

CURRICULUM VITAE

Thomas J. Harris, P.Eng.
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EDUCATION

Degree	University	Department	Year
Ph.D.	McMaster	Chemical Engineering	1980
M.Eng.	McMaster	Chemical Engineering	1977
B.Sc.	Queen's	Chemical Engineering	1975

ACADEMIC AND PROFESSIONAL APPOINTMENTS INCLUDING ACADEMIC ADMINISTRATION

Dates	Rank and Position	Department	Institution
January 1, 2010- June 30, 2018	Vice-Principal (Advancement) & Professor	Office of Advancement	Queen's University
July 1, 1996 Reappointed July 2001-July 2007	Dean & Professor	Faculty of Applied Science	Queen's University
July 1, 1992	Professor and Head of Chemical Engineering Department	Chemical Engineering	Queen's University
July 1, 1986	Associate Professor Queen's National Scholar	Chemical Engineering	Queen's University
April 1984	Senior Engineer	Engineering Services	E.I. Dupont de Nemours, Wilmington DE
July 1983	Technical Supervisor	Process Modelling & Control	Monsanto Chemical Co., Decatur, AL
July 1982	Engineering Specialist	Process Modelling & Control	Monsanto Chemical Co., Decatur, AL
January 1980	Senior Engineer	Process Modelling & Control	Monsanto Chemical Co., Decatur, AL

HONOURS: ACADEMIC, SCHOLARLY AND PROFESSIONAL

2018 – Michael J. Rodden Award (Queen's University Athletics – Distinguished Service)
2007 - Lifetime Member, Alma Mater Society, Queen's University
2007 - Honorary President, Alma Mater Society, Queen's University
2005 - T. Geoffrey Flynn Advancement Champion Award
2005 - D.G. Fisher Award, Systems and Control Division, Canadian Society for Chemical Engineering
2004 - Fellow, Canadian Academy of Engineering (FCAE)
1998 - Fellow, Canadian Society for Chemical Engineering (FCIC)
1992 - Best Paper Award, Canadian Journal of Chemical Engineering (co-author Mr. Lane Desborough)
1992 - Awarded Golden Apple for Excellence in Teaching (in Applied Science)
1986 - Appointed Queen's National Scholar

SIGNIFICANT UNIVERSITY ADMINISTRATIVE DUTIES

2010-2018 - Vice-Principal (Advancement) Queen's University
1996-2007 - Dean, Faculty of Applied Science, appointed July 1, 1996 & Reappointed July 2001
1996-2007 - Ex Officio Member of Queen's University Senate
1996-2007 - Member Advisory Research Council
2005 - Member, Principal's Advisory Task Force on Community Relations
2001-2002 - Member, Principal's Advisory Committee on Budget
2000-2004 - Chief Negotiator, Queen's University
1995 - Senate Subcommittee on Endowment Policy for Chairs
1993 - Principal's Committee on Operating Efficiency
1992-1996 - Department Head, Chemical Engineering

2007-2009 - Chair, Human Mobility Research Centre (HMRC)
1999-2007 – Member, Advisory Board MBA (residential program), Queen's School of Business
1999-2007 - Director, Human Mobility Research Centre (HMRC)
1999-2005 - Director, Centre for Automotive Materials & Manufacturing (CAMM)
2002-2005 - Director, Centre for Water and the Environment (CWE)
2002-2004 - Director, Centre for Advanced Manufacturing of Ceramics and Nanomaterials
2004-2007 - Director, Queen's / RMC Fuel Cell Research Centre

NON-UNIVERSITY COMMITTEES

2009-2018 - Member of the Ontario Research Fund Advisory Board (ORFAB) – Ministerial Appointment
2006-2011 - Director, Management Board, Ontario Centres of Excellence in Energy
1999-2005 - Director, Materials and Manufacturing Ontario (MMO)
2004-2006 - Chair, University Network on Excellence in Nuclear Engineering (UNENE)
2002-2008 - Director, University Network on Excellence in Nuclear Engineering (UNENE)
2004-2005 - Chair, Council of Ontario Deans of Engineering (CODE)
2003-2004 - Vice Chair, Council of Ontario Deans of Engineering (CODE)
2001-2004 - Director, Advanced Materials and Manufacturing Institute (ADMI)
1999-2000 - Chair, Council of Ontario Deans of Engineering (CODE)
1996-2003 - Chair, Publication Committee, Canadian Journal of Chemical Engineering
1992-1994 - NSERC Operating Grant Committee for Chemical Engineering & Metallurgy (GSC -04)
1990-1991 - Founding Chair, Systems and Control Division, Canadian Society for Chemical Engineering
1989-1990 - Chair, Kingston Chapter, Canadian Society for Chemical Engineering

TEACHING ACTIVITIES

Course #	Description	# Students	Year(s)
CHEE 209	Analysis of Process Data	~180 per year	2010-2017
CHEE 420	Laboratory Projects II	6 groups of 3 per year	2010-2018
CHEE 421	Research Project	3 students	2012, 2015,2018
ENCH 417	Research Project	1 student	2015

SCHOLARLY AND PROFESSIONAL ACTIVITIES

Google Scholar Bibliometrics (All)

	All	Since 2013
<u>Citations</u>	4472	1196
<u>h-index</u>	25	15
<u>i10-index</u>	40	18

ARTICLES IN REFEREED JOURNALS * denotes corresponding author, bold is graduate student or undergraduate student

48. Harris, T.J. and **Wei-Yu**, (2012), *Variance decompositions of nonlinear time series using stochastic simulation and sensitivity analysis*, *Statistics and Computing* **22**, pp. 387-396

47. **Wu, S., McLean, K.**, Harris, T.J., and K.B. McAuley*, (2011), *Selection of Optimal Parameter Set Using Estimability Analysis and MSE-based Model-Selection Criterion*, *International Journal of Advanced Mechatronic Systems* **3**, pp. 188-197.

46. **Wu, S.**, McAuley, K.B. and T.J. Harris (2011), *Selection of Simplified Models: II. Development of a Model Selection Criterion Based on Mean-Squared Error*, *Can. J. Chem. Eng.* **89**, pp. 325-336

45. **Wu, S.**, McAuley, K.B. and T.J. Harris* (2011), *Selection of Simplified Models: I. Analysis of Model Selection Criteria using Mean-Squared Error*, *Can. J. Chem. Eng.* **89**, pp. 148-158

44. Harris, T.J.* and **Yuan, H.**, (2010), *Filtering and frequency interpretations of Singular Spectrum Analysis*, *Physica D: Nonlinear Phenomena* **239**, pp.1958-1967

43. Harris, T.J.* and **Wei-Yu** (2010), *Variance Decomposition of Nonlinear Dynamic Stochastic Systems*, *Journal of Process Control* **20**, pp. 195-205.

42. Harris, T.J.* and **Wei-Yu** (2009), *Parameter Uncertainty Effects on Variance-based Sensitivity Analysis*, *Reliability Engineering and System Safety*, **94**, 596-603

41. Harris, T.J.*, *Interpretations of Multivariate Performance Indices (2009)*, *Journal of Process Control*, **19**, pp 701-710

40. **Wu, S.**, Harris, T.J.* and K.B. McAuley (2007), *The Use of Simplified or Misspecified Models*, Canadian Journal of Chemical Engineering **54**, pp. 386-398.
39. Harris, T.J.* and **Wei-Yu** (2007), *Controller Assessment for a Class of Nonlinear Systems*, Journal of Process Control **17**, pp. 607-619
38. **Quinn, S.L.**, Harris, T.J.* and D.W. Bacon (2005), *Measuring Uncertainty in Control-Relevant Statistics*, Journal of Process Control, **15**, pp. 675-690
37. Harris, T.J.* (2004), *Statistical Properties of Quadratic-Type Performance Indices*, Journal of Process Control, **14**, 899-914
36. **Wei-Yu** and T.J. Harris* (2003), *Analysis of Multivariable Controllers Using Markov Chains*, International Journal of Adaptive Control and Signal Processing, **17**, 569-588
35. **Seppala, C.T.**, Harris, T.J*., and D.W. Bacon (2002), *Time Series Methods for Dynamic Analysis of Multiple Controlled Variables*, Journal of Process Control, **12**, pp 257-276
34. **Quinn, S.L.**, Bacon, D.W., and T.J. Harris* (2000), *Notes on Likelihood Intervals and Profiling*, Communications in Statistics **29**, pp. 108-130
33. **Quinn, S.L.**, Bacon, D.W., and T.J. Harris* (1999), *Using Generalized Profiling to Estimate Likelihood Intervals for Model Predictions and Other Functions of Model Parameters*, Canadian Journal of Chemical Engineering, **77**, pp 723-737.
32. Harris, T.J.*, **Seppala, C.T.**, and L.D. Desborough (1999), *A Review of Performance Monitoring and Assessment Techniques for Univariate and Multivariate Control Systems*, Journal of Process Control, **9**, pp 1-17
31. Harris, T.J.*, **Wilkinson, R.**, and J. Davis (1998), *Numerical Inversion of Characteristic Equations with Applications to Quadratic Forms in Normal Variables*, Communications in Statistics: Simulation and Computation, **27**, pp 215-228
30. Harris, T.J.* , **Seppala, C.T.**, **Jofriet, P.J.**, and B.W. Surgenor (1996), *Plant-Wide Feedback Control Performance Assessment Using an Expert-system Framework*, Control Eng. Practice, **4**, pp. 1297-1303
29. **Jofriet, P.**, **Seppala, C.**, Surgenor, B. and T. J. Harris* (1996), *An Expert system For Control Loop Performance*, Pulp & Paper Canada, **97** , pp. 207-211
28. Harris, T.J.* , **Boudreau, T.**, and J.F. MacGregor (1996), *Performance Assessment of Multivariable Feedback Controllers*, Automatica, **32**, pp. 1505-1518
27. **Piette, R.**, Harris, T.J., and P.J. McLellan* (1995), *Graphical Interpretation of Steady State Interaction Measures*, Industrial & Engineering Chemistry Research, **34**, pp. 4436-4450
26. Amphlett, J.C.* , **Baumert, R.M.**, Mann, R.F., **Peppley, B.A.**, Roberge, P.R., and T.J. Harris (1995), *Performance Modeling of the Ballard Mark IV Solid Polymer Electrolyte Fuel Cell, I. Mechanistic Model Development*, J. Electroch. Soc., **142**, pp. 1-8
25. Amphlett, J.C.* , **Baumert, R.M.**, Mann, R.F., **Peppley, B.A.**, Roberge, P.R., and T.J. Harris (1995), *Performance Modeling of the Ballard Mark IV Solid Polymer Electrolyte Fuel Cell, II. Empirical Model Development*, J. Electroch. Soc., **142**, pp. 9-15
24. **Yuet, P.K.**, Harris, T.J., and M.F.A. Goosen* (1995), *Mathematical Modelling of Immobilized Animal Cell Growth*, Biomaterials, Artificial Cells, and Immobilization Biotechnology, **23**, pp. 109-133

23. **Shirt, R.W.**, Harris, T.J.* and D.W. Bacon (1994), *Experimental Design Considerations for Dynamic Considerations*, Ind. Eng. Chem. Res. **33**, pp. 2656-2667
22. **Desborough, L.D.**, and T.J. Harris* (1994), *Control Performance Assessment*, Pulp & Paper Canada **94:11**, pp. 441-443
23. McAuley, K.B., **Talbot, J.P.**, and T.J. Harris*, (1994), *A Comparison of Two-Phase and Well-Mixed Models for Fluidized-Bed Polyethylene Reactors*, Chem. Eng. Sci. **49**, pp. 2035-2045.
20. **Desborough, L.D.** and T.J. Harris* (1993), *Performance Assessment Measures for Univariate Feedforward/Feedback Control*, Canadian Journal of Chemical Engineering, **71**, 605-616
19. **Berg, D.** and T.J. Harris* (1993), *Characterization of Multicomponent Diffusion Effects in MTBE Synthesis*, I&EC Research, **32**, 2147-2158
18. Harris, T.J., and J.F. MacGregor* (1993), *The Exponentially Weighted Moving Variance*, Journal of Quality Technology, **25** 106-118
17. **Desborough, L.** and T.J. Harris* (1992), *Normalized Performance Measures for Feedback Controllers*, Canadian Journal of Chemical Engineering, **70**, pp. 1186-1197
16. Harris, T.J.* and J.H. Davis (1992), *An Iterative Method for Matrix Spectral Factorization*, SIAM Journal of Statistical and Scientific Computing, **13**, pp. 531-540
15. Harris, T.J.* (1992), *One Step Optimal Controllers for Nonsymmetric and Nonquadratic Cost Functions*, Technometrics, **34**, pp. 298-306
14. **Foley, M.** and T.J. Harris* (1992), *Performance and Structure of H_{∞} Controllers*, Journal of Optimal Control: Applications & Methods, **13**, pp. 1-28
13. Harris, T.J.* and W.H. Ross (1991), *Statistical Process Control Procedures for Correlated Observations*, Canadian Journal of Chemical Engineering, **69**, pp. 48-57
12. **Kwok, W.Y.**, Kiparissides, C., **Yuet, P.**, Harris, T.J. and M.F.A. Goosen* (1991), *Mathematical Modelling of Protein Diffusion in Microcapsules: A Comparison with Experimental Results*, Canadian Journal of Chemical Engineering, **69**, pp. 361-372
11. **McLellan, P.J.**, Harris, T.J.* and D.W. Bacon (1990), *Error Trajectory Descriptions of Nonlinear Controller Designs*, Chemical Engineering Science, **45**, 3017-3034
10. Harris, T.J.* and **P.J. McLellan** (1990), *GMC: A Case Study Revisited*, Canadian Journal of Chemical Engineering, **68**, 1066-1070
9. MacGregor, J.F. and T.J. Harris (1990), *Discussant*, Technometrics, **32**, 23-26
8. Harris, T.J.* (1989), *Assessment of Control Loop Performance*, Canadian Journal of Chemical Engineering, **67**, 856-861
7. **Kozub, D.**, MacGregor, J.F.* and T.J. Harris (1989), *Optimal IMC Inverses: Design and Robustness Considerations*, Chemical Engineering Science, **44**, 2121-2136
6. Harris, T.J.*, MacGregor, J.F., (1987), *Design of Multivariable Linear Quadratic Controllers Using Transfer Functions*, AIChE Journal, **33**, 1481-1497
5. Harris, T.J.*, and B. Tyreus, (1987), Comments on 'Internal Model Control 4: PID Controller Design Using Transfer Functions', Industrial and Engineering Chemistry, **26**, 2161-2162.

4. MacGregor*, J.F., Harris, T.J., and J.D. Wright, (1984), *Duality Between the Control of Processes Subject to Randomly Occurring Deterministic Disturbances and ARIMA Stochastic Disturbances*, *Technometrics*, **26**, 389-397.
3. MacGregor, J.F*., Harris, T.J., and J.D. Wright, (1982), *An Overview of Discrete Stochastic Controllers: Generalized PID Algorithms with Dead-Time Compensation*, *Canadian Journal of Chemical Engineering*, **60**, 425-432.
2. MacGregor, J.F*., Harris, T.J., and J.D. Wright, (1980), *Self-Tuning and Adaptive Controllers: An Application of Catalytic Reactor Control*, *Technometrics*, **22**, 153-164
1. MacGregor, J.F.* , Harris, T.J., and J.D. Wright, (1980), *Optimal Sensor Location with an Application to a Packed Bed Tubular Reactor*, *AIChE J.*, 26, 910

Submitted or In Review:

CHAPTERS IN BOOKS

4. Harris, T.J. (2015), *Linear Stochastic Control with Transfer Functions*, in Wiley StatsRef: Statistics Reference Online (9 pages)

3. Harris, T.J. and Seppala, C.T., (2002), *Recent Developments in Controller Performance Monitoring and Assessment Techniques*, in *Chemical Process Control-VI: Assessment and New Directions for Research*, AIChE Symposium Series # 326: Vol 98. Editors, J.B. Rawlings, B.A. Ogunnaike and J.W. Eaton, pp208-222.
2. Harris, T.J., (1994), *The Implications of Quality Programs on Chemical Engineering Control & Design*, in *Foundations of Computer Aided Process Operations*, Elsevier (a conference held every 5 years) 25 pages
1. Yuet, P.K., Kwok, W., Harris, T.J., and Goosen, M.F.A. (1993), *Mathematical Modelling of Protein Diffusion and Cell Growth in Microcapsules*, Chapter 5 in: Fundamentals of Animal Cell Encapsulation and Immobilization, M.F.A. Goosen (Ed.), CRC Press, Boca Raton, 79-112

PATENTS

Liquid Phase Preparation of (meth)-Acrylate from Alpha-olefin, U.S. Patent 5,670,702. Issued 23 September 1997.

PAPERS IN CONFERENCE PROCEEDING

Dynamic Analysis of Variance Methods for Multivariate Control System Data, 1st International Symposium on Industrial Statistics (Understanding Variation: A Key to Successful Quality Improvement), Linköping, Sweden, August 19-21, 1999

PAPERS IN REFEREED CONFERENCE PROCEEDING

5. Wei-Yu*, Wilson, D., Harris, T.J. and B. Young, *Control Performance Assessment for Hammerstein-Wiener Models*, 9th International Symposium on Dynamics and Control of Process Systems (DYCOPS 2010), Leuven, Belgium, July 5-7, 2010

4. Wei-Yu*, Wilson, D., Young, B. and Harris, T.J., *Variance Decompositions of Nonlinear Systems*, 7th IEEE International Conference on Control & Automation , Christchurch, New Zealand, December, 2009
3. Harris, T.J. and **C.T. Seppala**,(2001), Recent Developments in Controller Performance Monitoring and Assessment Techniques, Chemical Process Control VI, January 2001, Tucson, Arizona
2. Desborough, L.D. and T.J. Harris (1992), *Control Performance Assessment*, The Dream versus Reality; Pulp and Paper Conference, Whistler, B.C., 69-74
1. Harris, T.J. (1993), *Towards a Paradigm for Process Control - An Overview of the Problems and Issues*, American Statistical Association, Proceedings of the Section on Quality and Productivity, 15-24

TECHNICAL REPORTS

2. Jofriet, P., Seppala, C.T. Surgenor, B.W. , Harris, T.J., and M. Harvey, An Expert System for Control Loop Performance Analysis, Final Report for NSERC CRD project, (2 /95) 54 pages
1. Jackson, B.W. and T.J. Harris, (1994), *Catalytic Distillation Summary: Research Report NOVA Petrochemicals (6/94)* 48 pages

Many confidential reports with Monsanto Chemical Company & E.I. Dupont de Nemours

ABSTRACTS and/or PAPERS read

Golfar, B., McLellan, P.J. and T.J. Harris, "Degrees of Freedom in Multi-Response Estimation", *64th Canadian Chemical Engineering Conference, Fredericton, October 2013*

Golfar, B., McLellan, P.J. and T.J. Harris, "Parameter Inference in Nonlinear Multiresponse Models Using Profiling", *63rd Canadian Chemical Engineering Conference, Fredericton, October 2013*

Golfar, B., McLellan, P.J. and T.J. Harris, Statistical Profiling for Multiresponse Models, *62nd Canadian Chemical Engineering Conference, Vancouver, October 2012*

Wu, S., K.B. McAuley and T.J. Harris, "*Ranking Parameter Estimability Using Mean Squared Error*", *8th World Conference on Chemical Engineering, Montreal, August 23-27th, 2009*

Wu, S., K.B. McAuley and T.J. Harris, "*An Analysis of Model Selection Criteria in the Case of Underfitting*", *poster presented at the Second Canada-France Congress, Montreal, June 2008.*

Harris, T. J., K. B. McAuley and S. Wu, *Not so Simple! The Statistical Analysis of Simplified and Misspecified Models*", *58th Canadian Chemical Engineering Conference, Edmonton, Oct. 2007. Invited Talk.*

Wu, S., Harris, T.J., and K.B. McAuley, *The Use of Simplified Modes in Linear Case*, CMS-MITACS Joint Conference, Winnipeg, MB , June 2007, Paper 58.

A. Soon, T.J. Harris and P.J. McLellan, *A Generalized Profiling Approach to Inference Analysis in System Identification*, Canadian Chem. Eng. Conf., Sherbrooke, October 2006.

Wu, S., Harris, T.J., and K.B. McAuley, *When Simplified Models are Better than the True Model*, 55th Canadian Chemical Engineering Conference, Toronto (2005), Paper 487

Wei Yu, and T.J. Harris, *Parameter Uncertainty Effects on Input Sensitivity Analysis*, 54th Canadian Society for Chemical Engineering Conference, Paper #250, Calgary (2004)

- Harris, T.J., and Wei-Yu, *Assessing Parameter Uncertainty Using Markov Chain Monte Carlo Methods*, 53rd Canadian Chemical Engineering Conference, Hamilton Ontario, Paper 273, October 28-30 (2003)
- Uche, I., and T.J. Harris, *Quantifying Model Uncertainty Using Model Error Modelling*, 52nd Canadian Chemical Engineering Conference, Vancouver (2002),
- Wei-Yu, and T.J. Harris, *Analysis of Multivariable Controllers Using Markov Chains*, 52nd Canadian Chemical Engineering Conference, Vancouver (2002)
- Liew, S.C.N., and T.J. Harris, *Estimation of Cointegrated Relationships in Process Data*, 50th Canadian Chemical Engineering Conference, Montreal (2000)
- Seppala, C.T., Harris, T.J., and D.W. Bacon, *Introduction to the Role of Cointegration In the Analysis of Control System Data*, Session #71, 49th Canadian Chemical Engineering Conference, Saskatoon (1999)
- Miller, N., McLellan, P.J., and T.J. Harris, *Performance Assessment Using Nonlinear Time Series Models*, Session #64, 48th Canadian Chemical Engineering Conference, London, Ontario, (1998)
- Quinn, S.L., Bacon, D.W., and T.J. Harris, *How Big is N for Time Series Models*, Session #64, 48th Canadian Chemical Engineering Conference, London, Ontario, (1998)
- Boudreau, F., MacGregor, F.J., and T.J. Harris, *Relation Between Delay Structure and Performance of Multivariable Minimum Variance Controllers*, AIChE Winter Meeting, Chicago, IL Paper 149b (1996)
- T.J. Harris, F. Boudreau and J.F. MacGregor, *Performance Assessment of Multivariable Feedback Controllers*, #28, 45th Canadian Chemical Engineering Conference, Quebec City (1995)
- T.J. Harris, *Input Signal Design for Identification*, 43rd Canadian Chemical Engineering Conference, Ottawa, Ontario (1993)
- Berg, D. and T.J. Harris, *Effect of Mass Transport Resistances of the Synthesis of MTBE in Catalytic Distillation Environment*, 42nd Canadian Chemical Engineering Conference, Toronto, Ontario (1992)
- Desborough, L.D. and T.J. Harris, *Extension to Statistical Methods for Control Loop Assessment*, ACC, Chicago, Illinois (1992)
- Amphlett, J.C., Harris, T.J., Mann, R.F., Peppley, B.A. and P.R. Roberge, *Computer Simulation of a Catalytic Methanol Reforming Hydrogen Generator for a Portable Fuel Cell Power Plant*, 41st Canadian Chemical Engineering Conference, Vancouver, B.C., October (1991)
- Foley, M. and T.J. Harris, *Performance and Structure of H_{∞} Controllers*, 41st Canadian Chemical Engineering Conference, Vancouver, BC, October (1991)
- Fogal, D. and T.J. Harris, *Detection of Nonlinearities in Process Operation Data*, 41st Canadian Chemical Engineering Conference, Vancouver, BC, October (1991)
- McLellan, P.J., Harris, T.J. and D.W. Bacon, *Disturbance Decoupling of Staged Chemical Processes*, ACC, San Diego, CA (1990)
- Harris, T.J. and P.J. McLellan, *Deadtime and Disturbance Induced Performance Limitations in Multivariable Control*, 40th Canadian Chemical Engineering Conference, Halifax, NS, July (1990)
- McLellan, J.P., Harris, T.J. and D.W. Bacon, *The Nonlinear Inversion Problem in Process Control*, 39th Canadian Chemical Engineering Conference, Hamilton, Ontario (1989)

Harris, T.J., *One Step Optimal Controllers for Nonsymmetric and Nonquadratic Cost Functions*, 39th Canadian Chemical Engineering Conference, Hamilton, Ontario (1989)

Koung, C.W. and T.J. Harris, *Sensitivity of the Relative Gain Array*, 39th Canadian Chemical Engineering Conference, Hamilton, Ontario (1989)

Shirt, R.W., Harris, T.J. and D.W. Bacon, *Selection of Perturbation Signals for Identification of Dynamic Behavior*, 39th Canadian Chemical Engineering Conference, Hamilton, Ontario (1989)

Yuet, P.K., Harris, T.J. and M.F.A. Goosen, *Mathematical Modelling of Animal Cell Growth in Microcapsules*, 39th Canadian Chemical Engineering Conference, Hamilton, Ontario (1989)

Jackson, B.W. and T.J. Harris, *Creative and Innovative Problem Solving Using Flowsheet Simulators*, 39th Canadian Chemical Engineering Conference, Hamilton, Ontario (1989)

POPULAR ARTICLES

Jackson, B.W. and T.J. Harris, *Creative and Innovative Problem Solving Using Flowsheet Simulators*, Canadian Chemical News, pp. 19-21 (June 1990)

INVITED SPEAKER:

An Analysis of Model Selection Criteria (MSC) in the Case of Underfitting (with S. Wu & K.B. McAuley), MITACS 2009, Fredericton NB, June 2009

Inference in Nonlinear Regression: Progress and Challenges, Dept of Statistics, University of Toronto, January, 2008.

Not So Simple! Analyzing Simplified & Misspecified Models, 57th Canadian Chemical Engineering Conference, Edmonton, Alberta, 2007. Keynote Presentation

Interpretations and Analysis of Performance Bounds for Multivariable Systems, 55th Canadian Chemical Engineering Conference, Toronto Canada, October 16-19th 2005, Paper 297. D.G. Fisher Award Lecture

Observations & Thoughts on Controller Assessment & Performance Monitoring, EXXonMobil ACAP/RTO Meeting, May 2, 2005, Toronto

Observations & Thoughts on Controller Assessment & Performance Monitoring, Control Systems 2004, Quebec City (2004)

Recent Developments in Controller Performance Monitoring and Assessment Techniques, Chemical Process Control VI, January 2001, Tucson, Arizona (with C.T. Seppala)

Dynamic Analysis of Variance Methods for Multivariate Control System Data, 1st International Symposium on Industrial Statistics (Understanding Variation: A Key to Successful Quality Improvement), Linköping, Sweden, August 19-21, 1999

Current Status & Research Needs in Process Control Diagnostics, McMaster University Advanced Process Control Consortium, Hamilton, ON, Spring 1998

A Review of Performance Monitoring and Assessment Techniques for Univariate and Multivariate Control Systems, ADCHEM '97, Banff, Alberta

Harris, T.J., *Performance Assessment And Process Monitoring Techniques For Univariate Control Systems*, AspenWorld Conference, Boston, MA, October 1997

Statistical Methods for Analysis of Engineering Control Systems, First Spring Research Conference on Statistics in Industry & Technology, Greensborough, North Carolina, June 1994

Statistical Methods for Analysis of Process Control Systems, American Society for Quality Control (ASQC) Fall Technical Conference, Rochester, N.Y., October 1993

Quality Issues in Process Design and Process Operations, Foundations of Computer Aided Operations (FOCAPO), (A conference sponsored by AIChE held every 5 years), Gunneston, CO, July 1993

Process Monitoring - Discussant Gordon Research Conference on Statistics in Chemistry and Chemical Engineering, August 1993

Towards a Paradigm for Process Control: An Overview of the Problems and Issues, American Statistical Association, Boston, MA, August 1992

Multivariable Control Applied to Photographic Film Production - Discussant, Gordon Research Conference, August 1990

Interface 90 - Interfaces between Computing Science and Statistics, On-line Statistics for Process Control Analysis, East Lansing, Michigan, May 1990

Discussant, Gordon Research Conference on Statistics in Chemistry and Chemical Engineering, New Hampton, NH, August 1990

THESIS SUPERVISED

32. Yuan, Hui, *Process Analysis and Performance Assessment for Sheet Forming Processes*, (co-supervised with P.J. McLellan), Ph.D. (2015)

31. Golfar, B., *Parameter Inference and Estimability Analysis for Nonlinear Multi-Response Systems by Means of Profiling*, (co-supervised with P.J. McLellan), Ph.D. (2014)

30. Liba, M.J., *Measurement System Design for Chemical Processes*, (co-supervised with M. Guay), M.Sc. (2011)

29. Shaohua Wu, *Model Error Modelling Methods in Chemical Engineering*, (co-supervised with K.B. McAuley), Ph.D. (2009)

28. Wei Yu, *Variance Analysis for Nonlinear Systems*, Ph.D. (2007)

27. Wong, John, *Fault Detection Application of Alternative Mean-Centering and Pattern Matching Techniques in Non-Repeated Multivariate Time-Series Data Trajectories* (co-supervised with P.J. McLellan), M.Sc. (2006)

26. Wu, S., *Two-Step Estimation in Linear Regression* (co-supervised with K.B. McAuley), M.Sc. (2005).

25. Soon, A., *A Generalized Profiling Approach to Inference Analysis in System Identification* (co-supervised with P.J. McLellan), M.Sc. (2005)

24. Breck, C., *Fault Detection for an Aircraft Environment Control system using Dynamic Principal Component Analysis*, (co-supervised with P.J. McLellan), M.Sc. (2005)
23. Uche, Ikenna, *An Analysis of Model Error Modelling*, M.Sc. (2003)
22. Wei-Yu, *Applications of Time Series Count Data for Process Analysis*, M.Sc. (2002)
21. Liew, Chen Nei, *Estimation of Cointegrating Relationships in Process Data*, M.Sc. (2002)
20. Patton, M., *Describing Uncertainty in State Estimates* (co-supervised with P.J. McLellan), M.Sc. (2000)
19. Seppala, C.T., *Dynamic Analysis of Variance Methods for Monitoring Control System Performance*, (co-supervised with D.W. Bacon), Ph.D. (1999)
18. Quinn, S.L., *Measuring and Predicting Uncertainty in Control-Relevant Statistics*, (co-supervised with D.W. Bacon), Ph.D. (1999)
17. Laflamme, J., *Dynamic model of the solid-state polymerization of nylon 6,6*, (co-supervised with P.J. McLellan), M.Sc. (1997)
16. Neagu, L. *Production of BHP by Catalytic Distillation*, (co-supervised with B.W. Jackson), M.Sc. (1997)
15. Logan., G.A., *Synthesis of dimethyl carbonate with CuC12*, (co-supervised with B.W. Jackson), M.Sc. (1997)
14. Zagrobelny, J., *System Identification Techniques for a Rolling Mill Gauge System*, (co-supervised with M. Bayoumi), M.Sc. (1996)
13. Rose, J., *Reactive Distillation*, (co-supervised with B. Jackson), M.Sc. (1994)
12. Piette, R., *Geometric Interpretation of Interaction Measures*, (co-supervised with P.J. McLellan), M.Sc. (1994)
11. Berg, David, *Mass Transfer Resistances in MTBE Synthesis*, Ph.D. (1994)
10. Baumert, R.M., *Performance Modelling of the Ballard Mark IV Solid Polymer Electrolyte Fuel Cell*, (co-supervised with R.F. Mann, RMC), M.Sc. (1993)
9. Foley, Michael, *H-infinity Methods for Chemical Process Control*, Ph.D. (1993)
8. Peppley, B., *Catalytic Steam Reforming of Methanol Using a Commercial Low Temperature Shift Catalyst*, (co-supervised with R.F. Mann, RMC), M.Sc. (1993)
7. Kuye, M.A., *An Evaluation of Microbial Biomass Estimation Techniques in Dynamic Fermentation Processes and Their Impact on Modelling*, (co-supervised with A.J. Daugulis), M.Sc.(1992)
6. Desborough, L., *Performance Assessment Measures for Univariate Control*, M.Sc. (1992)
5. McLellan, P.J., *Nonlinear Error Trajectory Controllers for Output Tracking and Disturbance Rejection*, (co-supervised with D.W. Bacon), Ph.D. (1990)
4. Yuet, P.K., *Mathematical Modelling of Animal Cell Growth in Microcapsules*, (co-supervised with M.F.A. Goosen), M.Sc. (1990)

CONTRIBUTIONS TO THE TRAINING OF HIGHLY QUALIFIED PERSONAL

Completed: Masters: co-supervised (13) : sole-supervision (9)
Ph.D. co-supervised (5) : sole-supervision (4)

GRANTS & CONTRACTS

Grants:

Year	Individual or Group	Grantor	Purpose	Amount
2009	Individual	ARC (Queen's)	Research Support	\$10,000
2009	Group(2)	MITACS/OCE	Research Support	\$25,000
2009	Group(2)	Novelis MITACS	Research Support (Applied)	\$50,000 pa for 3 years
2009	Individual	NSERC	Discovery (Applied)	\$65,000 pa for 5 years
2008	Group (3)	MITACS	Research Support	\$ 30,000
2008	Individual	NSERC	Discovery	\$ 40,100
2007	Individual	NSERC	Discovery	\$ 40,100
2007	Group (3)	MITACS	Research Support	\$ 30,000
2006	Individual	NSERC	Discovery	\$ 40,100
2005	Individual	NSERC	Discovery	\$ 40,100
2004	Individual	NSERC	Discovery	\$ 40,100
2003	Individual	NSERC	Operating	\$ 40,200
2002	Individual	NSERC	Operating	\$ 40,200
2001	Individual	NSERC	Operating	\$ 40,200
2000	Individual	NSERC	Operating	\$ 40,200
2000	Group (2)	Equilon	Research Support	\$ 20,000 (US)
1999	Group (4)	NSERC	Equipment	\$ 55,000
1999	Individual	NSERC	Operating	\$ 43,000
1999	Group (2)	AlliedSignal Aerospace	Graduate Support	\$ 25,000
1999	Group (2)	Equilon	Research Support	\$ 15,000 (US)
1998	Individual	NSERC	Operating	\$ 43,000
1998	Group (2)	Equilon	Research Support	\$ 15,000 (US)
1997	Individual	NSERC	Operating	\$ 37,000
1997	Group (2)	Equilon	Research Support	\$ 10,000 (US)
1997	Individual	NSERC	Centres of Excellence	\$ 20,000
1997	Group (2)	NSERC	Strategic	\$ 81,000
1996	Individual	NSERC	Operating	\$ 37,000

Year	Individual or Group	Grantor	Purpose	Amount
1996	Individual	Shell Development	Research Support	\$ 15,000 (US)
1996	Individual	NSERC	Centres of Excellence	\$ 26,000
1996	Group (2)	NSERC	Strategic	\$ 81,000
1995	Individual	NSERC	Operating	\$ 32,000
1995	Group (2)	DuPont Canada	Graduate support	\$ 11,500
1995	Individual	Shell Development	Research Support	\$ 15,000 (US)
1995	Individual	NSERC	Centres of Excellence	\$ 26,000
1995	Group(2)	NSERC	Strategic	\$ 81,000
1994	Individual	NSERC	Operating	\$ 32,000
1994	Group (2)	NSERC	CRD	\$ 96,000
1994	Individual	NSERC	Centres of Excellence	\$ 26,000
1993	Individual	NSERC	Operating	\$ 32,000
1993	Individual	Shell Development	Research Support	\$ 20,000 (US)
1991	Individual	Imperial Oil	Research Support	\$ 10,000
1989-1992	Individual	NSERC	Operating	\$ 24,200
1989	Individual	DuPont Canada	Research	\$ 19,000

Contracts:

Year	Individual or Group	Grantor	Purpose	Amount
1995	Group(2)	DuPont	Contract	\$ 12,000
1993	Group(2)	URIF	Contract	\$ 120,040
1993	Group(2)	NOVACOR	Contract	\$ 110,000
1992	Group(2)	URIF	Contract	\$ 70,000
1992	Group(2)	NOVACOR	Contract	\$ 70,000
1992	Group(2)	NSERC	IOR	\$ 55,000
1991	Group(2)	NOVACOR	Contract	\$ 55,000
1991	Group(2)	URIF	Contract	\$ 50,000