#### CURRICULUM VITAE

Suong V. Hoa

Department of Mechanical and Industrial Engineering
Concordia University
1515 Ste. Catherine West # 4-145
Montreal, Quebec, Canada H3G 1M8
Tel.: (514) 848-2424 # 3139 E-mail: hoasuon@alcor.concordia.ca

**STATUS** Professor

Department of Mechanical and Industrial Engineering

Tenured, Full-Time

Concordia University Research Fellow, 2001

Concordia University Research Chair in Materials and Composites (2001-2015)

**DEGREES** Ph.D., Mechanical Engineering, University of Toronto

Toronto, Ontario, 1976

M.A.Sc., Mechanical Engineering, University of Toronto

Toronto, Ontario, 1973

B.Sc., Mechanical Engineering, California State University

San Luis Obispo, 1971

# **DATE OF APPOINTMENT TO CONCORDIA UNIVERSITY** September 1977

## POSITION HELD AT CONCORDIA UNIVERSITY

June 2003-May 2007 Chair, Department of Mechanical and Industrial Engineering

July 1994-June 2000 Chair, Department of Mechanical Engineering May 1993- to date Director, Concordia Centre for Composites

1986-to date Professor of Mechanical Engineering

1981 - May 1986 Associate Professor of Mechanical Engineering1977 - 1981 Assistant Professor of Mechanical Engineering

## POSITION AT OTHER UNIVERSITIES

1995 - 2000 Adjunct Professor, École de Technologie Supérieure, Quebec 1990-1995 Honorary Professor, Shanghai University of Technology

## PROFESSIONAL REGISTRATION(S)

1981 - to date Ordre des ingénieurs du Québec

1976 - 1983 Association of Professional Engineers in Ontario

# PROFESSIONAL & SCIENTIFIC SOCIETY MEMBERSHIP(S)

Member, Canadian Association for Composite Structures and Materials (1988-date)

Member, American Society of Mechanical Engineers (1978-date)

Member, Society for Advancement of Materials and Process Engineering (1990-date)

Member, Canadian Society for Mechanical Engineering (1977-1987) & (1995-date)

Member, American Society for Composites (2002-date)

## **SCHOLARLY & PROFESSIONAL ACTIVITIES**

- 1. Session Vice-Chairman and Chairman, Information and Local Arrangements, Fifth World Congress on the Theory of Machines and Mechanisms, 1979.
- 2. Session Co-Chairman, Fourth International Conference on Composite Materials, Tokyo, Japan, *October 1982*.
- 3. Social Program Chairman, Tenth World Congress of the International Association of Mathematics and Computer Simulation, Montreal, 1982.
- 4. Referee for the NSERC Strategic Grant application, 1984.
- 5. Member of the organizing committee, 7th International Conference on the Strength of Metals, Montreal, 1985.
- 6. Co-Chairman, 2nd International Symposium on Acoustic Emission from Reinforced Plastics, Montreal, *July 1986*.
- 7. Co-Chairman, 1st International Conference on Analytical and Testing Methodologies for Design with Advanced Materials, ATMAM '87, Montreal, *August 1987*.
- 8. Co-Chairman, ATMAM '89, Montreal, August 1989.
- 9. Member of International Advisory Committee, 3rd International Conference on Acoustic Emission from Composite Materials, Paris, *July 17-21, 1989*.
- 10. Chairman, First Canadian International Conference and Exhibition on Composites, Montreal, Canada, *September 4-6, 1991*.
- 11. Member, International Advisory Committee, Computer Aided Design in Composite Material Technology III, IV, V, VI, VII, 1992, 1994, 1996, 1998, 2000.
- 12. Member, International Advisory Committee, 4th International Conference on Acoustic Emission from Reinforced Composites, Seattle, *July 1992*.
- 13. Member, International Advisory Committee, 2nd International Conference on Composite Materials and Structures, Beijing, China, *August 1992*.
- 14. Member, International Advisory Committee, 9th International Conference on Composite Materials (ICCM-9), Madrid, Spain, *July 1993*.
- 15. Co-Chairman, Second Canadian International Conference on Composite Materials (CANCOM 93), Ottawa, Canada, *September 1993*.

16. Co-Chairman, International Conference on Design and Manufacturing Using Composites (ATMAM 94), Montreal, Canada, *August 1994*.

- 17. Member of FCAR grant selection committee for student applications, 1994.
- 18. Vice-Chairman, International Conference on Composite Materials (ICCM-10), Vancouver, Canada, *August 1995*.
- 19. Member of FCAR grant selection committee, 1993-1996.
- 20. Co-Chairman, Canada-Japan Workshop on Composites, Kyoto, Japan, August 96.
- 21. Member of International Scientific Advisory Committee, International Conference on Advanced Materials, Beijing, China, *August 1996*.
- 22. Member of International Scientific Committee, 5th International Conference on Computer Aided Technology in Composites, Italy, 1996.
- 23. Member of NSERC grant selection committee, GSC 13 (Mechanical Engineering), 1994-1997.
- 24. Co-Chair, Second Canada-Japan workshop on Composites, Concordia University, Montreal, Canada, *August 1998*.
- 25. Co-Chair, 6<sup>th</sup> International Conference on Computer Methods in Composite Materials Technology, CADCOMP 98, Montreal, Canada, *August 1998*.
- 26. Member of Scientific Advisory Committee, International Conference on Testing of Materials, Hong Kong University of Science and Technology, *October 1998*.
- 27. Member of International Scientific Advisory committee, CIMTEC 98.
- 28. Member of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section X Committee, 1983-1993.
- 29. Member, Executive Committee, International Conference on Composite Materials, 1995-2001.
- 30. Member of NSERC Industrial Chair Evaluation for the Industrial Chair on Composites at University of Alberta, 1996-2002.
- 31. Member of Scientific Advisory Committee, Polymer Composites 99 Symposium, Quebec *October* 1999
- 32. Member of Scientific Advisory Committee, International Conference on Composite Materials, ICCM 13, Beijing, 2001.
- 33. Chair, 3<sup>rd</sup> Canadian International Conference on Composites, Montreal, August 2001.
- 34. Member, International Advisory Committee, 7<sup>th</sup> International Conference on Acoustic Emission from Reinforced Plastics, Paris, *July* 2001.
- 35. Co-chair, 3<sup>rd</sup> Canada-Japan workshop on Composites, Kyoto, Japan, *March* 2000.
- 36. External Evaluator, Graduate Programs, Institute for Aerospace Studies, Uni. of Toronto, 2000.
- 37. External Evaluator, Graduate Program, Ryerson Polytechnic University, 2000.
- 38. Member, International Scientific Committee, 4<sup>th</sup> Canadian International Conference on Composites, Ottawa, *August 2003*.
- 39. Member, International Scientific Committee, 14<sup>th</sup> International Conference on Composites, ICCM 14, San Diego, *July* 2003.
- 40. Co-Chair, 5<sup>th</sup> Canada-Japan workshop on Composites, Yonezawa, Japan, September 2004.
- 41. Member of International Scientific Committee, Canadian International Conference on Composites, Vancouver, British Columbia, *August 2005*.
- 42. Member of Canadian Engineering Accreditation Board visiting team to evaluate the Mechanical Engineering program at Laval University, February 2007.

- 43. Co-chair, 6<sup>th</sup> Canada-Japan workshop on Composites, Toronto, Canada, August 24-26, 2006.
- 44. Co-chair, first US/Canada conference on composites, University of Delaware, September 2009.
- 45. Co-chair, second US/Canada conference on composites, Montreal, Canada, September 2011,
- 46. Chair, Symposium on Automated Composites Manufacturing, Montreal, April 2013.
- 47. Chair, 19<sup>th</sup> International Conference on Composite Materials, (ICM 19), Montreal, July 2013.

#### Journal editorial activities:

- 1. Member of the Editorial Board, Journal Composites Science and Technology, 2004-2006.
- 2. Member of the Editorial Board, Journal of Thermoplastic Composites, 2008-date.
- 3. Member of the Editorial Board, Journal of Composite Materials, 2008-date.
- 4. Member of the Editorial Board, Journal of Sandwich Structures, 29007-date.
- 5. Editor in Chief, Journal of Science and Engineering of Composite Materials, June 2006-date.

# **INVITED SPEAKERS**

- 1. 5<sup>th</sup> International Symposium on Acoustic Emission from Composites, Sundsval, Sweden, *July 1995*.
- 2. Clarkson University, Department of Mechanical Engineering, May 1996.
- 3. Ecole Polytechnique Montreal, Department Genie Mecanique, July 1996.
- 4. National Research Council of Canada, Industrial Materials Institute, October 1996.
- 5. International Conference on Research on Materials, Cancun, Mexico, September 1997.
- 6. International Conference on Testing of Materials, Hong Kong, University of Science and Technology, *October 1998*.
- 7. Journée des éléments finis, GIREF, Université Laval, May 1998.
- 8. Canadian Woodlands Conference, Montreal, March 1998.
- 9. SAMPE Quebec Chapter, March 1999.
- 10. National Research Council of Canada, Institute for Research in Aerospace, April 1999.
- 11. Second Conference on Emerging Technologies for Manufacturers, Natural Resources Canada, February 2001.
- 12. Canada-France meeting on Composites at Les Journees Europeennes des Composites, April 2002.
- 13. International conference on Nanotechnology, Kyoto, Japan, February 2003.
- 14. **Key note address.** 2004 International Conference on Industrial Applications of Nanomaterials and Advanced Composites, Hong Kong, *February 2004*.
- 15. **Plenary address,** American Society for Composites annual conference, Drexel University, Philadelphia, *September 2005*.
- 16. West Virginia University (USA), Department of Chemical Engineering, October 2005.
- 17. **Key note address,** International Forum on Nanocomposites and Spring-8 (Synchrotron radiation facility), Harima International Forum, Center for Advanced Science and Technology, Hyogo, Japan, *January* 27, 2006.
- 18. **Feature lecture,** Polymer Nanocomposites Research in Canada, Joint ASC/SAMPE conference, Memphis, Tennessee, September 2008.
- 19. High Performance Materials Institute, Department of Materials and Manufacturing Engineering, Florida State University, Spring 2013.

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20. **Key note lecture**, 4th International conference on recent advances in composite materials conference, Goa, India, February 2013.

- 21. **Plenary lecture**, 17<sup>th</sup> International conference on Composite Structures, Porto, Portugal, June 2013.
- 22. Shanghai Aircraft Manufacturing company. Ltd., November, 2013.
- 23. Dong Hua university, Department of Textile Engineering, November 2013
- 24. Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fujian, China, November 2013.
- 25. Nanyang lecture, Xiaomen University, China, November 2013.
- 26. **Key note lecture**, Third International Symposium on Advanced Textile Science and Technology, Zhejiang Sci-Tech University, Hangzhou, China, November 2013.
- 27. **Invited lecture,** China Aerospace Institute for Materials and Processing Technology, Beijing, July 2014.
- 28. **Invited lecture**, Nanjing University of Aeronautics and Astronautics, July 2014.
- 29. **Invited lecture,** International forum on advanced materials, Bari, Puglia, Italy, September 2014.

### AWARDS AND DISTINCTION

- 1. Winner of Ralph R. Teetor Award, Society of Automotive Engineers, 1980.
- 2. Founder, First President, First Chair of the Board and Fellow, Canadian Association for Composite Structures and Materials, CACSMA, 1988-91 and President: 1999-date.
- 3. Fellow, Canadian Association for Composite Structures and Materials, 1992.
- 4. Fellow, American Society of Mechanical Engineers, 1996.
- 5. Winner of the G.H. Duggan medal for Advanced Materials, Canadian Society for Mechanical Engineering, 1996.
- 6. Fellow, Canadian Society for Mechanical Engineering, 1997.
- 7. Honorary Advisory Professor, Shanghai University of Technology, Shanghai, China, 1990-1995.
- 8. Concordia University Research Fellow, 2001.
- 9. Concordia University Research Chair in Materials and Composites, 2001-2015.
- 10. Winner of the **NSERC Synergy Award for Innovation**, October 2006.
- 11. Winner of the Prize Partenariat of the Association des Directeurs de Recherche Industrielle du Quebec (ADRIQ), November 2006.
- 12. Fellow, Engineering Institute of Canada (ECI), 2007.
- 13. Recipient of the NanoAcademia award from Nanoquebec, 2008.
- 14. Recipient of the title Research Fellow, Pratt & Whitney Canada Ltd., 2008
- 15. Winner of the Prize Partenariat of the Association des Directeurs de Recherche Industrielle du Quebec (ADRIQ), 2009.
- 16. Recognition of excellence, Association des Directeurs de recherche industrielle du Quebec (ADRIQ), 2010.
- 17. Recipient of Agora trophy, Palais des Congres Montreal, October 2011.
- 18. Destech Award, American Society for Composites, September 2011.
- 19. NSERC Industrial Chair on Automated Composites Manufacturing, 2012-2017
- 20. Fellow, Canadian Academy of Engineering, 2013.

<u>PUBLICATIONS</u>: Total number of refereed journal publications: **182** 

Total number of refereed conference proceedings and presentations: 331

Total number of patents: 10
Total number of code and standard contributions: 3

Total number of books: 6

Total number of conference proceedings edited: 19

Code and Standard: 3

Total number of commercialized computer programs: 2

## A. LISTING OF REFEREED JOURNAL PUBLICATIONS

1. Tabarrok, B. and Hoa, S.V., "Thermal Stress Analysis of Plates and Shallow Shells by Hybrid Finite Element Method", <u>Journal of Strain Analysis</u>, Vol. 9, No. 3, 1974, pp. 152-158.

- 2. McCammond, D. and Hoa, S.V., "Craze and Creep Resistance of High Impact Polystyrene in Alcohols", <u>Polymer Engineering & Science</u>, Vol. 17, No. 12, December 1977, pp. 869-872.
- 3. McCammond, D. and Hoa, S.V., "Effects of some Liquids on the Creep Behaviour of High Impact Polystyrene", Polymer Engineering & Science, Vol. 18, No. 11, August 1978, pp. 917-920.
- 4. Hoa, S.V., "Vibration of Curved Beam with Tip Mass", <u>Journal of Sound and Vibration</u>, 61(3), 1978, pp. 427-436.
- 5. Hoa, S.V., "Vibration of a Rotating Beam with Tip Mass", <u>Journal of Sound and Vibration</u>, 67(3), 1979, pp. 369-381.
- 6. Hoa, S.V. and Sankar, S., "A computer Program for Automatic Generation of Stiffness and Mass Matrices in Finite Element Analysis", <u>Computers and Structures</u>, Vol. 11, No. 3, 1980, pp. 147-161.
- 7. Sankar, S. and Hoa, S.V., "Finite Element-Extended Transfer Matrix Method for Free Vibration of Plates", Journal of Sound and Vibration, Vol. 70, No. 1, 1980, pp. 205-211.
- 8. Hoa, S.V., "Relative Influence of the Mobility and the Solubility Parameters of Fluids on the Mechanical Behaviour of High Impact Polystyrene", <u>Polymer Engineering & Science</u>, Vol. 20, No. 17, 1980, pp. 1157-1160.
- 9. Hoa, S.V., Hodges, D.H., and Rutkowski, M.J., "Comments on Vibration of a Rotating Beam with Tip Mass", <u>Journal of Sound and Vibration</u>, Vol. 72, No. 2, 1980, pp. 547-549.
- 10. Hoa, S.V., "Effects of Liquid on the Stress Rupture Lives of Fiber Glass Reinforced Plastics", <u>ASTM Special Technical Publication 734</u>, "Test Methods for Fibrous Composites", 1981, pp. 411-419.
- 11. Hoa, S.V., "Vibration Frequency of a Curved Blade with Weighted Edge", <u>Journal of Sound and Vibration</u>, Vol. 79, No. 1, November 8, 1981, pp. 107-119.
- 12. Hoa, S.V. and Ouellette, P., "Liquid Absorption of a Sheet Molding Compound", <u>Polymer Composites</u>, Vol. 2, No. 4, October 1981, pp. 167-170.
- 13. Hoa, S.V., "Notched Strength of Sheet Molding Compounds", <u>Polymer Composites</u>, Vol. 2, No. 4, October 1981, pp. 145-148.
- 14. Hoa, S.V., Ngo, A.D. and Sankar, T.S., "Fatigue Crack Propagation of Sheet Molding Compounds in Various Environments", <u>Polymer Composites</u>, Vol. 2, No. 4, October 1981, pp. 162-166.
- 15. Hoa, S.V. and Feldman, D., "Joining Strength of Sheet Molding Compounds", Polymer Composites,

- Vol. 3, No. 1, January 1982, pp. 48-53.
- 16. Hoa, S.V., Ngo, A.D. and Sankar, T.S., "Effect of Water and Isoctane Absorption on the Flexural Fatigue Strength of a Sheet Molding Compound", <u>Polymer Composites</u>, Vol. 3, No. 1, January 1982, pp. 44-48.
- 17. Hoa, S.V., "Strain Analysis of Dual Laminate Cylindrical Fiber Reinforced Plastic Vessel", <u>Journal of Reinforced Plastics and Composites</u>, July 1982, pp. 242-253.
- 18. Hoa, S.V. and Nguyen, Q.B., "Temperature Increase of SMC-R65 in Flexural Fatigue Test", <u>Polymer Composites</u>, Vol. 4, No. 2, April 1983, pp. 85-89.
- 19. Hoa, S.V. and Ouellette, P., "Stress Corrosion Cracking of Polyvinylidene Fluoride in Sodium Hydroxide", Polymer Engineering & Science, Vol. 23, No. 4, March 1983, pp. 202-205.
- 20. Hoa, S.V., Sankar, T.S., and Bargiora, R., "Tensile Behaviour of Laminates Used for Making Fiber Reinforced Plastic Vessels", <u>Journal of Reinforced Plastics and Composites</u>, Vol. 2, No. 2, April 1983, pp. 118-129.
- 21. Feldman, D., Hoa, S.V., and Coriaty, E., "Bonding Strength of Sheet Molding Compounds", Polymer Plastics Technology and Engineering, Vol. 23, No. 1, 1984, pp. 99-118.
- 22. Lucking, W.M., Hoa, S.V. and Sankar, T.S., "The Effect of Geometry on Interlaminar Stresses of [0/90] Composite Laminates with Circular Holes", <u>Journal of Composite Materials</u>, Vol. 18, March 1984, pp. 174-188.
- 23. Hoa, S.V. and Ouellette, P., "Damping of Composite Materials", <u>Polymer Composites</u>, Vol. 5, No. 4, Oct. 1984, pp. 334-338.
- 24. Hoa, S.V. and Maji, J., "Two-dimensional Bending and Extension of Cross-ply Laminates with Different Moduli in Tension and Compression", <u>Composite and Structures</u>, Vol. 20, No. 6, 1985, pp. 921-928.
- 25. Ngo, A.D., Hoa, S.V., and Sankar, T.S., "Mechanisms of Fatigue Failure of Sheet Molding Compounds in Different Environments", <u>High Modulus Fiber Composites in Ground Transportation</u> and High Volume Applications, ASTM Special Technical Presentation #873, 1985.
- 26. Hoa, S.V., Yu, C.W. and Sankar, T.S., "Analysis of Filament Wound Vessel Using Finite Elements", Composite Structures, Vol. 3, No. 1, 1985, pp. 1-18.
- 27. Hoa, S.V., Sankar, T.S., and Berczynski, W.S., "Buckling of Hand Lay Up Composite Cylindrical Vessel", Journal of Reinforced Plastics and Composites, Vol. 4, No. 2, April 1985, pp. 162-172.
- 28. Ouellette, P. and Hoa, S.V., "Creep of Fiberglass Reinforced Plastic Pressure Vessels", <u>Journal of Reinforced Plastics and Composites</u>, Vol. 4, No. 3, July 1985, pp. 287-296.
- 29. Ouellette, P., Hoa, S.V., and Sankar, T.S., "Buckling of Composite Cylinders under Internal Pressure", Polymer Composites, Vol. 7, No. 5, Oct. 1986.
- 30. Natarajan, R., Hoa, S.V., and Sankar, T.S., "Stress Analysis of Filament Wound Tanks Using Three-Dimensional Finite Elements", <u>International Journal for Numerical Methods in Engineering</u>, Vol. 23, 1986, pp. 623-633.
- 31. Ouellette, P. and Hoa, S.V., "Fatigue of Glass Fiber Reinforced Polyester Laminates", <u>Polymer Composites</u>, Vol. 7, No. 1, February 1986.
- 32. Blach, A.E. and Hoa, S.V., "Bolted Flange Connections for Glass Fiber Reinforced Plastic Pipes and Pressure Vessels", <u>Design Engineering</u>, UK, May 1987.
- 33. Hoa, S.V., Di Maria, A., and Feldman, D., "Aluminum Inserts for Sheet Molding Compounds", Composite Structures, Vol. 8, No. 4, 1987.

34. Hoa, S.V., Daoust, J., Du, B.L., and Vu-Khanh, T., "Interlaminar Stresses in a Tapered Laminate", Polymer Composites, Vol. 9, No. 5, October 1988.

- 35. Blach, A.E. and Hoa, S.V., "The Effects of Pull-Back on Stresses in FRP Flanges", <u>Experimental Techniques</u>, Nov. 1988.
- 36. Hoa, S.V. and Li, L., "Acoustic Emission during Quasi-Static Loading/Hold/Unloading in Notched Reinforced Fiber Composite Materials", <u>Journal of Acoustic Emission</u>, Vol. 7, No. 4, March 1989, pp. 145-160.
- 37. Hoa, S.V., Lin, S. and Chen, J., "Effects of Moisture Content on the Mechanical Properties of Polyphenylene Sulfide Composite Materials", <u>Special Technical Publication on Thermoplastic Composites</u>, American Society for Testing and Materials, ASTM-STP 1044, 1989.
- 38. Hoa, S.V. and Mannarino, G., "Twisting of Filament Wound Cylinders under Internal Pressure", <u>Journal of Reinforced Plastics and Composites</u>, Vol. 8, No. 1, January 1989, pp. 212-231.
- 39. Daoust, J. and Hoa, S.V., "Parameters Affecting Interlaminar Stresses in Tapered Laminates under Static Loading Conditions", <u>Polymer Composites</u>, Vol. 10, No. 5, October 1989, pp. 374-83.
- 40. Daoust, J. and Hoa, S.V., "A Comprehensive Technique for Determination of Safety Factors in Composites," <u>Journal of Reinforced Plastics and Composites</u>, Vol. 8, No. 6, November 1989, pp. 584-600.
- 41. Hoa, S.V., Journeaux, B., and Di Lalla, L., "Computer Aided Design for Composite Structures", Composite Structures, Vol. 13, February 1989, pp. 67-79.
- 42. Blach, A.E., Hoa, S.V., Kwok, C.K., and Ahmed, A.K.W., "Rectangular Pressure Vessels of Finite Length", <u>ASME Journal of Pressure Vessel Technology</u>, Vol. 112, Feb. 1990, pp. 50-56.
- 43. Lucking, W.M., Hoa, S.V. and Sankar, T.S., "A Boundary Collocation Method for Stress Analysis of Laminated Edges", <u>Computers and Structures</u>, Vol. 34, No. 4, 1990, pp. 655-662.
- 44. Beshay, A. and Hoa, S.V., "Reinforcement of Polyvinyl Chloride (PVC) and Polystyrene (PS) with Cellulosic Fibers Treated with Silane", <u>Journal of Thermoplastic Composite Materials</u>, Vol. 3, No. 4, October 1990, pp. 264-74.
- 45. Ouellette, P., Hoa, S.V., and Li, L., "A Procedure for Acceptance Testing of FRP Balsa Wood Core Pressure Vessels", <u>Journal of Acoustic Emission</u>, January-March 1990, pp. 37-43.
- 46. Xiao, X.R. and Hoa, S.V., "Effect of Melting History on the Crystallographic Characteristics of Poly (ether ether ketone) Aromatic Polymer Composites", <u>Journal of Theoretical and Applied Fracture Mechanics</u>, Vol. 14, No. 1, 1990, pp. 49-56.
- 47. Ouellette, P., Hoa, S.V., and Li, L., "Nondestructive Evaluation of Fiberglass Reinforced Plastic Road Tankers Subjected to Internal Pressure Using Acoustic Emission Monitoring", <u>Journal of Hazardous Materials</u>, Vol. 25, 1990, pp. 49-60.
- 48. Hoa, S.V. and Daoust, J., "An Analytical Solution for Anisotropic Plates Containing Triangular Holes", Composite Structures, Vol. 19, No. 2, 1991.
- 49. Mazumdar, S. and Hoa, S.V., "On the Kinematics of Filament Winding on Non-axisymmetric Cylindrical Mandrels. Part I: A Generalized Model", <u>Composites Manufacturing</u>, Vol. 2, No. 1, 1991.
- 50. Mazumdar, S. and Hoa, S.V., "On the Kinematics of Filament Winding on Non-axisymmetric Cylindrical Mandrels. Part II: For Convex Polygonal Cross Section", Composites Manufacturing, Vol. 2, No. 1, 1991.
- 51. Beshay, A. and Hoa, S.V., "Improved Interface Bonding between Cellulosic Fibers and November 2013

- Thermoplastics", Science and Engineering of Composite Materials, Vol. 2, No. 2, 1992.
- 52. Hoa, S.V., Lin, S., and Chen, J., "Hygrothermal Effect on Mode II Interlaminar Fracture Toughness of a Carbon/Polyphenylene Sulfide Laminate", <u>Journal of Reinforced Plastics and Composites</u>, Vol. 11, No. 1, January 1992.
- 53. Xiao, X.R., Hoa, S.V., and Street, K.N., "Processing and Modeling Resistance Welding of APC-2 Composite", Composite Materials, Vol. 26, No. 7, 1992.
- 54. Ouellette, P. and Hoa, S.V., "Acoustic Emission Signal Trends during High Cycle Fatigue of FRP/Balsa Wood Core Vessels", <u>Journal of Acoustic Emission</u>, Vol. 11, No. 2, 1993.
- 55. Mazumdar, S.K. and Hoa, S.V., "Kinematics of Filament Winding during Starting and Reversal Process for Complex Composite Components", <u>Transactions of the CSME</u>, Vol. 17, No. 4A, 1993.
- 56. Han, J. and Hoa, S.V., "A Three Dimensional Multilayer Composite Finite Element for Stress Analysis of Composite Laminates", <u>International Journal for Numerical Methods in Engineering</u>, Vol. 36, pp. 3903-3914, 1993.
- 57. Hojjati, M. and Hoa, S.V., "Curing Simulation of Thick Thermosetting Composites", <u>Composites Manufacturing</u>, Vol. 5, No. 3, 1994, pp. 159-169.
- 58. Smith, C. and Hoa, S.V., "Utilization of PVDF Sensors to Determine Impact Damage in Graphite/Epoxy Plates by Acousto-ultrasonic Technique", <u>Journal of Reinforced Plastics and Composites</u>, Vol. 13, February 1994.
- 59. Mazumdar, S.K. and Hoa, S.V., "Algorithm for Filament Winding of Non-axisymmetric Tapered Composite Components Having Polygonal Cross Section on Two-axes Filament Winding Machine", Composites Engineering, Vol. 4, No. 3, pp. 343-359, 1994.
- 60. Mazumdar, S.K. and Hoa S.V. "Analytical Models for Low Cost Manufacturing of Composite Components by Filament Winding. Part I. Direct Kinematics", Composite Materials, Vol. 29, No. 11, 1995, pp. 1515-1541.
- 61. Hojjati, M. and Hoa, S.V. "Model Laws for Curing of Thermosetting Composites", <u>Composite Materials</u>, Vol. 29, No. 13, 1995, pp. 1741-1761.
- 62. Mazumdar, S.K. and Hoa, S.V., "Analytical Models for Low Cost Manufacturing of Composite Components by Filament Winding, Part II. Inverse Kinematics", Composite Materials, Vol. 29, No. 13, 1995 pp. 1762-1788.
- 63. Xie, M., Hoa, S.V. and Xiao, X.R., "Bonding Steel Reinforced Concrete with Composites", <u>Journal of Reinforced Plastics and Composites</u>, Vol. 14, September 1995, pp. 949-964.
- 64. Kim, Y.S. and Hoa, S.V., "Buckling of Composite Plate under Biaxial Loading Conditions", Composite Structures, Vol. 31, No. 4, September 1995, pp. 247-252.
- 65. Hojjati, M. and Hoa, S.V., "Some Observations in Curing of Thick Thermosetting Laminated Composites", <u>Science and Engineering of Composite Materials</u>, Vol. 4, No. 2, 1995, pp. 89-108.
- 66. Xiao, X.R., Lin, S. and Hoa, S.V., "Scale Relations for Mold Filling Simulation in Resin Transfer Molding", Science and Engineering of Composite Materials, Vol. 4, No. 2, 1995, pp. 131-141.
- 67. Hoa, S.V., "Creep of a Composite Box Beam", <u>Journal of Reinforced Plastic and Composites</u>, Vol. 14, February 1995, p. 128.
- 68. Hoa, S.V., "Biaxial Bearing Bypass Testing of Graphite/epoxy Plates", <u>Journal of Composite</u> Technology and Research, Vol. 17, No. 2, April 1995, pp. 123-131.
- 69. Mazumdar, S.K. and Hoa, S.V., "Manufacturing of Non-Axisymmetric Thermoplastic Composite Parts by Tape Winding Technique", <u>Materials and Manufacturing Processes</u>, Vol. 10, No. 1, 1995,

- pp. 47-56.
- 70. Hojjati, M., Safavi, A.V., and Hoa, S.V., "Design of Domes for Polymeric Composite Pressure Vessels", Composites Engineering, Vol. 5, No. 1, 1995, pp.51-59.
- 71. Mazumdar, S.K. and Hoa, S.V., "Application of Taguchi Method for Process Enhancement of Online Consolidation Technique", <u>Composites</u>, Vol. 26, No. 9, 1995, pp. 669-673.
- 72. Hoa, S.V. and W. Feng, "Application of global/local finite element model to composite laminates", Science and Engineering of Composite Materials, Vol. 5, No. 3-4, 1996.
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### B. LISTING OF REFEREED CONFERENCE PROCEEDINGS AND PRESENTATIONS

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- 286. Rowghanian, P. and Hoa, S.V., "Improvement of Temperature Distribution Across Thick Thermoset Composite Laminates Using Carbon Nanotubes", ibid.
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- 293. Mehdipour, A., Rosca, I.D., Trueman, C., Sebak, A., and Hoa, S.V., "Reinforced Continuous Carbon Fiber (RCCF) Composite Materials for Microwave Applications" ibid.
- 294. Rosca, I.D. and Hoa, S.V., "Electrically conductive structural adhesive based on bucky papers", <u>Proc, 18th International conference on composite materials</u>, Jeju, Korea, August 2011.

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- 298. Shadmehri, F., Hoa, S.V., and Hojjati, M., "Buckling of conical composite shells", <u>International conference on composite structures 16</u>, Porto, Portugal, June 2011.
- 299. Khan, A.M., Aissa, B., Haddad, E., Higgins, A., and Hoa, S.V., "Experimental Investigation of the Self Healing Performance of CFRP Composite Subjected to High Velocity Impact", <u>International conference on self healing materials</u>, University of Bath, UK, June 2011.
- 300. Chaeichian, S., Hoa, S.V., and Wood-Adams, P., "In situ polymerization of unsaturated polyester hybrid systems for the preparation of clay nanoccomposites: Mechanical properties", <u>15th European conference on composites</u>, Venice, Italy, June 2012.
- 301. Rosca, I.D. and Hoa, S.V., "Conductive structural adhesive with low thermal expansion coefficient for aerospace applications", <u>15th European conference on composites</u>, Venice, Italy, June 2012.
- 302. Cai, X., Shadmehri, F., Hojjati, M., Chen, A., and Hoa, S.V., "Determination of optimum process conditions for processing AS4/APC-2 thermoplastic composites by automated fiber placement", <u>Proc. SAMPE conference</u>, Boston, May 2012.
- 303. Hoa, S.V., "Automated manufacturing of composites using automated fiber placement", <u>9th</u> Canada-Japan workshop on composites, Kyoto, Japan, July 2012.
- 304. Ahmed, K. and Hoa, S.V., "Damping and fatigue properties of glass/epoxy composites with nanoclay addition", <u>37th Annual conference of the American Society for Composites</u>, Arlington, Texas, October 2012.
- 305. Naghashpour, A. and Hoa, S.V., "Through the thickness strain measurement in composite laminates using carbon nanotubes", ibid.
- 306. Hoa, S.V. and Ahmed, K., "Effect of nanoclay addition on the fatigue behavior of glass/epoxy laminates", <u>Annual technical conference of the Society for Engineering Science</u>, Atlanta, Georgia, October 2012.
- 307. Rosca, I.D. and Hoa, S.V. "Effect of carbon nanotubes on the thermal conductivity of carbon/epoxy composites", <u>International conference on aerospace technology</u>, Paris, France, November 2012.
- 308. Shadmehri, F., Xiao, C., Hoa, S.V., Hojjati, M., "Thermoplastic composite cones", ibid.
- 309. Mehdipour A., Denidni Tayeb, Sebak Abdel, Trueman Chris W., Rosca Iosif, Hoa Suong V., "Anisotropic carbon fiber nanocomposites for mechanically reconfigurable antenna applications", <u>Proc.</u> 2013 IEEE International Symposium on antenna applications, Florida, USA, July 2013.
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311. **Invited key note lecture**, Hoa S.V., "Unique composite structures made by automated manufacturing", <u>Proc. of the 17th International conference on composite structures</u>, Porto, Portugal, June 2013.

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- 313. El Geuchy Mohamed., Hoa Suong, Shadmehri Farjad, "Bending stiffness behavior of thick walled composite tubes", ibid.
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- 321. Hoa S.V., "Recent developments in automated composites manufacturing", ibid.
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- 326. Ghayoor H., Shadmehri F., and Hoa S.V., "Development of experimental technique for measuring strain and deformation in manufacturing of thermoplastic composites using automated fiber placement", SAMPE, Seattle, Washington, June 2014.
- 327. Rouhi M., Ghayoor h., Hoa S.V., and Hojjati M., "Effect of thickness ratio and load direction on structural performance of variable thickness composite cylinders", SAMPE, Seattle, Washington, June 2014.
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### C. BOOKS

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#### D. CONFERENCE PROCEEDINGS EDITED

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- 16. Ngo, A.D., Denault, J., Nakai, A., Morii, T., Hoa, S.V., and Hamada, H., "Design, Manufacturing and Applications of composites", Proc. 8th Canada Japan workshop on composites, Destech Publications, 2010.
- 17. Hyer, M., Hoa, S.V., and Ochoa, O., Proceedings of the 26th ASC conference/Second joint US-Canada conference on composites, Montreal, September 2011, published by Destech.
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## E. PATENTS

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  - 9.Hoa S.V., and Naghashpour A., "Method and system for detecting and locating damages in composite structures", PCT/CA 2012/001161, May 2013
  - 10. Rosca I.D., Salameh M., and Hoa S.V., "Process for nanolevel dispersion of cellulose nanocrystals (CNCs) in hydrophobic organic materials, thermosets and thermoplastics", Declaration of Invention filed June 2013.

## F. CODE AND STANDARD

- 1. Laminate Theory Portion of ASME Boiler and Pressure Vessel Code, Section 10.
- 2. "Recommended Practice for Acoustic Emission Testing of Pressurized Highway Tankers Made of Fiberglass Reinforced Plastic with Balsa Core", American Society for Nondestructive Testing, 1993.
- 3. "Acoustic Emission Testing of Pressurized Containers Made of Fiberglass Reinforced Plastic with Balsa Wood Cores", ASTM Standard, E 1888-97.

# G. COMMERCIALIZED COMPUTER PROGRAMS

- 1. Hoa, S.V. and Daoust, J., "HYBRID", a computer program for analysis of composite laminates, distributed by Concordia University Industrial Liaison Office, 1990.
- 2. Hoa, S.V. and Klironomos, J., "CADFRP", a computer program for stress analysis of composite pressure vessels, distributed by Technomic Publishing Co., Pennsylvania, 1993.

## INDUSTRIAL AND CONSULTING EXPERIENCE

1976-1977	Design Engineer	Canadian Fram Ltd.,	Chatham, Ontario
17/01//	Dobigii Diigiilooi,	Canadian Francisco.,	Chaman, Omano.

1979 Consultant, RBL Industrial Fan Manufacturer, Plessisville, Quebec.

1980 Consultant, Ritepro Inc., Montreal, Quebec, Canada.

1981-1982 Consultant, Persta Canada Ltd., Montreal, Quebec, Canada.

1981-1983 Consultant, InfoTech Aviation Ltd., Montreal, Quebec.

1982-1984 Consultant, Spar Aerospace, Montreal, Quebec.

1980-2005 Consultant, CPF Dualam Ltd., Montreal, Quebec, Canada.

1984-1989 Scientific Advisor for the PILP Grant, ABCO Plastics Ltd., Mahone Bay, Nova Scotia.

1987-1990 Consultant, Revenue Canada.

1990-1992	Consultant, Troy Manufacturing.
1993-1995	Consultant, International Reinforced Plastics, Ohio, USA.
1999-2005	Consultant, Tankcon FRP Ltd., Montreal, Quebec.
1999	Consultant, ITF Inc., Montreal, Quebec.
2000	Consultant, QIT Fer Titane, Tracy, Quebec.
2000	Consultant for the Graduate Programs, University of Toronto Institute for Aerospace
	Studies
2001	Consultant for the Graduate Programs, Ryerson Polytechnic University, Toronto.
2002	Consultant for Fibre de Verres Abitibi Inc., Rouyin-Noranda.
2003	Consultant for Tankcon FRP Ltd., Montreal, Quebec.
2005	Consultant for Bell Textron Canada Ltd.
2006	Consultant for the graduate program in Mechanical Engineering, University of Western
	Ontario.
2011-2012	Consultant Symmetrix Ltd., Montreal, Quebec.

# INTERNATIONAL MISSIONS ON TECHNOLOGY

- Mission to Malaysia on Composites: Organized and supported by Bell Helicopter Textron Ltd. May 1996.
- 2. Mission to Paris, France on Composites: Supported by the Department of Foreign Affairs and International Trade. March 2001.
- 3. Mission to Taiwan (second joint Taiwan-Canada in Aerospace): Supported by the Natural Sciences and Engineering Research Council of Canada and organized by the Institute for Aerospace Research (IAR) of the National Research Council of Canada. May 2001.
- 4. Mission of Advanced Materials to Singapore and Hong Kong: Supported by the Department of Foreign Affairs and International Trade. June/July 2001.
- 5. Mission to Paris, France on Composites: Supported by the Department of Foreign Affairs and International Trade. April 2002.
- 6. Mission to the U.K. on Aerospace: Supported by the Quebec Ministere de l'Industrie, de la Science et de la Technologie, and by Consortium en Aerospace du Quebec (CRIAQ). July 2002.
- 7. Mission to Switzerland, France and Germany on Nanotechnology, supported by the Department of Foreign Affairs and International Trade, November 2002.
- 8. Mission to Tokyo Japan on Nanotechnology, Supported by the Department of Foreign Affairs and International Trade, February 2003.
- 9. Mission to Hong Kong on Nanotechnology and Advanced Composites, Supported by the Department of Foreign Affairs and International Trade, February 2004.
- 10. Mission to Nanjing, China, and Yonezawa, Japan on Composites, August, September 2004.
- 11. Mission to India in Aerospace, November, 2006.
- 12. Mission to U.K. in Aerospace, October 2007.
- 13. Mission to Poland in Aerospace, supported by Quebec Ministry of Industry, Development and Innovation, April 2009.
- 14. Mission to India in Aerospace, supported by Concordia University, February 2010.
- 15. Mission to Japan in Nanotechnology, supported by the Quebec Ministry of Industry, Development

- and Innovation, February 2010.
- 16. Mission to India in Aerospace, February 2011, supported by Concordia University.
- 17. Meeting on "Canadian Networking Aeronautics project for Europe, CANAPPE", Paris, France. Supported by Department of Foreign Affairs and International Trade, June 2011.
- 18. Mission to Japan on composites. Supported by the Department of Foreign Affairs and International Trade, July 2012.
- 19. Mission to Israel in Aerospace, August 2012, Supported by the Quebec MDEIE.

# RESEARCH GRANTS AND CONTRACTS

RESEARCH GRANTS AND CONTRAC	<u>.15</u>	
CRIAQ project 1.2: Consortium en Aerospace du Quebec/Bell Helicopter, Bombardier, (Project on		
thermoplastic composites, (PI)	2004-2008	\$450,875
CRIAQ project 1.1/Bell Helicopter, Delastek and Pratt & Whitney Canada Ltd, "Low Cost		
composite wing box", (PI)	2003-2005	\$236,053
<b>CRIAQ</b> support for technical professional	2004-2006	\$50,000
NSERC CRD/CRIAQ COMP 1-14/Indus	try, "Development of composite n	naterials with high
electrical conductivity and electromagnetic	shielding effectiveness", (PI)	
	2006-2009	\$409,511
NSERC CRD/ CRIAQ project COMP 5/ Bell Helicopter Textron, Bombardier Aerospace and		
<b>DEMA Aeronautics</b> , "The efficient application", (PI)	ation of thermoplastic composites t	to a light helicopter tail
	2008-2011	\$665,000
NSERC CRD/CRIAQ project COMP 1/ Bell Helicopter Textron, Bombardier Aerospace, and		
Delastek Ltd, "Out-of-autoclave manufacturing of composite aerospace structures", PI. P. Hubert		
	2008-2011	\$915,000
<b>CRIAQ project COMP 415</b> MDA, Pratt & Whitney Canada Ltd., Composites Atlantic, Epsilon Ltd. Nanoquebec on the project "Understanding the behavior of carbon fiber reinforced composites in extreme thermal cycling space environment and development of conductive structural adhesive for		
extreme thermal cycling space environment	and development of conductive st	ructural aunesive ioi

**Regroupement Strategiques** on Polymer Processing and Composites, Fonds de Recherche du Quebec, Nature et Technologie (Director: Dr. P. Carreau, Co-Director Dr. S.V. Hoa, together with 45 other researchers in Polymers and Composites in Quebec)

2010-2013

	2004-2010	\$450,000/y
Canadian Space Agency contract	2003	\$15,000
MPB Technologies (self-healing materials)	2005	\$23,000
MPB Technologies (self-healing materials)	2009-2010	\$52,000
MPB Technologies (self-healing materials)	2011	\$15,000
Member of the ISIS (Canadian Network of	Centers of Excellence)	
	2002-2007	\$190,000
Concordia University, Research Chair on	Materials and Composites 2001-2015	\$40,000/y
Bombardier Ltd. (Conference grant)	1998	\$500
Spar Aerospace Ltd. (student support)	1998	\$5,000

Suong Van HOA	Curr	iculum vitae	
Pratt & Whitney Canada Ltd. (contract)	2003	\$42,000	
C.P.F. Dualam Ltd. (contracts)	1998-1999	\$5,000	
Member of the AUTO21 Canadian Network		\$23,000/y	
<b>Natural Science and Engineering Researc</b>		, -,, <b>,</b>	
	1978-1985	\$74,058	
	1985-1988	\$29,080/y	
	1988-1991	\$38,360/y	
	1991-1994	\$40,000/y	
	1994-1997	\$38,520/y	
	1997-1999	\$43,604/y	
	1999-2001	\$45,785/y	
	2002-2007	\$56,000/y	
	2007-2012	\$49,000/y	
	2012-2017	\$45,000/y	
NSERC TPP grant/CPF Dualam Ltd. (De		,	
	1996-1999	\$343,600	
NSERC CRD grant/Pratt & Whitney Car	nada (Development of composite outer bypa	,	
fan jet engine)	1991-1994	\$110,000/y	
NSERC CRD grant/TANKCON FRP (De			
thermoplastic liner)	1994-1996	\$70,000/y	
NSERC CRD grant /EMS Technologies,		, ,	
composites for satellite applications)	1999-2002	\$94,500/y	
<b>PRAI Grant,</b> PI (FRP vessels-CPF Ltd)	1981-1983	\$158.550	
CRD Grant (FRP vessels with CPF Ltd)	1986-1988	\$250,000	
Carl Grant (Fra Pessels Will Grant Zeel)	1991-1993	\$160,000	
	1994-1996	\$55,000/y	
(Ultrasonic monitoring of cure of graphite/e		+,,,	
(1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	1999-2001	\$22,500/y	
<b>NSERC Equipment Grants</b>		. , ,	
With S. Sankar	1978-1979	\$26,542	
With R. Cheng	1979-1980	\$45,000	
Principal Applicant	1980-1981	\$40,000	
With R. Cheng	1981-1982	\$38,686	
Principal Applicant	1982-1983	\$13,603	
Principal Applicant	1983-1984	\$39,177	
Principal Applicant	1989	\$53,573	
Principal Applicant	1990	\$137,000	
Principal Applicant	1991	\$63,662	
With X.R. Xiao	1993-1994	\$22,000	
With S. Lin and X.R. Xiao (Resin transfer molding machine and Dynamic Analyzer)			
`	1994-1997	\$127,390	
With K. Demirli (robotic equipment)	1998-1999	\$24,540	

Suong Van HOA	Curri	iculum vitae
With R. Ganesan (extensometer)	2000-2001	\$20,500
Principal applicant (FT-IR)	2001-2002	\$50,000
Principal applicant (Microfluidizer)	2003-2004	\$40,000
With I. Jasiuk (Nano Bionix)	2006	\$130,000
Principal applicant (high temperature Autoc	clave) 2008	\$130,000
NSERC Conference Grants	,	ŕ
	1989	\$5,000
	1994	\$4,000
NSERC Synergy award	2006-2007	\$25,000
Ministere du Quebec conference grant	2001	\$10,000
Concordia University Equipment Grant		• ,
Infrastructure Grant	1983-1984	\$43,000
With Prof. R.M.H. Cheng	1984-1986	\$86,000
Xiao X.R., Hoa S.V., Blach A.E. (Dynamic		. ,
,	1993-1994	\$60,000
FCAR Operating & Capital Grant		. ,
With M.O.M. Osman (Equip.)	1978-1982	\$136,100
Principal Applicant, FCAR (Grant & Equip		,
	\$222,700	
	1993-1996	\$30,000/y
FCAR Actions Concertées	1988-1989	\$45,000
	1989-1992	\$50,000/y
FCAR Actions Concertées (Hoa. S.V., Xi	ao X.R., Ngo A.D.) (International collaborati	
	1994-1997	\$17,000/y
FCAR Équipe		. , ,
(Hoa, S.V., Blach, A.E., Xiao, X.R., Ngo, A	A.D.) (Composite structures and materials)	
	1993-1996	\$32,000/y
(Hoa, S., Xiao, X., Ganesan, R., Ngo, D.)	1998-2001	\$36,000/y
•	D., Timofeev, E., Hoa, S.V.) (Simulation and	, ,
capability for orbital debris impact)		\$64,500/y
FCAR Program for International Collab		. , ,
8	1995-1997	\$17,000/y
Ministry of Education & Science With S.	Sankar, J. Svoboda, S.V. Hoa, R. Cheng, R.	, .
Y. Stepanenko	1985-1990	\$1,160,000
Ministère de l'Enseignement Supérieur e	et de la Science	. , ,
Principal Applicant	1985-1988	\$150,000/y
Ford Canada Ltd.	1979-1980	\$7,000
Canadair Ltd.	1979-1980	\$750
Imperial Oil Ltd.	1983-1986	\$18,000
Spar Aerospace	1982-1998	\$22,728
Spar 1202 ospace	2,02 2,70	~ <b></b> ,
National Research Council Canada	1981	\$14,300

Suong Van HOA	C	Eurriculum vitae
(Industrial Materials Research Inst.)	1986-1988	\$97,000
NRC Contract (Joining of tubular compos	ites)	
	1994-1996	\$17,500/y
Department of National Defence	1984-1991	\$312,189
C.P.F. Dualam Ltd. (Contracts) (Acoustic	e emission of composite pressure vessels	and
characterization)	1995-1997-1980	\$18,087
Royal Military College	1983-1990	\$13,200
Voyageur Marine Construction	1983	\$1,200
CAE Electronics Ltd.	1985	\$11,975
Noranda Inc.	1986	\$2,400
Comptank Inc.	1987-1989	\$11,400
Les Transports Provost Inc.	1985-1988	\$330,000
Pratt & Whitney Canada Inc.	1991-1994	\$90,000
TANKCON FRP Inc. (Contracts) (Acous		
	1994-1997	\$40,000
<b>DNL Ltd. (Contract)</b> (Acoustic emission to		
	1997	\$7,200
AVCORP Ltd. (Contract) (Design of com	<u>*</u>	
	1997	\$10,000
Forest Engineering Research Institute of		
log trailers)	1995-1996	\$12,000
Via Rail Ltd. (Contract) (Testing of banki	,	
	1995-1996	\$8,500
Canadian Department of Foreign Affairs		hanh T., Lee S.,
Poursartip A., Lo, J.) (Canada-Japan worksl		Φ <b>25</b> (00
	1996-1997	\$35,600
<b>Bombardier Services Division</b> (Second Ca	<u> </u>	<b>6500</b>
MDD I 41 and Canadian Const.	1998	\$500 \$132,000
MPB Ltd. and Canadian Space Agency	2005-2011	\$132,000
Canadian Foundation for Innovation:	with V. Vice P. Coneson) 1000	\$290 000
(Innovative Testing Facilities for Materials	· · · · · · · · · · · · · · · · · · ·	\$280,000
Canadian Foundation for Innovation (International Technology - member of group for the Univ		\$12,500,000
Canadian Foundation for Innovation (Inf		
polymer composites and nanocomposites)	2008	\$2,300,000
Support from Gestion Valeo	2002-2004	\$90,000
Composite rod for reinforcement of concret		Ψ20,000
Instrumentation for resin shrinkage monitor		
Epoxy nanocomposites	~~~ <del>o</del>	
NSERC Engage grant/Ffye	2010-2011	\$25,000
NSERC Engage grant /Rocky Mountain		\$25,000
NSERC Industrial Chair on Automated C		*
	r (with support	

Aerospace, Bell Helicopter Textron Canada Ltd., Emergia Aerospace, Delastek, and Composites Atlantic, and Concordia University)

2012-2017

\$3,200,000

**NSERC CRD grant** on "Helicopter flex beam flappability", with collaborative support from Bell Helicopter Textron, CRIAQ, MDEIE, Indian Institute of Science

2013-2016 \$1,095,000

**NSERC Tools and Instrument grant** (PI M. Hojjati): Laser Unit for Thermoplastic Composite Manufacturing using Automated Fiber Placement", 2013, \$122,000.

**FQRNT equipe grant** (PI W.F. Xie) Collaboration placement de fibres automatisé (PFA) fabrication de structures en composites, 2014-2017, \$230,272.

# PROJECT/THESIS SUPERVISION

Master theses in Progress 10 Doctoral theses in progress 10 Visiting Ph.D students: 2 Master theses finished 47 Doctoral theses finished 30 Post doc currently under supervision: 3

#### GRADUATE STUDENTS WHO HAVE GRADUATED

- 1. Elshakweer M., Master of Engineering, Fatigue life prediction under complex loading, 1981.
- 2. Kennedi L., Master of Applied Science, *An experimental investigation of high contact ratio gear tooth behavior*, 1982.
- 3. Badruddin S., *An improved profile of the railway wheel to minimize residual stresses after severe drag braking*, Master of Applied Science, 1982.
- 4. Robbins W., Master of Engineering, *Damping of composite materials in relation to aircraft interiors*, 19844. Currently with Transport Canada.
- 5. Ishak W., Master of Engineering, *Carbon fiber composites and environmental effect*, 1985. Currently with Bell Helicopter Textron Canada Ltd.
- 6. Shukry M., Master of Engineering, Buckling of glass reinforced filament wound pressure vessels under hydrostatic external pressure, 1985.
- 7. Andreous M., Master of Engineering, Structural repair of composite materials, 1985.
- 8. Huang Q., Ph.D., Three dimensional composite finite elements for stress analysis of anisotropic laminate structures, 1989.
- 9. Ngo A.D., Ph.D *Effect of liquid absorption on the fatigue behavior of random fiber sheet molding compounds*, 1989. Currently Professor at the Department of Mechanical Engineering at Ecole de Technologie Superieure.
- 10. Lucking W., Ph.D., Analysis of edge problems in statically loaded fiber reinforced laminated plates by linear elastic theory, 1989. Currently Project Engineer of Being Aircraft.
- 11. Daoust J., Ph.D., *Interlaminar stresses in tapered laminates*, 1989. Current project engineer for the software company making PATRAN.
- 12. Chen J., Master of Applied Science, *Hygrothermal effect on the mechanical properties of polyphenylene sulfide (PPS) composites*, 1990. Currently Manager of Harris Corporation, Shenzhen, China.
- 13. Smith C., Master of Applied Science, Utilization of PVDF sensors to determine impact damage

- in graphite/epoxy plates by acousto-ultrasonic technique, August 1992.
- 14. Molinari M., Master of Engineering, *Fracture of composite materials*, June 1992. Currently with Transport Canada.
- 15. D'Arienzo V., Master of Engineering, *Effect of environment on mechanical behavior of composites*, June 1992. Currently Technical Fellow at Bell Helicopter Textron Ltd.
- 16. Blach S., Master of Applied Science, Kinetics of vinyl ester resins, June 1994.
- 17. Mazumdar S.K., Ph.D, Automated manufacturing of composite components by thermoplastic tape winding and filament winding, 1994. Currently Editor in chief, E-Composites news.
- 18. Han J., Ph.D *Three dimensional multilayer composite finite element method for stress analysis of composite laminates*, 1994.
- 19. Hojjati M., Ph.D, *Curing of thick thermoset composites: experiment, simulation and scaling,* 1994. Currently Professor at Concordia University, Canada.
- 20. Dudley N., Master of Applied Science, *Performance evaluation of filament wound tubes after long term exposure to aggressive environment*, June 1995.
- 21. Kim Y.S., *Ph.D, Biaxial buckling of laminated composite plates*, 1995. Currently Professor in Mechanical Engineering, Pusan University, Korea.
- 22. Zhang S., Ph. D, co-supervised with Dr. R. Ganesan, *Development of a hybrid knowledge based system for condition monitoring and diagnosis of rotating machinery*, 1995.
- 23. Wang Y., Master of Applied Science, co-supervised with Dr. M. Osman, *Cutting behavior of composite prepregs*, June 1996.
- 24. Vankatesan S., Master of Applied Science, co-supervised with Dr. R. Ganesan, *Finite element analysis for eigen solution variability of non-self-adjoint mechanical systems with stochastic parameters*, 1996.
- 25. Beaudin S., Master of Applied Science, co-supervised with Dr. D. Cheeke, *Surface acoustic wave gas sensor using a SrFeO2.5+x thin film*, 1996.
- 26. El-Karmalawy M., Ph.D, co-supervised with Dr. R. Ganesan, *Fatigue damage characterization* and reliability evaluation for CFRP composites, 1997.
- 27. Chen J., Ph.D, co-supervised with Dr. C.K. Jen, *In-situ cure monitoring and characterization of graphite/epoxy composites using fiber optics and ultrasonics*, 1998. Currently Research Officer at National Research Council of Canada.
- 28. Feng W., Ph.D, Development of partial hybrid finite elements for 3-D global/local analysis of laminated composite structures, 1998. Currently Vice Director, Institute of Mathematics and Applied Mechanics, Shanghai University.
- 29. Balike M., Ph.D, co-supervised with Dr. S. Rakheja, *Enhancement of crashworthiness in cartruck collisions using damped under-ride guard and composite crush elements*, 1998. Currently engineer at Ford Motor.
- 30. Naji, M., Ph.D, *Theoretical and experimental investigation on the manufacturing of composite structures with angle-bend*, 1998. Currently professor at Jordan University of Science and Technology.
- 31. Zhao J., Master of Applied Science, co-supervised with Dr. X.R. Xiao *Evaluation of efficiency of partial hybrid finite element analysis using composite laminates with crack*, 1998. Currently Ph.D. student at Concordia University, and engineer at ANRAD, Montreal.
- 32. Yong Y., Master of Applied Science, Characterization of braided composites, Jan. 1999.

- Currently engineer at CAE Ltd. in Montreal.
- 33. Dilunovic M., Master of Applied Science, co-supervised with Dr. X.R. Xiao, *Development of composite material with special dielectric properties*, Feb. 1999.
- 34. Al-Omari A., Master of Applied Science, *Vacuum assisted resin transfer molding of composites*, April 1999.
- 35. Rohrauer G., Ph.D, *Design of very high pressure composite pressure vessels*, August 1999. Currently Associate Professor at Department of Mechanical Engineering at Ontario University Institute of Technology.
- 36. Zhang C. Ph.D, co-supervised with Dr. R. Ganesan, *Stochastic model for delamination of composite laminates*, June 2001. Currently engineer at Pratt & Whitney Canada Ltd.
- 37. Kan He, Ph.D, co-supervised with Dr. R. Ganesan, *Interlaminar stresses and fracture behavior in thickness-tapered composite laminates*, February 2002. Currently composite engineer at Chrysler Ltd in Detroit.
- 38. Dafu Shen, Master of Engineering, co-supervised with Dr. M.T. Ton-That, *Epoxy nanocomposites*, August 2002.
- 39. Yu Xin, M.A.Sc., Stress analysis of composite reinforcing rod in concrete, 2003.
- 40. Lei Shenggong, M.A.Sc., co-supervised with Dr. M.T. Ton-That, *Polypropylene nanocomposites using different clays and coupling agents*, 2003.
- 41. Qi Zhao, Ph.D., *Finite element development for triax composites*, 2004. Current project engineer at Shanghai Aircraft company, China.
- 42. Jiang Yujin, M.A.Sc., *A novel method for the manufacturing of thick glass/polyestser composites*, 2004. Currently process engineer at Shanghai Aircraft Company, China.
- 43. Wang H., M.A.Sc., cosupervised with Dr. P. Wood-Adams, *The study of clay/epoxy nanocomposites: Their synthesis, microstructures, and properties,* 2004. Currently composites lab manager at Concordia University.
- 44. Xu D., Ph.D, co-supervised with Dr. R Ganesan, *Buckling analysis of triaxial woven composite structures*, 2004.
- 45. Shaikh H., M. Eng. Effect of addition of nanoclay on the adhesive properties of a common epoxy adhesive, 2004.
- 46. Pathwary M., M.Eng., Characteristics of void formation in RTM process, 2004.
- 47. Liu W., Ph.D, cosupervised with M. Pugh, "*Epoxy/clay nanocomposites for structural applications*", 2005. Currently Vice-chief engineer responsible for composites, Shanghai aircraft company, Shanghai, China.
- 48. Hassan S., M.A.Sc., "Characterisation and mechanical properties of thermoplastic composites", April 2005. Currently research engineer, Bombardier Aerospace Ltd.
- 49. Lebel L., M.A.Sc., "Manufacturing of braided thermoplastic composites with commingled fibers", May 2005. Currently project engineer at Bombardier Aerospace.
- 50. Yuan Xu, M.A.Sc., "Composite materials with carbon fibers and epoxy nanocomposites", October 2006.
- 51. Ahmed S., M. Eng. "Formation of void during RTM molding of composites", Master of Engineering, 2005.
- 52. Girish Thatte "Development and characterization of self-healing epoxy systems for space applications", M.A.Sc. December 2006.

53. Shilian Hu "Surface finish analysis of composite automotive panels", Ph.D, February 2007.

- 54. Ngo Tri Dung, "Understanding the effect of adding nanoclays into epoxies" Ph.D, June 2007. Currently research officer at National Research Council of Canada, Boucherville, Quebec.
- 55. Derisi J., "Mechanical behavior of tubes made of thermoplastic composites for helicopter applications", Ph.D 2008. Currently research engineer in composites at Bombardier Aerospace.
- 56. Ashraf Fathy, "Development of polymer materials with strong thermal insulation", Ph.D 2009. Currently with the research department of the Egyptian military.
- 57. Spitsina Svetlana, cosupervised with M. Kahrizi, "Packaging of fiber optical sensor for composite strain measurement" M.A.Sc., July 2009.
- 58. Reza Nofar, cosupervised with M. Pugh, "Use of carbon nanotubes to detect failure in glass/epoxycomposites", M.A.Sc., April 2008. Currently Post Doc at Ecole Polytechnique Montreal.
- 59. Ramak Motanedi, cosupervised with N. Sivakumar, "Shearography for detecting defects in composites", M.A.Sc., September 2008. Currently Ph.D student at McGill University.
- 60. Rajpal Chahal, "Shear stress distribution in thin walled tube with polygonal cross section", M.A.Sc., June 2008. Currently engineer at Bombardier Aerospace.
- 61. Mossab El Tahan, M.A.Sc., cosupervised with Khaled Galal, "*Thermoplastic composite rods for the* reinforcement *of concrete*", September 2009.
- 62. Xudong Liu, cosupervised with Minguan Chen, "Cost analysis of manufacturing of composite wing box", M.A.Sc., August 2009.
- 63. Ahmed Kabir, "Effect of clay addition on damping and fatigue properties of glass/epoxy composites", M.A.Sc, 2010.
- 64. Hesna Zamal, "Monitoring fatigue life of composites using carbon nanotubes", M.A.Sc., 2010.
- 65. Khan S., co-supervised with Wen-fang Xie, "Thermal control system design for automated fiber placement process", 2011. Currently engineer at Rolls Royce Canada Ltd.
- 66. Hossein Sinaei, ". Effect of addition of carbon nanotubes on thermal conductivity of epoxies", M.Eng., 2011. Currently Ph.D student at University of Alberta.
- 67. Mohamed Mohiuddin, *Effect of pressure and temperature on the electrical conductivity of polyetheretherketone*", Ph. D, 2012.
- 68. Farjad Shadmehri, "Mechanical behavior of thermoplastic composite cones made by automated fiber placement process", Ph.D, 2012. Currently industrial post doc at Bombardier Aerospace and Concordia.
- 69. Xiao Cai, "Effect of laps and gaps on the mechanical properties of thermoplastic composites made by automated fiber placement process", M.A.Sc., 2012. Currently pursuing joint Ph.D at Concordia and Bombardier Aerospace.
- 70. Roham Mactabi, "Monitoring fatigue degradation of adhesive bonded joints using carbon nanotubes" MASc., 2012.
- 71. Pooya Rowghanian, M.A.Sc., "Optimization of the temperature distribution in thick composites during manufacturing using carbon nanotubes", MASc., 2012-.
- 72. Ruoshi Tong, "Cost analysis for the manufacturing of L shape composite pieces using autoclave and out-of-autoclave composites". M.A.Sc. 2012.
- 73. Mohamed El-Geuchy, Ph.D., "Stiffness behavior of composite tubes", April 2013. Currently

- research officer with the Egyptian military.
- 74. Sina Chaeichian, Ph.D, cosupervised with P. Wood Adams, "A novel thermoplastic/clay/thermoset system for toughening of unsaturated polyester", October 2013.
- 75. Kulbir Singh Madhok, M.A.Sc., "Comparative characterization of out-of-autoclave materials by automated fiber placement and hand lay up processes", November 2013.
- 76. Alexandar Grujicic, M.A.Sc.. "Fatigue of carbon/epoxy modified with carbon nanotubes", April 2014.
- 77. Ali Naghashpour, Ph.D, "Damage detection in composite structures using carbon nanotubes", April 2014-.

#### GRADUATE STUDENTS AND POST DOCS CURRENTLY SUPERVISED

- 1. Asgar Khan, Ph.D, "Optimization of microcapsules for the self-healing of composites for space applications", 2009-.
- 2. Xiao Cai, Ph.D., "Optimization of aircraft structures made of composite materials" from 2012-
- 3. Mohamed Selmy, Ph.D, "Effect of nanoclay addition on the fatigue behavior of thick tapered composite laminates", from 2010-.
- 4. Alireza Gorjipoor, Ph.D., co supervised with R. Ganesan, "Stress analysis and deformation of thick composite laminates subjected to bending loading", from 2013-
- 5. Jeffrey Simpson, M.A.Sc. "New method for making holes using automated fiber placement process", from 2010-.
- 6. Hossein Ghayoor, M.A.Sc., "Understanding residual stresses and deformation in flat plate thermoplastic composites made by automated fiber placement process", 2011-
- 7. Dina Alizadeh, M.A.Sc., co supervised with W.F. Xie "Use of thermal imaging for the fatigue study in thick composite laminates", from 2013.
- 8. Hoang Minh Duc, M.A.Sc.," *Effect of process conditions on the manufacturing of thermoplastic composite plates using automated fiber placement process*", from 2012.
- 9. Hamidreza Yazdani, Ph.D, "Stress analysis of curved composite tubes", from 2013.
- 10. Song Chonghui, M.A.Sc., "Development of manufacturing procedure for curved composite tubes for helicopter landing gear application", from 2012.
- 11. Sima Nabivizadeh, M.A.Sc., "Behavior of electrically conductive adhesives subjected to high electrical current", from 2012.
- 12. Xiangming Zhang, Ph.D., "Development of algorithm for the automated fiber placement of complex shapes", from 2011.
- 13. Wendy Xiong, M.A.Sc., "Effect of addition of nanocrystalline cellulose on the properties of thermoplastics", from 2012.
- 14. Amir Bahram Kaganj, Ph.D, co supervised with M. Hojjati, "Thermo stamping of thermoplastic composites", from 2013.
- 15. Junfei Li, Ph.D, "Effect of fiber steering in composite laminates", from September 2013.
- 16. Sara Mamani, MASc., "Residual stresses due to curing of thick laminates", from September 2014.
- 17. Reza Ahani, MASc, co supervised with M. Hojjati, "Stress analysis of Z pinned laminates", from September 2014.

18. Yasser Elsherbini, Ph.D, "Fatigue of laminates with laps and gaps", from September 2013.

- 19. Hamid Hanini, Ph.D, "Fatigue crack initiation in thick composites", from September 2014.
- 20. Alina Saha, MASc,, co-supervised with W.F. Xie "Control system for AFP process", from September 2014.
- 21. Anqi Dong, visiting PhD student from Behang university, from 2013.
- 22. Xianyang Zhang, visiting Ph.D student from Nanjing University of Aeronautics and Astronautics, from September 2014.
- 23. Farjad Shadmehri, Post Doc. "Development of non-destructive testing method for composites made by automated fiber placement process", from 2012.
- 24. Mohamed Rouhi, Post Doc., "Optimization of aircraft structures using fiber steering", from 2012.
- 25. Ali Naghashpour, Post Doc, "Technique for defect detection, location and quantification in composite structures", from April 2014

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