

**Professional Vita**  
**Robert A. Malloy, Ph.D.**

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**Education**

Ph.D. Polymer Science, University of Lowell, Lowell, Massachusetts (1987).  
B.S. Plastics Engineering, University of Lowell, Lowell, Massachusetts (1979).  
A.S. Engineering, Massachusetts Bay Community College, Watertown, Massachusetts (1976).

**Faculty Service at UMass Lowell**

2016-Present Professor Emeritus, Department of Plastics Engineering  
2002-2016 Chairperson, Department of Plastics Engineering  
1995-2016 Full Professor, Department of Plastics Engineering  
1992-1995 Associate Professor, Department of Plastics Engineering  
1987-1992 Assistant Professor, Department of Plastics Engineering

**Other Related Academic Experience**

1980-1982 Professor of Plastics Technology, Algerian Petroleum Institute, Annaba, Algeria.  
1991-1996 External Examiner, Singapore Polytechnic Institute Chemical Process Technology Department, Republic of Singapore.

**Professional Activities**

**Consulting**

Have served as a consulting engineer or short course instructor on the subjects of *Plastics Manufacturing, Mold Design, or Plastic Part Design* for companies or organizations including; Nokia, I-Omega, Hewlett Packard, Northern Telecom (Canada), Motorola, Minnesota Rubber, Eastman Kodak, S.C, Johnson, Ford Motor Company, Pall Corporation, Delphi, Tuthill, Bowles, Tyco, General Motors, Ericson, Mack (Renault) Trucks, Dell Computer, HUF Corporation, McNeil Consumer Products, Simon Marketing, LDM Automotive, Navistar Trucks, Boston Scientific, Staples, Tech Trax, The University of Wisconsin (Milwaukee Campus), Society of Manufacturing Engineers, the Center for Management Technology (Singapore), and Husky (Canada).

**Professional Society Activity**

Member and Fellow - Society of Plastics Engineers (SPE) - Active in SPE International activities. Past-Chairman for the SPE Injection Molding Division Board of Directors and Eastern New England SPE Section.

Past Chair, Society of Plastics Engineers Foundation Scholarship Committee, Bethel, CT.

Dynacraft BSC, Inc.

**Exhibit 1009**

Dynacraft v. Mattel  
IPR2018-00042

Founding Editor: The Society of Plastics Engineers *Journal of Injection Molding Technology*. Served as Chief Editor from 1997-2001.

Member, Plastics Pioneers Association.

## Honors and Awards

*Plastics Hall of Fame Member*, Society of the Plastics Industry "Hall of Fame" (Inducted April 2012)  
*Fellow*, Society of Plastics Engineers (May 2010)  
*International Education Award*, Society of Plastics Engineers (June 2009)  
*Outstanding Graduate Faculty Award*, UMass Lowell, (May 2005)  
*Outstanding Plastics Processor Award*, Modern Plastics Magazine (March 2005)  
*College of Engineering Service Award* UMass Lowell, (2003).  
*Outstanding Alumni Award*, UMass Lowell (2001).  
*Best Technical Paper Award*, Plastics Recycling Division, Society of Plastics Engineers (1999).  
*Chairman's Award*, Injection Molding Division, Society of Plastics Engineers (1992).  
*Outstanding Faculty Award*, UMass Lowell, Department of Plastics Engineering (1990).  
*Best Technical Paper Award*, Mold Design Division, Society of Plastics Engineers (1989).  
*Best Technical Paper Award*, Injection Molding Division, Society of Plastics Engineers (1987).

## Publications

### Books and Chapters

Author, "Plastic Part Design for Injection Molding 2<sup>nd</sup> Edition", Carl Hanser / Gardner Publishers, Munich Germany / Cincinnati, Ohio, September (2010). Comprehensive textbook on the design and manufacturing considerations for injection molded plastic parts. Includes new sections on Design for Enhanced Recyclability and Sustainability. Previous edition published in 1994 was reprinted eight times and has been translated into both Russian and Chinese languages.

Author, The *Plastics* section for "The New Book of Knowledge", Grolier Publishers, Bethel, CT, May (1999).

Co-author, *Foamed Composites Section*, International Encyclopedia of Composites, VCH Publishers, New York (1990).

Co-author, *Polymer Processing Chapter* for "Applied Polymer Science Handbook", 2<sup>nd</sup> Edition, American Chemical Society (1985).

Columnist and Design Editor for, "Plastics World", Cahners Publishing, Boston, MA. Author of the bimonthly *Plastic Part Design Column* (1993 - 1997).

### U.S. Patents

1. U.S. Patent # 5,209,107, R. A. Malloy and C. Grudzien, "Capillary Rheometer Plunger Pressure Transducer and Measurement Technique", Issue date: May (1993).
2. U.S. Patent # 5,220,754, R. A. Malloy and Amad Tayebi, "Process and Equipment for the Recovery and Recycling of Optical Media Disks", Issue date: June (1993).
3. U.S. Patent # 5,308,953 R. A. Malloy and C. Grudzien, "Heater Block Holder for a Capillary Rheometer Plunger Pressure Transducer", Issue date: May (1994).
4. U.S. Patent # 5,347,851, R. A. Malloy and C. Grudzien, "Capillary Rheometer Plunger Pressure Transducer and Measurement Technique", Issue date: September (1994).
5. U.S. Patent # 5,417,106, R. A. Malloy and C. Grudzien, "Capillary Rheometer Plunger Pressure Transducer and Measurement Technique", Issue date: May (1995).

6. U.S. Patent # 5,538,413, R. A. Malloy and G. Gardner, "Apparatus for Strengthening Weld Lines in Molded Parts", Issue date: July (1996).
7. U.S. Patent # 5,719,198, R. A. Malloy, I. Rios, and D. Young, "Recycling of Auto Carpet Scrap", Issue date: February (1998).
8. U.S. Patent # 5,852,115, R. A. Malloy, I. Rios, and D. Young, "Recycling of Auto Carpet Scrap", Issue date: December (1998).
9. U.S. Patent # 5,859,071, R. A. Malloy, I. Rios, and D. Young, "Recycling of Auto Carpet Scrap", Issue date: December (1999).
10. U.S. Patent # 6,669,773, R. Malloy, C. Swan, M. Kashi, "Synthetic Aggregate from Coal Fly Ash and Mixed Plastic Waste", Issue date: December (2003).
11. U.S. Patent # 7,021,816 B2, R. A. Malloy, "Plasticating Screw for Thermoplastics", Issue date: April (2006).
12. U.S. Patent # 7,267,474, R. A. Malloy, "Plasticating Screw for Thermoplastics", Issue date: September (2007).
13. U.S. Design Patent # D675,129 S1, R.A. Malloy, "Inventor's Trophy Award", Issue date: January (2013).

### European Patents

European Carpet Recycling Patents: EP0000719301A1, EP0000719301A4, EP0000719301B1, CA0002170616A, WO1995006684A1.

European Capillary Rheometry Patents: EP0000598644A1, EP0000578785A1, CA0002103317A, WO1992017764A1.

### Conference and Journal Papers

Author or co-author of over sixty conference and journal papers in the area of Plastics Engineering, Manufacturing Engineering or Materials Engineering. Conference and journal publications include:

R. A. Malloy, "Closed Loop Inlet Pressure Control for Melt Pump Assisted Single Screw Extrusion", SPE Annual Technical Conference, **30**, 604, May (1984).

R. A. Malloy, S. Chen, S. Orroth, and R. VanHooft, "Melt Pressure Measurement", SPE Annual Technical Conference, **30**, 102, May (1984).

R. A. Malloy, E. Arnold and S. Orroth, "Turning the Screw on Boss Design", Plastics Engineering, **30**, (4), 43, April (1985).

R. A. Malloy, E. Arnold and S. Orroth, "Self Threading Screw Boss Design", SPE Annual Technical Conference, **31**, 744, (May 1985).

R. A. Malloy, S. Orroth and S. Chen, "An Investigation Into the Extrusion of Reground LDPE", SPE Annual Technical Conference, **32**, 901 (May 1986).

R. A. Malloy, S. Orroth and S. Chen, "An Investigation Into the Extrusion of Reground LDPE", Annual TAPPI Polymers and Laminations Conference, September (1986).

R. A. Malloy and J. Hudson, "Structural Foam System Based on Liquid Crystal", SPE Annual Technical Conference, **33**, 806, May (1987).

R. A. Malloy, S. Chen, and S. Orroth, "A Study of Injection to Hold Pressure Switch-over Based on Time, Position, and Pressure", SPE Annual Technical Conference, **33**, May (1987). *Best Paper Award*

R. A. Malloy, J. Hudson, and T. Massina, "A New High Performance Conductive Thermoplastic Elastomer", SPE Annual Technical Conference, **34**, 1735, May (1988).

R. A. Malloy, S. Chen, and S. Orroth, "Viscosity Measurements Using an Instrumented Injection Molding Nozzle", SPE Annual Technical Conference, **34**, 279 May (1988).

R. A. Malloy, S. Chen, S. Orroth, and P. Farren, "Melt Viscosity Measurements in Injection Molding", for the British Rubber and Plastics Technical Conference, Bradford, England, July (1989).

R. A. Malloy and P. Majeski, "Design of Pin Ejector Systems for Injection Molds", SPE Annual Technical Conference, **35**, 1231, May (1989). *Best Paper Award*.

R. A. Malloy, S. Chang, and S. Chen, "Melt Viscosity Measurements on Long Fiber Reinforced Polymers", for the International SAMPE Conference, Tokyo, Japan, November (1989).

R. A. Malloy, M. Salas, and S. Chen, "The Effect of Fiber Reinforcements on the Mechanical Properties of Plastic Boards Produced using Post Consumer Plastic Waste", for the Society of Automotive Engineers International Congress, Detroit, MI, # 900522 February (1990).

R. A. Malloy, M. Salas, and S. Chen, "Effect of Moisture on the Properties of Post Consumer Plastic Waste Boards", for the A.I.Ch.E. Spring National Meeting, Orlando, FL, March (1990).

R. A. Malloy, J. Curtin and R. Brockway, "Adhesive Bonding of an Antelope Horn", SAMPE Journal, **26** (2), 83 (1990).

R. A. Malloy, D. Kopecki and R. Ranger, "The Effect of Molecular Weight on the Weld Strength of Polycarbonate", SPE Annual Technical Conference, **36**, 1788, May (1990).

R. A. Malloy, and C. Ross, "Melt Viscosity as a Measure of Melt Quality in Injection Molding", SPE Annual Technical Conference, **36**, 243, May (1990).

R. A. Malloy and C. Ou, "Shear Viscosity Measurements on Filled Polypropylene Using the Gear Pump Assisted Twin Screw Extrusion Process", SPE Annual Technical Conference, **36**, 1582, May (1990).

R. A. Malloy, M. Salas, M. Johnson and S. Chen, "The Effect of Fillers on the Mechanical Properties of Plastic Boards Produced Using Post Consumer Plastic Waste", SPE Annual Technical Conference, **36**, 1430, May (1990).

R. A. Malloy, J. Wu and S. Chen, "Cavity Pressure Pattern Recognition", SPE Regional Technical Conference, November (1990).

R. A. Malloy, V. Atluri, and C. Ross, "Melt Viscosity Measurements in Injection Molding", SPE Regional Technical Conference, November (1990).

R. A. Malloy, and C. Burke, "An Experimental Study of the Part Ejection Process in Injection Molding", SPE Annual Technical Conference, **37**, 1781, (May 1991).

R. A. Malloy, P. Kadkol and L. Hornberger, "The Mechanical Properties of Glass Fiber Reinforced Polycarbonate Structural Foam", SPE Annual Technical Conference, **37**, 1319 May (1991).

R. A. Malloy, J. Wu and S. Chen, "Injection Molding Process Diagnosis Using Cavity Pressure Measurement", SPE Annual Technical Conference, **37**, 444, May (1991).

R. A. Malloy, and V. Atluri, "Characterization of the Flow Behavior of Polycarbonate for Injection Molding Applications", SPE Annual Technical Conference, **37**, 377, May (1991).

- R. A. Malloy, P. Kadkol and L. Hornberger, "The Mechanical Properties of Glass Fiber Reinforced Polycarbonate Structural Foam", Plastics Engineering, **36**, (4), 25 (1991).
- R. A. Malloy, J. Pacini and S. Shen, "Melt Temperature Measurements in Thermoplastic Extrusion", for the British Rubber and Plastics Conference, Bradford, England, July (1991).
- R. A. Malloy, C. Grudzien and R. Sunderrajan, "Development of Instrumented Pistons for Capillary Rheometry", SPE Annual Technical Conference, **38**, May (1992).
- R. A. Malloy, and S. Brambhatt, "An Evaluation of Weld Line Strengths for Styrene / Maleic Anhydride Copolymer", SPE Annual Technical Conference, **38**, May (1992).
- R. A. Malloy, J. Pacini and S. Shen, "Melt Temperature Distributions in Thermoplastic Extrusion", SPE Annual Technical Conference, **38**, May (1992).
- R. A. Malloy, P. Kadkol and L. Hornberger, "The Mechanical Properties of Glass Fiber Reinforced Polycarbonate Structural Foam", Technical Papers, Society of Plastics Industry Structural Plastics Conference, Dallas, April (1992).
- R. Malloy, K. Boudreau and A. Tayebi, "A Method for the Recycling of Polycarbonate from Compact Discs", SPE Annual Technical Conference, **39**, May (1993).
- R. Malloy, K. Boudreau, and M. Condo, "Mixed Plastic Recycling using Built-in Compatibilizing Agents", SPE Recycling Regional Technical Conference, October (1992).
- R. Malloy, I. Rios, and X. Lee, "Recycling of Automotive Carpet Scrap", A.I.Ch.E. Spring National Meeting, New Orleans, March (1992).
- R. Malloy and R. Balsamo and D. Hayward, "Ejection Forces: Frictional Effects", SPE Annual Technical Conference, **39**, May (1993).
- R. Malloy, G. Gardner, and E. Grossman, "Improving Weld Line Strengths using a Multi-live Feed Molding Process", SPE Annual Technical Conference, **39**, May (1993).
- R. Malloy, R. Nunn, and M. Bandreddi, "An Experimental Evaluation of Profile Holding Pressures", SPE Regional Technical Conference, Dallas, TX, October (1993).
- R. Malloy, and G. Gardner, "Improving Weld Line Strengths using a Moving Boundary Technique", SPE Annual Technical Conference, **40**, May (1994).
- R. Malloy, and M. Orroth, "The Effect of Polypropylene Contamination on The Properties of Recycled HDPE", SPE Annual Technical Conference, **40**, May (1994).
- R. Malloy, R. Nunn, and M. Bandreddi, "An Experimental Evaluation of Profile Holding Pressures", SPE Annual Technical Conference, **40**, May (1994).
- R. Malloy, G. Gardner, and E. Grossman, "Improving Weld Strengths using a Multi-live Feed Molding Process", Engineering Plastics Journal, RAPRA, England, **7**, 155 (1994).
- R. Malloy, and G. Gardner, "Weldline, Orientation, and Packing Control Using Conventional and Novel Molding Techniques", Product Design Forum, Braintree, MA, September (1994).
- R. Malloy, C. Cooper, and . Berkok, "Counter-pressure Intrusion of Foamed Plastic Lumber", SPE Annual Technical Conference, **41**, May (1995).

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