An Analytical Non-Newtonian and Non-Isothermal Viscous Flow Simulation," Submitted to *Polymer Plastics Technology and Engineering*.
14. S. Dong, C. E, B. Fan, K Danai, and D. O. Kazmer, "Process-Driven Input Profiling for Plastics Processing," Submitted to the *ASME Journal of Manufacturing Science*.
15. L. Zhang, C. Theurer, R. X. Gao, and D. O. Kazmer, "Ultrasonic Pulses Detection and Differentiation using Analytic Wavelet for Injection Mold Cavity Pressure Measurement," Submitted to the *ASME Journal of Manufacturing Science*.
16. D. O. Kazmer and D. Gupta, "A Low Force Melt Valve for Dynamic Control of Molten Plastics," Submitted to *International Polymer Processing*.

17. L. Zhang, C. Theurer, R. X. Gao, and D. O. Kazmer, "Design Of Ultrasonic Transmitters With Defined Frequency Characteristics For Wireless Pressure Sensing In Injection Molding," Submitted to the Journal of Acoustics.
18. D. Kazmer and L. Zhu, "A Quality Modeling System," Submitted to the Journal of Quality Technology.
19. D. Kazmer , D. Gupta, M. Munavalli, V. Kudchakar, and R. Nageri, "Design and Performance Analysis of a Self-Regulating Melt Pressure Valve," Accepted to Polymer Engineering and Science.
20. D. Kazmer, V. Kudchakar, and R. Nageri, "Validation of Molding Consistency with a Self-Regulating Melt Pressure Valve," Accepted to Journal of Plastics, Rubber, and Composites Processing.
21. D. Kazmer, V. Kudchakar, and R. Nageri, "Validation of Molding Productivity with Analysis of Two Self-Regulating Melt Pressure Valves," Accepted to Journal of Plastics, Rubber, and Composites Processing.
22. Kazmer, D., Lotti, C., Breta, R. E. S., Zhu, L., "Tuning and Control of Dimensional Consistency in Molded Products," Advances in Polymer Technology, v. 23, n. 3, Fall, 2004, p. 163-175.
23. C.B. Theurer, L. Zhang, D.O. Kazmer, and R.X. Gao, "Energy Extraction for a Self-Energized Pressure Sensor" IEEE Sensors Journal, v. 4, n. 1, p. 28-35, 2004.
24. B. Fan, D. O. Kazmer, W.C. Bushko, R. P. Thierault, A. J. Poslinski, "Birefringence Prediction of Optical Media," Polymer Engineering & Science, v. 44, n. 4, April, 2004, p. 814-824.
25. Zhang, L., Theurer, C., Gao, R., and D. O. Kazmer, "A Self-Energized Sensor for Wireless Injection Mold Cavity Pressure Measurement: Design and Evaluation," ASME Journal of Dynamic Systems (DSC), v. 72, n. 2, 2003, p. 1167-1173.
26. L. Zhang, C. Theurer, R. Gao, and D. Kazmer, "Frequency Design of an Ultrasonic Transmitter for Injection Molding Pressure Measurement", Transactions of the North American Manufacturing Research Institution of SME, Vol. XXXI, p., 579-586, 2003.
27. B. Fan and D. O. Kazmer, "Warpage Prediction of Optical Media," Journal of Polymer Science: Part B Polymer Physics, v. 41, p. 859-872, 2003.
28. L. Zhu and D. O. Kazmer, "An Extended Simplex Method for Global Feasibility Evaluation," Journal of Engineering Optimization, v. 35, n. 2, p. 165-176, 2003.
29. B. Fan and D. O. Kazmer, "Simulation of Injection-Compression Molding of Optical Media," Polymer Engineering & Science, v. 43, n. 3, p. 596-606, 2003.

30. L. Zhang, C. B. Theurer, R. X. Gao, and D. O. Kazmer, "Development of A Wireless Pressure Sensor With Remote Acoustic Transmission," *Journal of the North American Manufacturing Research Institute*, Vol. XXX, p. 573-580, 2002.
31. D. Kazmer, D. Kapoor, C. Roser, L. Zhu, and D. Hatch, "Definition and Application of A Process Flexibility Index," *ASME Journal of Manufacturing Science*, v. 125, p. 164-172, 2003.
32. C. Roser, D. Kazmer, and J. Rinderle, "An Economic Design Change Method," *ASME Journal of Mechanical Design*, v. 125, n. 2, p. 233-239, 2003.
33. Zhu, L. and D. Kazmer, "A Performance-Based Representation for Engineering Design," *ASME Journal of Mechanical Design*, v. 123, n. 4, p. 486-493, 2001.
34. Yang, D., K. Danai, and D. Kazmer, "A Knowledge-Based Tuning Method for Injection Molding Machines," *ASME J. Manufacturing Science and Engineering*, 2001. 123(4): p. 682-691.
35. Kazmer, D., L. Zhu, and D. Hatch, "Process Window Derivation With an Application to Optical Media Manufacturing," *ASME Journal of Manufacturing Science*, v. 123, p. 303-314, 2001.
36. H. Xu and D. Kazmer, "Thermoforming Shrinkage Prediction," *Journal of Polymer Engineering and Science*, v. 41, n. 9, 2001.
37. D. Hatch and D. Kazmer "Process Transfer Function Development For Optical Media Manufacturing," *International Journal of Advanced Manufacturing Technology*, v. 18, n. 4, 2001.
38. H. Xu and D. Kazmer, "Tight Tolerance Thermoforming," *International Polymer Processing*, v. 16, n. 2, p. 208-215, 2001.
39. J. Reilly, M. Doyle, and D. O. Kazmer, "An Assessment of Dynamic Feed Control in Modular Tooling," *Journal of Injection Molding Technology*, September, 2001, 5 (1), p. 52-61.
40. D. Kazmer and D. Hatch, "Towards Controllability of Injection Molding," *Journal of Materials Processing and Manufacturing Science*, October, 2000, 9 (2), p. 94-99.
41. A. Fagade and D. O. Kazmer, "Early Cost Estimation for Injection Molded Parts," *Journal of Injection Molding Technology*, September, 2000, 4 (3), p. 97-106.
42. H. Xu, J. Wysocki, D. Kazmer, P. Bristow, B. Landa, J. Riello, C. Messina, and R. Marrey, "Shrinkage Estimation for Thermoformed Parts," *Thermoforming Quarterly*, March, 2000, p. 8-14.

43. Xu, H. and D. O. Kazmer, "Productivity Evaluation with a Stiffness-Based Ejection Criterion of Injection Molding," *Journal of Injection Molding Technology*, 1999, 3 (4), p. 211-218.
44. Kazmer, D.O. and C. Roser, "Evaluation of Product and Process Design Robustness," *Research in Engineering Design*, 1999. 11 (1), p. 21-30.
45. Xu, H. and D. O. Kazmer, "A Stiffness-Based Criterion for Ejection of Injection Molded Parts," *International Journal of Polymer Processing*, 1999. 14 (1), p. 52-60.
46. Petrova, T. and D.O. Kazmer, "Incorporation of Phenomenological Models in a Hybrid Network for Quality Control of Injection Molding," *Polymer-Plastics Technology and Engineering*, 1999. 38 (1), p. 1-18.
47. Petrova, T. and D.O. Kazmer, "Hybrid Neural Networks for Pressure Control of Injection Molding," *Advances in Polymer Technology*, 1999. 18 (1), p. 19-31.
48. Kapoor, D. and D. O. Kazmer, "Consistency and Flexibility of Multi Cavity Melt Control Injection Molding in a Commercial Application," *International Journal of Polymer Processing*, 1998. 13 (4), p. 398-405.
49. Kazmer, D.O. and D.S. Roe, "Exploiting Melt Compressibility to Achieve Improves Weld Line Strengths," *International Journal of Plastics, Rubber and Composites Processing*, 1998. 27 (6), p. 272-278.
50. Ivester, R., Danai, K. and D. O. Kazmer, "Virtual Search Method for Injection Molding," *Journal of Injection Molding Technology*, 1998, 2 (3), p. 165-172.
51. Kazmer, D.O. and P. Barkan, "Multi-Cavity Pressure Control in the Filling and Packing Stages of the Injection Molding Process," *Polymer Engineering and Science*, 1997. 37(11): p. 1865-1879.
52. Kazmer, D.O. and P. Barkan, "The Process Capability of Multi-Cavity Pressure Control of the Injection Molding Process," *Polymer Engineering and Science*, 1997. 37(11): p. 1880-1897.
53. Kazmer, D.O. and R.G. Speight, "Polymer Injection Molding Technology for the Next Millenium," *Journal of Injection Molding Technology*, 1997. 1(2): p. 81-90.
54. Kazmer, D.O., "Best Practices for Injection Molding," *Journal of Injection Molding Technology*, 1997. 1(1): p. 10-17.
55. Kazmer, D.O., J. Rowland, and G. Sherbelis, "The Foundations of Intelligent Process Control," *Journal of Injection Molding Technology*, 1997. 1(1): p. 44-56.

56. Taylor, C.A., H.G. DeLorenzi, and D.O. Kazmer, "Experimental and Numerical Investigations of the Thermoforming Process," *Polymer Engineering and Science*, 1992. 32(16): p. 1163-1173.

Conference Papers Published

57. R. Karania and D. Kazmer, "Low Volume Plastics Manufacturing Strategies," Submitted to Design for Manufacturing Symposium at the 2005 ASME International Mechanical Engineering Congress and Exposition..
58. D. Kazmer, "Domain-Centric Design Education," ASME IDETC 10th Design for Manufacturing Conference, 2005.
59. David O. Kazmer, Ranjan Nageri, Bingfeng Fan, Vijay Kudchadkar, Stephen Johnston, "Validation of On-Line Molding Process Simulation," Proceedings of the 2005 Society of Plastics Engineers Annual Technical Conference, 2005.
60. David O. Kazmer, "Wall Thickness Optimization In Molded Product Design," Proceedings of the 2005 Society of Plastics Engineers Annual Technical Conference, 2005.
61. David O. Kazmer, Kathryn Garnavish, & Ranjan Nageri, "An Investigation into Hesitation Effects in Oscillating Flows," Proceedings of the 2005 Society of Plastics Engineers Annual Technical Conference, 2005.
62. David O. Kazmer and Mahesh Munavallia, "Design and Performance Analysis Of A Self-Regulating Melt Pressure Valve," Proceedings of the 2005 Society of Plastics Engineers Annual Technical Conference, 2005.
63. David O. Kazmer, Vijay Kudchadkar, and Ranjan Nageri, "Performance of a Self-Regulating Melt Pressure Valve," Proceedings of the 2005 Society of Plastics Engineers Annual Technical Conference, 2005.
64. David O. Kazmer and Hitesh Mundhra, "Derivation of Process Windows," Proceedings of the 2005 Society of Plastics Engineers Annual Technical Conference, 2005.
65. David O. Kazmer, Peter Knepper, and Stephen Johnston, "A Review of In-Mold Pressure and Temperature Instrumentation," Proceedings of the 2005 Society of Plastics Engineers Annual Technical Conference, 2005.
66. David O. Kazmer, Robert Gao, Yong Cui, Stephen Johnston, and Peter Knepper, "Concept Design of a Wireless Pressure, Temperature, and Flow Rate Sensor for Injection Molding," Proceedings of the 2005 Society of Plastics Engineers Annual Technical Conference, 2005.

67. D. Kazmer, L. Zhu, "Self-Regulating Melt Brakes for Dynamic Control of Molten Plastics," National Science Foundation Design & Manufacturing Conference, Scottsdale, AZ, 2005.
68. D. Kazmer and L. Zhu, "An Integrated Performance Modeling System," Design for Manufacturing Symposium at the 2004 International Mechanical Engineering Congress, Anaheim, CA, 2004.
69. D. Kazmer, B. Fan, R. Mukhari, "Real Time Flow Rate Estimation in Injection Molding," Molding Technology Symposium at the 20th Annual Meeting of the Polymer Processing Society, Akron, OH, June 21, 2003.
70. Kazmer, D., "Declaring an Engineering Major: By Choice or By Chance?," American Society of Engineering Education New England Section 2004 Annual Conference, April 2-3, 2004.
71. D. Kazmer, and B. Fan, "Simulation of Polymer Flow in a Dynamic Pressure Regulator," 8th International Conference on Numerical Methods in Manufacturing Processes, American Institute of Physics, June, 2004.
72. Karania, R., Kazmer, D., and C. Roser, "Plastic Product and Process Design Strategies," ASME DETC 9th Design for Manufacturing Conference, 2004.
73. Kazmer, D., Gupta, D., and B. Fan, "Design and Validation of a Self-Compensating Melt Regulator for Plastics Extrusion," 2004 Society of Plastics Engineers Annual Technical Conference: Extrusion Division, Chicago, IL.
74. Kazmer, D., B. Fan, and R. Najeri, "On-Line Flow Rate and Pressure Analysis with Sensor Fusion," 2004 Society of Plastics Engineers Annual Technical Conference: Injection Molding Division, Chicago, IL.
75. Gao, R., Kazmer, D., Zhang, L., Theurer, C., "Self-Powered Sensing for Mechanical System Condition Monitoring," SPIE Symposium on Smart Structures & Materials/ NDE 2004, San Diego, California, March 14-18, 2004.
76. D. Kazmer, "Synthesis of Melt Pumps and Brakes for Polymer Processing," National Science Foundation Design & Manufacturing Conference, 2004.
77. D. Kazmer, "Synthesis of Melt Pumps and Brakes for Polymer Processing," National Science Foundation Design & Manufacturing Conference, 2004.
78. Zhang, L., Theurer, C., Gao, R., and D. Kazmer, "Frequency Design of an Ultrasonic Transmitter for Injection Molding Pressure Measurement," Proceedings of the North American Manufacturing Research Conference of SME, 8 pages, 2003.
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183. D. Kazmer, "Self-Regulating Melt Valves for Polymer Processing," SPE Merrimack Valley Meeting, National Plastics Center, May 12th, 2005.
184. D. Kazmer, "Self-Regulating Melt Valves for Polymer Processing," Synventive Molding Solutions Meeting, Lowell, MA, May 10th, 2005.
185. D. Kazmer, "Simulation of Polymer Processing," National Science Foundation Center for High Rate Nano-Manufacturing, Lowell, MA, March 26th, 2005.
186. Kazmer, D., "The Economics of Lights Out Manufacturing," Society of Plastics Engineers Topical Conference on Injection Molding Systems, Cleveland, OH, October, 2004.

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191. Kazmer, D., "Competing in the 21st Century," Plastics Institute of America Quarterly Meeting, Lowell, MA, February, 2004.
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253. Kazmer, D. O., Zhu, L., "A Performance Based Representation for Support of Multiple Decisions," International Application No. WO 00/72268, November 30, 2000.
254. Kazmer, D. O., Moss, M. D., "Apparatus and Method for Proportionally Controlling Fluid Delivery to a Mold," International Application No. WO 01/34362, November 3, 2000.
255. Kazmer, D. O., Moss, M. D., "Manifold System Having Proportional Flow Control," International Application No. WO 01/34364, November 3, 2000.
256. D. Kazmer, Invention Disclosure, A Performance Orientation Chart for Decision Support, 2000.
257. Kazmer, D. O., Moos, M. D., Doyle, M., VanGeel, H., "Manifold System Having Flow Control," International Application No. WO 01/21377, September 21, 2000.
258. Fagade, A., Kazmer, D., "Early Cost Estimation for Injection Molded Parts," 1999.

259. Kazmer, D. O., "Reflection on Teaching and Learning," speech to University of Massachusetts' Celebration of Teaching and Learning, March 25, 1999.
260. Kazmer, D. O., Moss, M., "Manifold System Having Flow Control," International Application No. WO 99/54109, May 27, 1998.
261. Kapoor, D., and D. Kazmer, "Comparison of Sequential Valve Gate Molding to Multi-Cavity Melt Control Injection Molding," 1998.
262. Kazmer, D. O., "1998 Informant: Activities of the Design and Processing Quality Lab," 1998.
263. Fagade, A., Kapoor, D., and D. Kazmer, "A Discussion of Design and Manufacturing Complexity," 1998.
264. D. Kazmer, Invention Disclosure, Looking Glass: An Optimization System for Injection Molding, 1998.
265. D. Kazmer, Invention Disclosure, Twin Screw Extruder for Continuous Manufacture of Concrete, 1997.
266. D. Kazmer, Invention Disclosure, Laser Grid Array Stereolithography, 1997.
267. D. Kazmer, Invention Disclosure, Screw Design for Efficient Recycling of Polymeric Materials, 1997.
268. Kazmer, D. O., "Injection molding gate flow control," U.S. Patent #5,556,582, September 17, 1996.
269. Kazmer, D. O., Injection Molding Cost Estimator (Java Software), 1995.
270. Kazmer, D. O., "Evaluation of Advanced Simulations for the Injection Molding Process," GE Plastics Internal Report, Pittsfield, MA, 1992.
271. Poslinski, A. J., Aslam, S., Kazmer, D. O., "Effects of Viscosity Variation on Injection Molding," GE Research & Development Technical Information Series Number 92CRD146, 1992.
272. Kazmer, D. O., "Diskflow Validation Summary," GE Plastics Report, 1992.
273. Kazmer, D. O., "Customer Training Manual on Mold Packing Analysis," GE Plastics Report, 1992.
274. Kazmer, D. O., "Development of a Radial Flow Analysis for Injection Molding," GE Research & Development Technical Information Series Number 91CRD195, 1991.

275. Kazmer, D. O., "Adaptive Meshing of Two-Dimensional Evolving Geometries," GE Research & Development Technical Information Series Number 90CRD198, 1990.

D. INSTRUCTION RELATED ACTIVITY

Courses Taught

- Fall 1995, ME415: Mechanical Systems Design, Enrollment: 14.
- Spring 1996, ME415: Mechanical Systems Design, Enrollment: 20.
- Fall 1996, MIE477: Production Scheduling and Control, Enrollment: 15.
- Spring 1997, MIE415: Mechanical Systems Design, Enrollment: 32.
- Fall 1997, MIE760: Advanced Mechanical Systems Design, Enrollment: 15.
- Spring 1998, MIE415: Mechanical Systems Design, Enrollment: 28.
- Spring 1998, MIE395: Engineering Professionalism Seminar, Enrollment: 20.
- Fall 1998, MIE697M: Modern CAD System Development, Enrollment: 16.
- Spring 1999, MIE415: MIE Capstone Systems Design, Enrollment: 25.
- Spring 1999, MIE395: Engineering Professionalism Seminar, Enrollment: 40.
- Fall 1999, MIE113: Introduction to Mech. & Ind. Eng, Enrollment: 24.
- Fall 1999, MIE697P: Manufacturing Process Design, Enrollment: 15.
- Spring 2000, MIE415: Mechanical Systems Design, Enrollment: 20.
- Spring 2002, 26.373: Mold Engineering I, Enrollment: 21.
- Fall 2003, 26.524: Process Analysis, Instrumentation, Control, Enrollment: 9.
- Spring 2003, 26.373: Mold Engineering I, Enrollment: 21.
- Spring 2003, 26.521: Lean Plastics Manufacturing, Enrollment: 10.
- Fall 2003 (3 lecture sections), 25.107: Introduction to Engineering I, Enrollment: 288.
- Spring 2004, 26.373: Mold Engineering I, Enrollment: 23.
- Spring 2004, 26.521: Lean Plastics Manufacturing, Enrollment: 12.
- Fall 2004 (2 lecture sections plus 9 recitation sections), 25.107: Introduction to Engineering I, Enrollment: 279.

Other Instructional Contributions

1. D. Kazmer, Mold Design Course Packet, 12 pages, 2002-2005.
2. D. Kazmer, The Design Process, 2 36" by 48" Posters installed at the Tsongas Industrial History Museum, 2004.
3. D. Kazmer, Introduction to Engineering Course Packet, 39 pages, 2003-2004.
4. Kazmer, D., "Declaring an Engineering Major: By Choice or By Chance?," American Society of Engineering Education New England Section 2004 Annual Conference, April 2-3, 2004.

5. Kazmer, D., S. Orroth, N. Schott (2003), "Future Directions for Plastics Engineering Education", Society of Plastics Engineers Annual Technical Conference: Injection Molding Division, Nashville, TN.
6. D. Kazmer, "Interactive Learning: Simulating The Design Process," Symposium on Manufacturing Education, Stanford University, 2000.
7. Kazmer, D. O., "On the Divergence of Case Studies and Hardware Prototypes in Active Learning," 1998 American Society of Engineering Education Northeast Regional Meeting.
8. Kazmer, D. O., Engineering Professionalism, a senior seminar investigating the strategy and practice in engineering careers. Optional seminar offered 1997-99. Became mandatory part of accredited curriculum in 2000.

E. SERVICE ACTIVITIES

1. Community Activities Related to Professional Field

- Chair, ASME Design for Manufacturing Technical Committee, 2003-2005. Responsibilities have included staffing conferences for the DFM tracks at annual Design Engineering Technical Conference, International Mechanical Engineering Congress, and National Manufacturing Week. Also responsible for liaison with Design Education and other technical committees as well as tri-annual reports and meetings with the Design Division Executive Committee.
- Chair, Design for Manufacturing Symposium, International Mechanical Engineering Congress, November, 2004.
- Chair, Molding Technology Symposium, 2004 International Polymer Processing Conference, June, 2004.
- Associate Editor, Journal of Mechanical Design, 2003-2005.
- Associate Editor, Advances in Polymer Technology, 2004-2006.
- Member, Mold-Masters Advisory Council, 2003-2005.
- Founding Member, ThermoCeramix Technical Advisory Board, 2003-2005.
- Associate Editor, Polymer Plastics Technology and Engineering, 2001-2005.
- Chair, 6th Design for Manufacturing Symposium, ASME Engineering Design Technical Conferences, 2001.
- Ad Hoc Reviewer, American Institute of Aeronautics and Astronautics, 2003-.
- Ad Hoc Reviewer, Artificial Intelligence for Engineering Design, Analysis and Manufacturing, 2003-.
- Ad Hoc Reviewer, ASME Journal of Manufacturing Science, 1998-.
- Ad Hoc Reviewer, ASME Journal of Mechanical Design, 1996-.
- Ad Hoc Reviewer, IEEE Transactions on Automation Science and Engineering, 2001-.
- Ad Hoc Reviewer, IEEE Transaction on Engineering Management, 2004-.
- Ad Hoc Reviewer, International Journal of Food Science, 2003-04.
- Ad Hoc Reviewer, International Polymer Processing, 1999-.
- Ad Hoc Reviewer, Journal of Polymer Composites, 2000-.
- Ad Hoc Reviewer, NSF DMII Design Engineering Unsolicited Proposals, 1996-2000.
- Ad Hoc Reviewer, NSF DMII Manufacturing Equipment Unsolicited Proposals, 2000-.
- Ad Hoc Reviewer, NSF DMII Manufacturing Processes Unsolicited Proposals, 2000-.
- Ad Hoc Reviewer, NSF DMII Operations Management Unsolicited Proposals, 1999-2001.

- Ad Hoc Reviewer, NSF DMII Small Business Initiative Research Unsolicited Proposals, 2003.
- Ad Hoc Reviewer, Polymer Plastics Technology & Engineering, 2000-.
- Ad Hoc Reviewer, Polymer Engineering & Science, 1997-.
- Ad Hoc Reviewer, Research in Engineering Design, 1998-2003.
- Ad Hoc Reviewer, Rheological Acta, 2003-.
- Member, Collaboration Catalyst Corp. Technical Advisory Board, 2001-.

2. Committee Activities (Indicate if department, college or university level)

- Member, UML Faculty Senate, 2003-.
- Author and Administrator, Plastics Engineering Web Site, 2003. Responsibilities have included renovation and deployment of department web site. Surveyed students, faculty, and alumni to characterize requirements. Developed architecture and functionality. Implemented new site with content from Department Head Robert Malloy and assistance from a computer science graduate student.

3. Other Service to the University

- Liaison, Service Learning Project for the Tsongas Industrial History Center's Innovation Laboratory, 2004. Incorporated service learning project in the Introduction to Engineering course. Project involved liaison with staff at Tsongas, project development, student instructions in both lectures and sections, co-evaluation of projects, post-processing of evaluations, development of exhibit, individual supervision of final student projects, and final exhibition at Tsongas. Copies of posters are provided starting on page 41. A brief, unsolicited statement regarding my service is provided on page 41.
- Participant, College of Engineering Open House (Fall 2002, Spring 2003, Fall 2003, Spring 2004, and Fall 2004). Developed presentations and lab demonstrations for open houses. Engaged students in discussions about engineering, majors, plastics part design and manufacturing, the freshmen course, and other topics.
- Participant, UML SLICE Proposal, 2004. Assisted in development and implementation of SLICE project. While not listed as a co-investigator, I have been an active participant with regard to proposal development, workshops, and project implementation.
- Participant, UML Nano-Manufacturing Center, 2004. Assisted in proposal development and implementation of National Science Foundation nano-manufacturing center. Planning to increase participation in the area of process simulation and process development.
- Member, University Patent Evaluation Committee, 2000-2001.