

Curriculum Vitae

Robert E. Johnson
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Education:

Ph.D. in Engineering Science
California Institute of Technology
Pasadena, California 91125
Thesis Advisor: Professor Theodore Y. Wu

MS in Engineering Science
California Institute of Technology
Pasadena, California 91125

BS in Engineering Science
State University of New York at Buffalo
Buffalo, New York

Professional Experience:

2000-present	Professor and Dean The William States Lee College of Engineering The University of North Carolina at Charlotte
1994-99	Professor and Head Dept. of Mechanical Engrg. and Engrg. Science The University of North Carolina at Charlotte
1987 - 1994	Professor Dept. of Theoretical and Applied Mechanics University of Illinois at Urbana-Champaign
Summer 1991	Visiting Professor Alcoa Technical Center (Pittsburgh, PA)
1984-1987	Associate Professor Dept. of Theoretical and Applied Mechanics University of Illinois at Urbana-Champaign
1978-1984	Assistant Professor Dept. of Theoretical and Applied Mechanics University of Illinois at Urbana-Champaign
1977-1978	Research Fellow Jointly appointed to Engineering and Biology California Institute of Technology
1971-1973	Engineering Trainee, Military Sealift Command Brooklyn, NY

Awards/Recognition:

- 2004 Tau Alpha Pi Honor Society
- 2002 Fellow of the ASME
- 1988 Bureau Prize, International Congress of Applied Mechanics, Grenoble
- 1974-1976 Rockwell International Graduate Fellowship
- 1973-1974 National Science Foundation Trainee
- 1973 Summa Cum Laude, SUNY at Buffalo

Selected Activities:

- Developed the Energy Production and Infrastructure Center (EPIC): \$76M facility; \$5M in recurring operating funds and new faculty (opens 2011).
- Developed Motorsports Lab II (\$5M; opens 2011), also solicited \$1.9M gift.
- Doubled the faculty and staff to 177, and grew external funding from \$3M to \$8M.
- Organizer for Southern Universities Engineering Consortium (SUEC), 2008-present.
- Organized student recruiting trip with SUEC to Vietnam and Indonesia, Sept. 2010.
- Advisory Council for Leaf and Stem after school program, 2008-present.
- STEM Advisory Committee, Charlotte-Mecklenburg Schools, 2008-present.
- Advance Future of the Faculty Committee – 2009-present.
- Developed the Industrial Solutions Lab – industry funded student projects, 2007-present.
- Proposed and launched new degree programs: MS in Engineering Management, BS in Systems Engineering, BS and MS in Construction Management, MS in Fire Protection and Administration, and Ph.D. in Infrastructure and Environmental Systems.
- Created five research centers: Energy Production and Infrastructure Center (EPIC), the Center for Biomedical Engineering Systems (CBES), the Infrastructure, Design, Environment and Sustainability (IDEaS) center, the NC Motorsports and Automotive Research Center (NCMARC), and the Center for Lean Logistics and Engineered Systems (CLLES).
- Collaborated with NC Senator Basnight and 2 other NC engineering schools to launch a \$2M/year program in ocean energy engineering funded by the state (began 2010).
- Began the Freshman Learning Community which has improved retention and graduation rates; based on the FLC success, recently started Women in Science and Engineering (WiSE) residential program.
- Reorganized the college administration (2005-2007); departed from the traditional departmental secretarial staff structure to a organization with Business Service Specialists and Student Service Specialists with clear responsibilities.
- NCAA re-certification committee on Equity and Student-Athlete Welfare, 2004-05.
- NC Polymer Center of Excellence - Board of Governors 1999-2009, secretary 2009.
- Ben Craig Center (business incubator) - Board of Advisors, 1999-present.
- Ben Craig Center Mentoring Team, 2008-2010.
- Planning committee for Faculty and Staff Club 2008-2009.
- Trade Mission to Europe – NC Department of Commerce – 2004.
- NCAA Self-Study Committee – Equity, Welfare & Sportsmanship, 2004.
- Launched one of the initial three Ph.D. programs at UNC Charlotte (ME) and started the concentration in Motorsports Engineering (continue to teach race car aerodynamics in the program).

Search Committee for Executive Director of Charlotte Research Institute, 2001-02.
Search Committee for Director of Optoelectronics and Optical Communications Center, 2001.
NASA Dynamics & Stability Peer Review Panel, July 1999.
NSF Manuf. Review Panel, June 1998.
NC State-to-State Exchange Program Delegation, Baden-Wuerttemberg, Germany, April 1998.
Task Force for Governance of Interdisciplinary Programs, 1998.
University Research Strategic Planning Committee, 1998.
ICAR team Faculty Advisor/Coach, 1997-99 (InterCollegiate Auto Racing Assoc.).
ICAR Board of Directors, Chairman, Jan. 2000-2002 (Assoc. closed 2002).
Coordinator-State Employees Combined Campaign/United Way, 1996-2000.
UNC-Charlotte Patent Committee, 1995-1999.
Editorial Committee & Policy Committee, SECTAM XIX, 1998.
NASA Microgravity Research Review Panel Oct. 1995.
ASME Session co-Chair, Nov. 1994, Nov. 1995.
Executive Committee College of Engineering UIUC (1988-1992).
Member of the Technical Committee of the ASME on Mechanics of Materials Processing and Manufacturing, 1989-1994.
Advisory Committee, Dept. of Theoretical and Applied Mechanics, UIUC, 1990-94.

Professional Development Activities:

American Leadership Forum Class III, 2002-2003.
Executive Leadership Forum participant, Philip Morris USA, April 2003.
NC Outward Bound, October 2002.
Ethics and the World of Business, Barnhardt Seminar, October 2001.
CASE: Fund Raising for Deans, Miami, FL, Feb. 2001.
Management Development Program, Harvard University, summer 2000.
Leadership North Carolina, Class V, 1998.
SUCCEED Student Success Workshop, Feb. 12-13, 1998.
Arts and Sciences Council – department coordinator 1997-99.
United Way Combined Campaign – department coordinator 1995-99.
Organizer, ASME Regional Mechanical Engineering Dept. Heads Conference, March 2000, Orlando, FL.
ASME Mechanical Engineering Dept. Heads Conference, National & Regional meetings, San Diego, CA, March 1997.
Professional Development Series, Charlotte Chamber of Commerce, March 12 & 26, 1997.
Effective College Teaching: A Workshop for Scientists, Engineers, and Mathematicians Who Teach, UNC-Chapel Hill, NC, Oct. 1996.
2nd Inter. Conf. on Asynchronous Learning Networks, NYU, New York, Nov. 1996.
13th Academic Chairpersons Conf., Orlando, FL, Feb. 1996.
UNC-Charlotte International Program planning trip, Lausanne, Switzerland; Aachen, Germany; Vienna, Austria, Oct. 1996.
ASME Mechanical Engineering Department Heads Conf., Region IV & XI, Blacksburg, VA, March 1996.
ABET Evaluator Training Conference, Baltimore, MD, June 1995.

Recent Research/Education Support:

- National Science Foundation, ADVANCE, “*Supplements that Enhance Research and Visibility (SERV)*,” UNC Charlotte Solution Team Award, 2007-2008.
- National Science Foundation, “*Analysis, Design and Testing of Profiled Radial-Thrust Bearings*” 2001-2004, co-investigators: N. Manring (Univ. of Missouri), H.P. Cherukuri (\$510k, \$270k to UNCC).
- National Science Foundation (DMII 98-20880): “*Integrated Process Models to Predict Thermal Distortion and Residual Stress*” 1999-02 [co-PIs: Dr. Harish Cherukuri (UNC Charlotte) and Dr. R. Smelser, (Univ. of Idaho); \$430k].
- Macsyma, Inc. “*Academic Grant for Symbolic Software Application in the Mechanical Engineering Curriculum*” 1996.
- National Science Foundation (DMI-9409680): “*Engineering Research Deployment Teaching Initiative: Asymptotic Methods for Deformation Processing*” 1994-96 (\$230k)
- National Science Foundation (DMI 93-22714): “*Asymptotic Methods for Deformation Processing*” 1993-97 (\$415k).
- National Science Foundation (DDM 90-16496): “*Shape Rolling and Lateral Spread*” 1990-93 (\$290k)
- National Science Foundation (MSM 88-03919): “*Reactive-Liquid Rotational Molding*” 1988-1991 (\$245k).
- National Science Foundation (MSM 85-13795): “*Flow Problems in Materials Processing and Hydraulic Fracture*” 1985-1987 (\$210k)
- Alcoa Foundation: “*Asymptotic Analysis in Sheet Rolling*” 1989-1995 (\$90k).
- Alcoa Laboratories: “*Nonlinear Effects in Roll Chatter*” 1991 (\$15k).

Selected Conference Participation:

- Engineering Deans Institute, 2000-2009.
- Coal Gen conference, 2009.
- NAE Grand Challenges Conference, 2008.
- ASEE Conference, 2006.
- International Conference on Engineering Education, San Juan, PR, July 2006.
- Ethics and Social Responsibility in Engineering & Technology, New Orleans, Oct. 15-17, 2003
- ASME Technical Committee on Materials Processing and Manufacturing, IMECE, Nashville, November 1999.
- ASM Heat Treating Society, Cincinnati, November 1999.
- NC Board of Science & Technology Meeting, Banner Elk, Oct. 1999.
- Co-organizer Materials Processing Symp., ASME Mechanics & Materials Conf., Virginia Institute of Technology, June 1999.
- Numiform '98, Enschede, Netherlands
- Organized two sessions on metal forming at SECTAM XIX, FAU, 1998.
- 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002 NSF Design & Manufacturing Grantees Conference.
- Symposium on Rolling Technology, Session Co-Chair, ASME Inter. Mech. Eng. Congress and Exposition, Atlanta, GA, Nov. 1996.

ASME Fluids Eng. Div. Summer Meeting, San Diego, CA, July.
18th SECTAM, Tuscaloosa, AL, April 1996.
Fluid Machinery Forum, ASME Fluids Eng. Div. Summer Meeting, Lake Tahoe, NV, June 1994.
Wright Laboratory/AFOSR Workshop on Integrated Theory and Numerics for Design Applications, Ft. Walton Beach, FL, June 1994.
Symposium on Rolling Technology, Session Chair, ASME Inter. Mech. Eng. Congress and Exposition, Chicago, IL, Nov. 1994.
First World Congress on Intelligent Manufacturing Processes & Systems, Mayaguez, Puerto Rico, February 1995.
Alcoa Technical Center, Fabricating Technology - Process Modeling Review, March, 1995.
Nonlinear Dynamics in Materials Processing and Manufacturing, The Institute of Mechanics and Materials, LaJolla, CA, March, 1995.

References: available by request.

Publications of R.E. Johnson

“Flagellar hydrodynamics: A comparison between resistive-force theory and slender-body,” with C.J. Brokaw, *Biophys. J.*, 25, 113-127 (1979).
“Hydromechanics of low-Reynolds-number flow. Part 5. Motion of a slender torus,” with T.Y. Wu, *J. Fluid Mech.*, 95, 263-278 (1979).
“The role of cell body oscillations in the propulsion of capacitated spermatozoa,” *Proc. of the 1979 Biomechanics Symposium*, AMD, 32, 105-109 (1980).
“A theoretical and experimental study of tracheal muco-ciliary transport,” with G. Yates, T.Y. Wu, A.T. Cheung & C. Frand, *Biorheology*, 17, 151-162 (1980).
“An improved slender-body theory for Stokes flow,” *J. Fluid Mech.*, 99, 411-431 (1980).
“Stokes flow past a sphere coated with a thin fluid film,” *J. Fluid Mech.*, 110, 217-238 (1981).
“The wave induced transport of an oil slick,” with C. Gustafson, *Bulletin of the Amer. Phys. Soc.*, (Nov. 1981).
“Stokes flow past bubbles and drops partially coated with thin films. Part 1: Stagnant cap of surfactant film - exact solution,” with S.S. Sadhal, *J. Fluid Mech.*, 126., 237-250 (1983).
“Directional sensitivity of hot wire probes,” with R. Adrian, B. Jones, P. Merati & A. Tung, *Recent Adv. in Eng. & Their Impact on Civil Eng. Pract.*, W. Chen & A. LewisNew, eds., 1287-1290 (1983).
“Stokes flow past a two-fluid droplet,” with S.S. Sadhal, *Annals York Acad. Sci.*, 404, 506-509 (1983).
“On transverse secondary flows in wave channels,” *J. Appl. Mech.*, 50, 244-250 (1983).
“Aerodynamic disturbances of hot wire probes and their effect on directional sensitivity,” with R. Adrian, B. Jones, P. Merati & A. Tung, *J. Phys. E Sci. Instr.*, 17, 62-71 (1984).
“Near-surface flow in glaciers obeying Glen’s law,” with R.M. McMeeking, *Q. J. Mech. Appl. Math.*, 37, 273-291 (1984).

“Power-law creep of a material being compressed between parallel plates: a singular perturbation problem,” *J. Eng. Math.*, 18, 105-117 (1984).

“On the heat transfer from a permeable sphere in Stokes flow,” with R.P. Smet, *Int. J. Eng. Sci.*, 22, 947-958, (1984).

"Multiphase drops and bubbles," with S.S. Sadhal, *Annual Rev. Fluid Mech.*, 17, 289-320 (1985).

“On the analysis of longitudinal stress in glaciers,” with R.M. McMeeking, *J. Glaciology*, 31, 293-302 (1985).

“On the mechanics of surging glaciers,” with R.M. McMeeking, *J. Glaciology*, 32, 120-132 (1986).

“On the deformation of drops and bubbles with varying interfacial tension,” with S.S. Sadhal, *Chem. Eng. Commun.*, 46, 97-109 (1986).

“Laminar-film condensation/evaporation on a vertically fluted surface,” with A. Conlisk, *J. Fluid Mech.*, 184, 245-266 (1987).

“On the effective viscosity of a suspension of drops partially coated by a stagnant film,” with R.P. Smet, *Chem. Eng. Sci.*, 42, 2345-2350 (1987).

“Conical extrusion of a work-hardening material: an asymptotic analysis,” *J. Eng. Math.* 21, 295-329 (1987).

“Steady state coating flows inside a rotating horizontal cylinder,” *J. Fluid Mech.* 190, 321-342 (1988).

“Convection effects and the stability of hydrogen flame bubbles,” with J. Buckmaster and S., *Lect. Notes in Phys* 299, 112-120 (1988).

“Leakage losses from a hydraulic fracture and fracture propagation,” with C. Gustafson, *Phys. Fluids*. 31, 3180-3187 (1988).

“An asymptotic analysis of cold sheet rolling,” with R.P. Smet, *J. Appl. Mech.* 56, 33-39 (1989).

“Steady-state coating flows in rotational molding,” in *Proc. of the First Pan American Congress of Applied Mechanics*, 336-339 (1989).

“Downstream boundary conditions in a natural convection problem,” with S. Weeratunga and J. Buckmaster, in *Proceeding of the First Pan American Congress of Applied Mechanics*, 384-387 (1989).

“A natural convection problem arising from the study of flame-bubbles,” with S. Weeratunga and J. Buckmaster, *Appl. Mech. Rev.*, 42, Part 2, 5283-(1989).

“A flame-bubble analogue and its stability,” with S. Weeratunga and J. Buckmaster, *Combustion and Flame*, 79, 100-109 (1990).

“Coating flow stability in rotational molding,” in *Engineering Science, Fluid Mechanics*, World Scientific Publishing Co., ed. G. T. Yates 435-449 (1990).

“Shape forming and lateral spread in sheet rolling” *Inter. J. of Mech. Sci.* 33, 449-469 (1991).

“Transverse deformation and spread in sheet rolling,” *Proc. of the 1992 NSF Design and Manufacturing Systems Conf.*, Soc. of Manufacturing Engineers, 97-101, (1992).

“Spread in sheet rolling: A comparison using experiments, analytical solutions and numerical techniques,” with T.L. Zaharoff and M.E. Karabin, *Inter. J. of Mech. Sci.*, 34, 435-442 (1992).

“An asymptotic formulation of shear effects in two dimensional rolling,” with R. E. Smelser, *J. Materials Proc. Tech.* 34, 311-318 (1992).

“A thermo-mechanical theory for sheet forming,” *J. Materials Proc. & Manuf. Sci.* 1, 169-180 (1992).

“A comparison of asymptotic and numerical rolling models for quasi-three dimensional problems,” with M.E. Karabin, *Inter. J. of Mech. Sci.* 35, 425-439 (1993).

“Chatter dynamics in sheet rolling,” *Proc. of the 1993 NSF Design and Manufacturing Systems Conf., Soc. of Manufacturing Engineers*, 135-144, (1993).

“Gravity-driven reactive coating flow down an inclined plane,” with Quan Qi, *AIChE Journal* 40, 2-10 (1994).

“The effect of friction and inelastic deformation on chatter in sheet rolling,” *Proc. Roy. Soc. A* 445,479-499 (1994).

“Chatter dynamics in sheet rolling,” with Quan Qi, *Inter. J. of Mech. Sci.* 36, 617-630 (1994).

“An asymptotic model of slab casting,” *Proc. of the 1994 NSF Design and Manufacturing Systems Conf., Soc. Manuf. Engr.*, 569-571, (1994).

“Modeling a variable displacement pump,” with N. Manring, *ASME Fluid Machinery Forum, FED 195*, 1-10 (1994).

“Swivel torque within a variable-displacement pump,” with N. Manring, *Proc. of 46th National Conference on Fluid Power, Omnipress, Madison, WI*, 13-24 (1994).

“Cold Sheet Rolling with Unequal Friction at the Roll/Sheet Interfaces,” *Manuf. Sci. & Engr.* 1994, *ASME PED-Vol. 68-2*, 619-626 (1994).

“Boundary layer attenuation and acoustic streaming accompanying plane wave propagation in a tube,” with Quan Qi & J. G. Harris, *J. Acoust. Soc.* 97, 1499-1509 (1995).

“The Effect of Friction Conditions on Through-thickness Deformation during Sheet Rolling,” with R.E. Smelser, *Proc. First World Cong. on Intelligent Manuf. Proc. & Sys.*, Vol. I, 282-291 (1995).

“Asymptotic methods in manufacturing process models,” with R. E. Smelser, *57th Annual Meeting of the Pacific Northwest Section of the America Society of Engineering Education*, 1995 April 20-22, Owyhee Plaza Hotel, Boise, Idaho.

“Slab casting - An asymptotic analysis,” with R. E. Smelser, *Simulation of Material Processing: Theory, Methods and Applications*, Shen & Dawson eds., Balkema, Rotterdam, 1141-1146 (1995).

“A coupled thermo-mechanical force model for sheet rolling,” with M.E. Karabin, *Simulation of Material Processing: Theory, Methods and Applications*, Shen & Dawson eds., Balkema, Rotterdam, 947-952 (1995).

“An asymptotic model of slab casting,” with R.E. Smelser, *Inter. J. of Mech. Sci.* 37, 793-814 (1995).

“Modeling and designing a variable-displacement open-loop pump,” with N. D. Manring, *Journal of Dynamic Systems, Measurements, and Control* 118, 267-271 (1996).

“A Rate-Dependent Model for Hot-Rolling,” with H. P. Cherukuri and R. E. Smelser, *Journal of the Idaho Academy of Science*, vol. 32, no. 1/2, June/December, 52 (1996)

“A rate-dependent theory for hot-rolling” with H. P. Cherukuri and R. E. Smelser 1996 NSF Design and Manufacturing Grantees Conference, Albuquerque, NM.

“A thermal/mechanical force model for sheet rolling,” *ASME MD-Vol. 67*, 209-221, (1995).

“A rate-dependent theory for hot-rolling” with H. P. Cherukuri and R. E. Smelser June 12-14, 1996, ASME Mechanics and Materials Conference Johns Hopkins University.

“On the role of interstand tension in the chatter of rolling mills,” *ASME MED-Vol. 4, Manuf. Sci. & Eng.*, 365-376, (1996).

“Modeling methods and die design for extrusion” R.E. Johnson and P. Ulysse, *Proceedings of the 1997 NSF Design and Manufacturing Grantees Conference, Seattle, WA*, 261-262 (1997).

“A rate-dependent theory for hot-rolling” with H. P. Cherukuri and R. E. Smelser, *Int. J. Mech. Sci.* 39, 705-727 (1997).

“An asymptotic multiple-time-scale model of work roll heat transfer” with R. G. Keanini, *ASME HTD-Vol. 347, National Heat Transfer Conf. 9*, 163-169 (1997).

“Chatter dynamics in sheet rolling processes ” R. E. Johnson and H. P. Cherukuri, in *Dynamics and Chaos in Manufacturing Processes*, F. C. Moon, ed., John Wiley & Sons, Inc., Chapter 4, 83-118 (1997).

“Optimal orifice-geometry for a hydraulic pressure-reducing valve,” N. D. Manring and R. E. Johnson, *Journal of Dynamic Systems, Measurements, and Control* 119, 467-473 (1997).

“A study of the effect of the process variables in unsymmetrical single-hole and multi-hole extrusion processes,” P. Ulysse and R. E. Johnson, *J. Materials Proc. Tech.*, 73, 213-225 (1998).

“An asymptotic model of work roll heat transfer in strip rolling,” R. E. Johnson and R. Keanini, *Int. J. Heat & Mass Transf.* 41, 871-879 (1998).

“Vertical continuous casting of bars” R.E. Johnson and H. Cherukuri, *Proceedings of the 1998 NSF Design and Manufacturing Grantees Conference, Monterrey Mexico, Jan. 5-8, 1998*, 471-472 (1998).

“Vertical continuous casting of bars” R.E. Johnson and H. Cherukuri, *Proc. Royal Soc. A* 455, 227-244 (1999).

“A die design model for thin section extrusions”, Patrick Ulysse and R. E. Johnson, *Inter. J. of Mech. Sci.*, 41, 1067-1088 (1999)

“Modelling vertical continuous casting with temperature dependent material properties,” H. Cherukuri and R. E. Johnson, *Inter. J. of Mech. Sci.*, 43, 1243-1257 (2001).

“The impact of linear deformations on stationary hydrostatic thrust bearings,” N. D. Manring, R. E. Johnson, and H. Cherukuri, *J. Tribology*, 124, 874-877 (2002).

“Sensitivity studies for the shallow-pocket geometry of a hydrostatic thrust bearing,” R.E. Johnson and N. D. Manring, *Proceedings of the IMECE 2003, Washington, D.C., Nov. 15-21, 2003*.

“Sensitivity studies for the shallow-pocket geometry of a hydrostatic thrust bearing,” R. E. Johnson and N. D. Manring, Proceedings of the IMECE 2003 (no. 43265), Mechanical Engineering Congress, Washington, D.C., November 15–21, 2003.

“Influence of geometry and deformation on the performance of profiled hydrostatic thrust bearings,” J. Feng, H. Cherukuri, R. E. Johnson and N. D. Manring, Proceedings of the IMECE 2003 (no. 43271), Mechanical Engineering Congress, Washington, D.C., November 15–21, 2003.

“Ethics training: A genuine dilemma for engineering educators,” J. Lincourt and R. Johnson, *Sci. & Engr. Ethics*, 10, 353-358 (2004).

“Translating radial thrust bearings,” R. E. Johnson and N. D. Manring, *J. Fluid Mech.*, 530, 197-212 (2005).

“Pressure Measurements For Translating Hydrostatic Thrust Bearings,” A. B. Crabtree, N. D. Manring and R. E. Johnson, *Inter. J. of Fluid Power*, 6(3),19-24 (2005).

“The Engineering Leadership Academy: Enhancing the Undergraduate Educational Experience,” K. E. Franco and R. E. Johnson, 9th International Conference on Engineering Education, San Juan, PR, July 23 – 28, 2006.

Bulletins and Reports

“An asymptotic formulation of shear effects in 2D sheet rolling,” Alcoa Fabricating Technology Report, June 26, 1991.

“Transverse deformation and spread behavior of wide sheets,” Alcoa Fabricating Technology Report, July 26, 1991.

“A preliminary asymptotic first-order model for belt casting,” with R.E. Smelser, Alcoa Fabricating Technology Report, July 17, 1991.

“Examples of shear effects in 2D sheet rolling,” Alcoa Fabricating Technology Report, August 13, 1991.

“The effect of rate sensitivity on transverse deformation and spread in sheet rolling,” with M.E. Karabin, Alcoa Fabricating Technology Report, August 21, 1991.

“Spread in sheet rolling: A comparison using experiments, analytical solutions and numerical techniques,” with T.L. Zaharoff and M.E. Karabin, Alcoa Laboratories Report No. 12-91-FRS-008-14, August 1991.

“A comparison of asymptotic and numerical rolling models for quasi-three dimensional problems,” with M.E. Karabin, Alcoa Laboratories Report, 12-92-FRS-008-02 February 1992.

“A thermo-mechanical theory for strand processing,” Alcoa Final Report: Contract TC-914466-TC, December 1991.

“Modeling a variable-displacement pump,” with N. D. Manring, TAM Report No. 713, UILU-ENG-93-6011, June 1993.

“A re-examination of boundary layer attenuation and acoustic streaming accompanying plane wave propagation in a circular tube,” with Q. Qi & J.G. Harris, TAM Report No. 724, UILU-ENG-93-6022, September 1993.

“Resin flows through a porous fiber collection in pultrusion processing,” with Q. Qi, TAM Report No. 739, UILU-ENG-93-6037, December 1993.

“An Analytical and Experimental Study of Thick Gage Rolling,” ALCOA Technical Center Report, ATC 94-12-010, September 22, 1994.

“A Coupled Thermo-Mechanical Force Model for Sheet Rolling,” Final Report - TC916691TC, December 10, 1994.

“Model Predictions for Thick Gage Rolling,” ALCOA Technical Center Report, ATC 95-12-010, September 13, 1995.