

## **CURRICULUM VITAE**

**Ramin Sedaghati, Ph.D., P.Eng., FASME, FCSME, AFAIAA**  
**Professor**

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## 1. INFORMATION

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**NAME:** RAMIN SEDAGHATI  
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**Immigration Status:** Canadian Citizen

## 2. ACADEMIC DEGREES

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- **PhD in Mechanical Engineering**  
University of Victoria, B.C., Canada 1997-2000  
Thesis title: *Investigations in Structural Optimization of Nonlinear Problems Using the Finite Element Method.*
- **MASc in Mechanical Engineering**  
Amirkabir University of Technology, Tehran, Iran 1988 -1990  
Thesis title: *Stress and Thermal Analysis of Cylindrical Shells under Thermal and Mechanical Shock Using the Galerkin Finite Element Method*
- **BASc in Mechanical Engineering**  
Amirkabir University of Technology, Tehran, Iran 1984 -1988  
Project title: *Computer Design of Different Kinds of Conveyer Belts*

## 3. EMPLOYMENT HISTORY

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### 3.1. Academic

|  |                      |
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| Full Professor<br>University of Concordia, Montreal, Canada      | June 2011-           |
| Associate Professor<br>University of Concordia, Montreal, Canada | June 2006-May 2011   |
| Assistant Professor  | August 2001-May 2006 |

**University of Concordia, Montreal, Canada**

**Administrative Positions in Concordia:**

|                                       |                    |
|---------------------------------------|--------------------|
| <b>Undergraduate Program Director</b> | June 2006-May 2008 |
| <b>Co-op Program Director</b>         | June 2003-May 2006 |

***Courses taught in Concordia: (taught 51 sections of 10 different courses)***

**Undergraduate Courses:**

Machine Elements Design (MECH 344, previously MECH 441)  
Finite Element Analysis (MECH 460)  
Theory of Machine (MECH 343)  
Mechanical Vibration (MECH 443)  
Mechanics of Material (ENGR 244)  
Mechanical Engineering Design Project (MECH 390)- (I introduced and developed the course)

**Average evaluation: 1.7** (1- Excellent, 2.5- Average, 5- Poor)

**Graduate Courses:**

Vibrations in Machines and Structures (ENGR 6311)  
Random Vibrations (ENGR 7331)  
Optimum Design of Mechanical Systems (MECH 6321)  
Nonlinear Finite Element Method in Solids and Structures (MECH 691R)-(I developed the course)  
Engineering Analysis of Smart Materials and Structures (MECH 6341)- (I developed the course)

**Average evaluation: 1.3** (1- Excellent, 2.5- Average, 5- Poor)

**Course and Lab Instructor, Research and Teaching Assistant**

|   |           |
|---|-----------|
| <b>University of Victoria, Victoria, B.C., Canada</b> | 1998-2000 |
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***Course taught in Victoria:***

Finite Element Applications (MECH 420)  
Lab instructor of Solid Mechanics and Machine Dynamics

**Instructor (part time)**

|                                      |            |
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| <b>Azad University, Tehran, Iran</b> | 1993 –1995 |
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***Courses taught:***

Strength of Materials (Solid Mechanics)  
Vehicle Dynamics and Chassis Design  
Design of Machine Tools  
Methods of Production and Manufacturing  
Vibration

### **3.2. Industry**

#### **Senior Design Engineer**

**Supplying Automotive Parts Company (SAPCO), Tehran, Iran** 1994-1997

- Stress, modal and crashworthiness analysis of different local automotive parts using available commercial finite element softwares
- Developed computer programs for fast automated design of different auto parts
- Taught Finite Element Method to Junior Engineers
- Interfaced with clients on design and manufacturing issues

#### **Design Engineer**

**Heavy Machine Tools Company, Tehran, Iran** 1991- 1994

- Prepared and checked detailed design drawings
- Stress analysis of different mechanical equipment
- Evaluated and selected materials and manufacturing methods for different parts of machine tools
- Prepared calculation book and design reports
- Checked and approved shop drawings

### **4. POST-DOCTORAL TRAINING**

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**Canadian Space Agency (CSA), Saint-Hubert, QC, Canada** 2000-2001

#### **Structural Design and Dynamic Engineer**

- Vibration testing of space components
- Stress and modal analysis of the test model using the commercial finite element software, NASTRAN, and comparing the result of the finite element model with experimental test
- Reduction of overtesting during vibration tests using Force Limited Vibration testing
- Structural design optimization of space components

### **5. HONORS, AWARDS AND FELLOWSHIPS**

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- Nominated by the Faculty of Engineering and Computer Science for President's Excellence in Teaching Award, 2016.
- Recipient of Teaching Excellence Award in Excellence in Teaching in the Faculty of Engineering and Computer Science, Concordia University, June 2015.
- Provost's Circle of Distinction, Concordia University, June 2010
- Fellow, Canadian Society for Mechanical Engineering, since June 2010
- Fellow, American Society of Mechanical Engineers, since June 2012
- Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA)-Since Oct. 2016
- Associate Editor, Journal of Intelligent Material Systems and Structures (2011 – present)
- Recipient of Research Excellence Award in Department of Mechanical and Industrial Engineering at Concordia University, 2005

- Recipient of Canadian Society of Mechanical Engineering Award (Concordia Chapter) for Teaching Excellence, 2005
- Post-Doctoral Visiting Fellowship (NSERC), CSA, 2001.
- Nominated for Governor General's Gold Medal, University of Victoria, 2000.
- Graduate and Teaching Fellowships, University of Victoria, 1997-2000

## **6. PROFESSIONAL ENGINEERING REGISTRATION**

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Licensed Professional Engineer

Association of Professional Engineers of Ontario (PEO), Sept. 12, 2003-present

## **7. SCIENTIFIC SOCIETY MEMBERSHIPS**

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Fellow, Canadian Society for Mechanical Engineering (CSME)-Since June 2010

Fellow, American Society of Mechanical Engineers (ASME)-Since June 2012

Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA)-Since 2016

## **8. RESEARCH FIELDS AND AREAS OF INTEREST**

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- Smart Materials and Adaptive Structures
- Adaptive Vibration Absorbers Featuring Smart Magneto-rheological Materials
- Smart Composite Structures
- Structural Design Optimization and Multidisciplinary Design Optimization
- Passive, Semi-active and Active Vibration Control of Structures
- Computational Mechanics using Finite Element Method (Stress, Thermal and Modal Analysis)
- Structural Dynamics
- Structural Health Monitoring

## 9. PUBLICATIONS

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*NOTE: Graduate Student co-authors are bolded.*

### **9.1. Refereed Journal Papers Published or Accepted**

- J1) **Elneshtar, G.**, Bhat, R. and Sedaghati, R., "Modeling Pavement Damage and Predicting Fatigue Cracking of Flexible Pavements Based on a Combination of Deterministic Method with Stochastic Approach Using Miner's Hypothesis," Journal of Springer Nature (SN) Applied Sciences, 1:229, 2019. <https://doi.org/10.1007/s42452-019-0238-5>
- J2) **Muftah, S.**, Sedaghati, R. and Bhat, R., "Design optimization of a Bi-fold MR Energy Absorber Subjected to Impact Loading for Skid Landing Gear Applications," Journal of Smart Material and Structures, ID: SMS-106938, accepted August 2018, in-press, <https://doi.org/10.1088/1361-665X/aadb33>.
- J3) **Dargahi, A.**, Sedaghati, R. and Rakheja, S. "On the Properties of Magnetorheological Elastomers in Shear Mode: Design, Fabrication and Characterization," International Journal of Composites Part B: Engineering, Vol. 159, pp. 269-283, Feb. 2019.
- J4) **Hadadian, A.** and Sedaghati, R., "Investigation on Thermal Relaxation of Residual Stresses Induced in Deep Cold Rolling of Ti-6Al-4V Alloy," International Journal of Advanced Manufacturing Technology, Vol. 100, No. 1-4, pp. 877-893, 2019
- J5) **Dargahi, A.**, Rakheja, S. and Sedaghati, R., "Development of a Field-Dependent Prandtl-Ishlinskii Model for Magnetorheological Elastomers," Journal of Materials and Design, ID: JMAD-D-18-06032, Submitted October 2018, accepted Jan. 2019.
- J6) Liu, J., Chen, T., Zhang, Y., Wen, G., Qing, Q., Wang, H., Sedaghati, R., and Xie Y. M., "On Sound Insulation of Pyramidal Lattice Sandwich Structure," Journal of Composite Structures, Vol. 208, pp. 385-394, Jan. 2019.
- J7) **Muftah, S.**, Sedaghati, R. and Bhat, R., "Dynamic Analysis of a SDOF Helicopter Model Featuring Skid Landing Gear and MR Damper by Considering Rotor Lift Factor and Bingham Number," Journal of Smart Material and Structures, Vol. 27, No. 6, 065013 (15pp), May 2018
- J8) **Sadeghifar, M.**, Sedaghati, R., Jomaa, W. and Songmene, V., "A comprehensive review of finite element modeling of orthogonal machining process: Chip formation and surface integrity predictions," International Journal of Advanced Manufacturing Technology, Vol. 96, No. 9-12, pp. 3747-3791, 2018.
- J9) **Shamieh, H.** and Sedaghati, R., "Development, Optimization and Control of a Novel Magnetorheological Brake with no Zero-Field Viscous Torque for Automotive Applications," Journal of Intelligent Material Systems and Structures, Vol. 29, No. 16, pp. 3199-3213, 2018.

- J10) **Singh, A., Yang, F.** and Sedaghati, R., "Design Optimization of Stiffened Panels using Finite Element Integrated Force Method," *Engineering Structures*, Vol. 159, pp. 99-109, March 2018.
- J11) **M. Sadeghifar,** R. Sedaghati, W. Jomaa, V. Songmene, "Finite Element Analysis and Response Surface Method for Robust Multi-Performance Optimization of Radial Turning of Hard 300M Steel," *International Journal of Advanced Manufacturing Technology*, Vol. 94, No. 5-8, pp. 2457-2474, Feb. 2018.
- J12) **Yang, F.,** Sedaghati, R., Esmalizadeh, E., "Free In-Plane Vibration of Curved Beam Structures: A Tutorial and State-of-the-Art," *Journal of Vibration and Control (JVC)*, Vol. 24, No. 12, pp. 2400-2417, 2018.
- J13) **Shamieh, H.** and Sedaghati, R., "Multi-Objective Design Optimization and Control of Magnetorheological Fluid Brake for Automotive Applications," *Journal of Smart Materials and Structures*, Vol. 26, No. 12, 125012 (15pp), Nov. 2017.
- J14) **Hemmatian, M.** and Sedaghati, R., "Vibro-Acoustic Topology Optimization of Sandwich Panels Partially Treated with MR Fluid and Silicone Rubber Core Layer," *Journal of Smart Materials and Structures*, Vol. 26, No. 12, 125015 (19pp), Nov. 2017.
- J15) **Hemmatian, M.** and Sedaghati, R., "Sound Transmission Analysis of MR Fluid based-Circular Sandwich Panels: Experimental and Finite Element Analysis," *Journal of Sound and Vibration*, Vol. 408, pp. 43-59, Nov. 2017.
- J16) **Khorrani, H.,** Rakheja, S. and Sedaghati, R., "Vibration Behavior of a Two-Crack Shaft in a Rotor Disk-Bearing System," *Mechanism and Machine Theory*, Vol. 13, pp. 67-84, July 2017.
- J17) **Hemmatian, M.** and Sedaghati, R., "Effect of Applied Magnetic Field on Sound Transmission Loss of MR-based Sandwich Panels," *Journal of Smart Materials and Structures*, Vol. 26, No. 2, 025006(12pp), 2017.
- J18) **Zeinoun, G.,** Sedaghati, R. and Aghili, F., "Optimum Design Parameters of Reconfigurable Robots with Lockable Joints," *Transactions of the Canadian Society for Mechanical Engineering*, Vol. 41, No. 1, 2017.
- J19) **Eshaghi, M.,** Sedaghati, R. and Rakheja, S., "Vibration Analysis and Optimal Design of Multi-layer Plates Partially Treated with the MR fluid," *Journal of Mechanical Systems and Signal Processing*, Vol. 82, No. 1, pp. 80-102, Jan. 2017.
- J20) **Eshaghi, M.,** Sedaghati, R. and Rakheja, S., "Analytical and Experimental Free Vibration Analysis of Multi-Layer MR-Fluid Circular Plates under Varying Magnetic Flux," *Composite Structures*, Vol. 157, pp. 78-86, Dec. 2016.

- J21) **Eshaghi, M.**, Sedaghati, R. and Rakheja, S., "Dynamic Characteristics and Control of MR/ER Sandwich Structures: A State-of-the-Art Review," *Journal of Intelligent Material Systems and Structures*, Vol. 27, No. 15, pp. 2003-2037, 2016.
- J22) **Abouobaia, E. S.**, Bhat, R. and Sedaghati, R., "Development of a New Torsional Vibration Damper Incorporating Centrifugal Pendulum Absorber and Magnetorheological Damper," *Journal of Intelligent Material Systems and Structures*, Vol. 27, No. 7, pp. 980-992, April 2016.
- J23) **Esteki, K.**, Bagchi, A. and Sedaghati, R., "Semi-Active Control of Seismic Response of a Building using MR Fluid-based Tuned Mass Damper," *International Journal of Smart Structures and Systems*, Vol. 16, No. 5, 2015.  
DOI: <http://dx.doi.org/10.12989/sss.2015.16.5.000>
- J24) **Eshaghi, M.**, Sedaghati, R. and Rakheja, S., "The Effect of MR Fluid on Vibration Suppression Capability of Adaptive Sandwich Plates: Experimental and Finite Element Analysis," *Journal of Intelligent Material Systems and Structures*, Vol. 26, No. 14, pp. 1920-1935, Sept. 2015.
- J25) **Eshaghi, M.**, Rakheja, S. and Sedaghati, R., "An Accurate Technique for Pre-yield Characterization of MR Fluids," *Journal of Smart Materials and Structures*, Vol. 24, No. 6, 065018 (13pp), June 2015.
- J26) **Yang, F.**, Sedaghati, R. and Esmailzadeh, E., "Optimal Design of Distributed Tuned Mass Dampers for Passive Vibration Control of Structures," *Journal of Structural Control and Health Monitoring*, Vol. 22, No. 2, pp. 221-236, Feb. 2015.
- J27) **Amezquita-Sanchez, J. P.**, Domiguez-Gonzalez, A., Sedaghati, R., Romero-Troncoso, R. J., and Osornio-Rios, R. A., "Vibration Control on Smart Civil Structures: A Review," *Mechanics of Advanced Materials and Structures*, Vol. 21, No. 1, pp. 23-38, Jan. 2014.
- J28) **Esteki, K.**, Bagchi, A. and Sedaghati, R., "Dynamic Analysis of Electro and Magneto-Rheological Fluid Dampers using the Duct Flow Models," *Smart Materials and Structures*, Vol. 23, No. 3, 035016 (11pp), March 2014.
- J29) **Mohammadi, F.**, Sedaghati, R., Bonakdar, A., "Finite Element Analysis and Design Optimization of Low Plasticity Burnishing Process," *International Journal of Advanced Manufacturing Technology*, Vol. 70, No. 5-8, pp. 1337-1354, Feb. 2014.
- J30) **Hadadian, A.**, Sedaghati, R. and Esmailzadeh, E., "Design optimization of Magnetorheological Fluid Valves using Response Surface Method," *Journal of Intelligent Material Systems and Structures*, Vol. 25, No. 11, pp. 1352-1371, Feb. 2014.



- J31) **Dominguez, A.**, Stiharu, I. and Sedaghati, R., "Practical Hysteresis Model for Magneto-Rheological Dampers," *Journal of Intelligent Material Systems and Structures*, Vol. 25, No. 8, pp. 967-979, May 2014.
- J32) **Abdelsalam, R. O.** and Sedaghati, R., "Coupled Thermo-Mechanical Analysis of Autofrettaged and Shrink fitted Compound Cylindrical Shells," *ASME Transactions-Journal of Pressure Vessel Technology*, Vol. 136, No. 1, pp. 011204-1:12, February 2014.
- J33) **Yang, F.**, Sedaghati, R. and Esmailzadeh, E., "Vibration Suppression of Curved Beam-Type Structures using Optimal Multiple Tuned Mass Dampers," *Journal of Vibration and Control (JVC)*, Vol. 20, No. 6, pp. 859-875, April 2014.
- J34) **Garcia-Perez, A., Amezcua-Sanchez, J. P.,** Dominguez-Gonzalez, A., Sedaghati, R., Osornio-Rios, R., Romero-Troncoso, R. J. "Fused empirical mode decomposition and wavelets for locating combined damage in a truss-type structure through vibration analysis," *Journal of Zhejiang University SCIENCE A*, Vol. 14, No. 9, pp. 615-630, Sept. 2013.
- J35) **Abdelsalam, R. O.** and Sedaghati, R., "Design Optimization of Compound Cylinders Subjected to Autofrettage and Shrink-Fitting Processes," *ASME Transactions-Journal of Pressure Vessel Technology*, Vol. 135, No. 2, pp: 021209-1:11, April 2013.
- J36) **Grewal, J. S.**, Sedaghati, R. and Esmailzadeh, E., "Vibration Analysis and Design Optimization of Sandwich Beams with Constrained Viscoelastic Core Layer ," *Journal of Sandwich Structures and Materials*, Vol. 15, No. 2, pp. 203-228, March 2013.
- J37) **Mohammadi, F.** and Sedaghati, R., "Vibration Analysis and Design Optimization of Sandwich Cylindrical Panels Fully and Partially Treated with Electrorheological Fluid Materials," *Journal of Intelligent Material Systems and Structures*, Vol. 23, No. 15, pp. 1679-1697, October 2012.
- J38) **Mohammadi, F.** and Sedaghati, R., "Nonlinear Free Vibration Analysis of Sandwich Shell Structures with Constrained Electrorheological Fluid Layer," *Journal of Smart Materials and Structures*, Vol. 21, No.7, 075035 (18pp), July 2012.
- J39) **Mohammadi, F.** and Sedaghati, R., "Dynamic Mechanical Properties of an Electrorheological Fluid under Large Amplitude Oscillatory Shear Strain," *Journal of Intelligent Material Systems and Structures*, Vol. 23, No. 10, pp. 1093-1105, July 2012.
- J40) **Mohammadi, F.** and Sedaghati, R., "Vibration Analysis and Design Optimization of Viscoelastic Sandwich Cylindrical Shell," *Journal of Sound and Vibration*, Vol. 331, |No. 12, pp. 2729-2752, June 2012.

- J41) **Mohammadi, F.** and Sedaghati, R., "Linear and Nonlinear Vibration Analysis of Sandwich Cylindrical Shell with Constrained Viscoelastic Core Layer," International Journal of Mechanical Sciences, Vol. 54, No. 1, pp. 156-171, January 2012.
- J42) **Mohammadi, F.** and Sedaghati, R., "Effect of Pressure and Temperature on the Vibration Behavior of Sandwich Cylindrical Shells," Journal of Sandwich Structures and Materials, Vol. 14, No. 2, pp. 157-180, March 2012.
- J43) **Moghaddas, M.,** Esmailzadeh, E., Sedaghati, R. and Khosravi, P., "Vibration Control of the Timoshenko Beam Traversed by Moving Vehicle using Optimized Tuned Mass Damper, Journal of Vibration and Control, Vol. 18, No. 6, pp. 757-773, May 2012.
- J44) **Rajamohan, V.,** Sedaghati, R. and Rakheja, R., "Optimal Vibration Control of Beams with Total and Partial MR-Fluid Treatments," Journal of Smart Materials and Structures, Vol. 20, No. 11, 115016 (12pp), November 2011.
- J45) **Hesham, K.,** Sedaghati, R. and Medraj, M., "Crashworthiness Improvement of a Pickup Truck's Chassis Frame using Pareto-Front and Genetic Algorithm," International Journal of Heavy Vehicle Systems, Vol. 18, No.1, pp. 83-103, March 2011.
- J46) **Rajamohan, V.,** Sedaghati, R. and Rakheja, S. "Optimum Design of a Multilayer Beam Partially Treated with Magnetorheological Fluid," Journal of Smart Materials and Structures, Vol. 19, No. 6, 065002 (15pp), June 2010.
- J47) **Rajamohan, V.,** Rakheja, S. and Sedaghati, R. "Vibration Analysis of a Partially Treated Multi-layer Beam with Magnetorheological Fluid," Journal of Sound and Vibration, Vol. 329, No. 17, pp. 3451-3469, August 2010.
- J48) **Chintapalli, S.,** Elsayed, M. S. A., Sedaghati, R. and Abdo, M., "The Development of a Preliminary Structural Design Optimization Method of an Aircraft Wing-Box Skin-Stringer Panels," Journal of Aerospace Science and Technology, Vol. 14, No. 3, pp. 188-198, April-May 2010.
- J49) **Yang, F.,** Esmailzadeh, E. and Sedaghati, R., "Optimal Vibration Suppression of Structures Under Random Base Excitation Using Semi-Active Mass damper, ASME Transactions- Journal of Vibration and Acoustics, Vol. 132, No. 4, 041002 (10pp), August 2010
- J50) **Rajamohan, V.,** Sedaghati, R. and Rakheja, S., "Vibration Analysis of a Multi-layer Beam containing Magnetorheological Fluid," Journal of Smart Materials and Structures, Vol. 19, No. 1, 015013 (12pp), January 2010.
- J51) **Yang, F.,** Esmailzadeh, E. and Sedaghati, R., "Optimal Vibration Control of Beam-type Structures using Multiple-Tuned-Mass-Dampers," Proceedings of the Institution of

- Mechanical Engineers-Part K, Journal of Multi-body Dynamics, Vol. 224, No. 2, pp. 191-202, June 2010.
- J52) **Elsayed, M. S. A.**, Sedaghati, R. and Abdo, M., "Accurate Stick Model Development for Static Analysis of Complex Aircraft Wing-Box Structures," AIAA Journal, Vol. 47, No. 9, pp. 2063-2075, September 2009.
- J53) **Moghaddas, M.**, Sedaghati, R., Esmailzadeh, E. and Khosravi, P., "Finite Element Analysis of a Timoshenko Beam Traversed by a Moving Vehicle," Proceedings of the Institution of Mechanical Engineers, Part K, Journal of Multi-body Dynamics, Vol. 223, No. 3, pp. 231-243, September 2009.
- J54) **Alam, M.**, Sedaghati, R., Soucy, Y. and Bhat, R., "Analytical and Experimental Study using Output-Only Modal Testing for On-Orbit Satellite Appendages," Journal of Advances in Acoustics and Vibration, Vol. 2009, doi: 10.1155/2009/538731 (10pp), 2009.
- J55) **Yang, F.**, Sedaghati, R. and Esmailzadeh, E., "Optimal Vibration Suppression of Timoshenko Beam with Tuned Mass Damper using Finite Element Method," ASME Transactions-Journal of Vibration and Acoustics, Vol. 131, No. 3, 031006 (8 pages), June 2009.
- J56) **Yang, F.**, Sedaghati, R. and Esmailzadeh, E., "Development of LuGre Friction Model for Larger-scale Magnetorheological Fluid Dampers," Journal of Intelligent Material Systems and Structures, Vol. 20, No. 8, pp. 923-937, May 2009.
- J57) **Yang, F.**, Sedaghati, R. and Esmailzadeh, E., "Vibration Suppression of Non-uniform Curved Beams under Random Loading using Optimal Tuned Mass Damper," Journal of Vibration and Control, Vol. 15, No. 2, pp. 233-261, February 2009.
- J58) **Khosravi, P.**, Ganesan, R. and Sedaghati, R., "Optimization of Thin-Walled Structures with Geometric Nonlinearity for Maximum Critical Load using Optimality Criteria," Journal of Thin-Walled Structures, Vol. 46, No. 12, pp. 1319-1328, December 2008.
- J59) **Yang, F.**, Sedaghati, R. and Esmailzadeh, E., "Free In-plane Vibration of General Curved Beams using Finite Element Method," Journal of Sound and Vibration, Vol. 318, No. 4-5, pp. 850-867, December 2008.
- J60) **Khosravi, P.** and Sedaghati, R., "Local Buckling and Mode Switching in the Optimum Design of Stiffened Panels," AIAA Journal, Vol. 46, No. 6, pp. 1542-1548, June 2008.
- J61) **Khosravi, P.** and Sedaghati, R., "Design of Laminated Composite Structures for Optimum Fiber Directions and layer Thickness using Optimality Criteria," Journal of Structural and Multidisciplinary Optimization, Vol. 36, No.2, pp. 159-167, August 2008.

- J62) **Khosravi, P.**, Ganesan, R. and Sedaghati, R., "An Efficient Facet Shell Element for Co-rotational Nonlinear Analysis of Thin and Moderately Thick Laminated Composite Structures," *Journal of Computers and Structures*, Vol. 86, No.9, pp. 850-858, May 2008.
- J63) **Dominguez, A.**, Sedaghati, R. and Stiharu, I. "Modeling and Application of MR Dampers in Semi-Adaptive Structures," *Journal of Computers and Structures*, Vol. 86, No. 3-5, pp. 407-415, Feb. 2008.  
This paper was enlisted among "The hottest articles" for April-June 2008 by *Computers and Structures*. <http://top25.sciencedirect.com/subject/mathematics/16/journal/computers-structures/00457949/archive/18>.
- J64) **Zabihollah, A.**, Sedaghati, R. and Ganesan, R., "Active Vibration Suppression of Smart Laminated Beams using Layerwise Theory and Optimal Control Strategy," *International Journal of Smart Materials and Structures*, No. 6, Vol. 16, pp. 2190-2201, Oct. 2007.
- J65) **Khosravi, P.**, Sedaghati, R. and Ganesan R., "Optimization of Stiffened Panels Considering Geometric Nonlinearity," *Journal of Mechanics of Materials and Structures*, Vol. 2, No. 7, pp. 1249-1265, 2007.
- J66) **Khosravi, P.**, Sedaghati, R. and Ganesan, R., "Optimization of Geometrically Nonlinear Thin Shells Subject to Displacement and Stability Constraints," *AIAA Journal*, Vol. 45, No. 3, pp. 684-692, 2007.
- J67) **Khosravi, P.**, Ganesan R. and Sedaghati, R., "Co-rotational Nonlinear Analysis of Thin Plates and Shells using a New Shell Element," *International Journal for Numerical Methods in Engineering*, Vol. 69, No. 4, pp. 859-885, 2007.
- J68) **Sattari, H.**, Sedaghati, R. and Ganesan, R., "Analysis and Design Optimization of Deep Drawing Process-Part II: Optimization," *Journal of Materials Processing Technology* Vol. 184, No. 1-3, pp. 84-92, 2007.
- J69) **Sokhanvar, S., Zabihollah, A., and Sedaghati, R.**, "Investigating the Effect of the Orthotropic Property of Piezoelectric PVDF," *Transaction of Canadian Society for Mechanical Engineering*, Vol. 31, No. 1, pp. 111-125, 2007.
- J70) Dargahi, J., Sedaghati, R., Singh, H. and Najarian S., "Modeling and Testing of an Endoscopic Piezoelectric-based Tactile Sensor," *Mechatronics*, Vol. 17. No. 8, pp. 462-467, 2007.
- J71) **Zabihollah, A.**, Ganesan, R. and Sedaghati, R., "Sensitivity Analysis and Design Optimization of Smart Laminated Beams Using Layerwise Theory," *International Journal of Smart Materials and Structures*, Vol. 15, No. 6, pp. 1775-1784, 2006.
- J72) **Jha, A.**, Sedaghati, R. and Bhat, R., "Analysis and Dynamic Testing of Structures Subjected to Vibration and Shock Using Scale Models", *The Canadian Aeronautics and Space Journal (CASJ)*, Vol. 52 (3), pp. 95-108, 2006.

- J73) Sedaghati, R., **Zabihollah, A.** and **Ahari, M.**, "Sensitivity Analysis and Optimal Design of Smart Piezolaminated Composite Beams," AIAA Journal, Vol. 44, No. 12, pp. 2987-2996, 2006.
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- J100) **El Bouzouiki, M.**, Sedaghtai, R. and Stiharu, I., "A Non-Uniform Cellular Automata Framework for Topology and Size Optimization of Truss Structures," Journal of Engineering optimization.
- J101) **Elneshar, G.**, Bhat, R. and Sedaghati, R., "Modeling and Dynamic Analysis of a Vehicle-Flexible Pavement Coupled System Subjected to Road Surface Excitation," submitted to Journal of Mechanical Science and Technology, Submitted Nov. 2018.
- J102) **Campillo, M.**, Sedaghati, R. and Drew, R., "The Development of a Representative Volume Element to Estimate the Young's Modulus of CP-Ti Open Foams with Randomly Generated Distribution of Pores using Finite Element Method," Journal of Computer Methods in Applied Mechanics and Engineering, ID: CMAME-D-19-00315, Submitted Feb. 2019

### **9.3. Chapter in Book**

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### **9.4. Patent**

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### **9.5. Refereed Conference Papers**

- C1) **Cai, X., Li, J.,** Hoa, S. and Sedaghati, R., Optimization of Variable Stiffness Composite Cylinders for Maximum Buckling Load and Fundamental Frequency,” The Fourth International Conference on Automated Composites Manufacturing, April 25-26, 2019, Montreal, Canada.
- C2) **Asadi, M.,** Sedaghati, R. and **Hemmatian, M.**, “Characterization of Magneto-Mechanical Properties and Quasi-Static Physical Modelling of MR Elastomers,” 27<sup>th</sup> AIAA/AHS Adaptive Structures Conference, AIAA-2019-3032925, San Diego, California, USA, January 7-11, 2019.
- C3) **Mirmirani, M.,** Aghili, F. and Sedaghati, R., “Control of a Reconfigurable Free-Floating Space Manipulator with Space Booms,” 15<sup>th</sup> International Space Conference of Pacific-Basin Societies (15<sup>th</sup> ISCOPS), Montreal, Canada, July 10-13, 2018.
- C4) **Asadi, M. and** Sedaghati, R., “Modeling of Magneto-Mechanical Response of Magnetorheological Elastomers having Different Arrangement of Magnetic Particles,” Proceedings of the Canadian Society for Mechanical Engineering (CSME) International Congress 2018, York University, Ontario, Canada, May 27-30, 2018.
- C1) **Hemmatian, M.,** Sedaghtai, R. and Rakheja, S., “Linear and Nonlinear Viscoelastic Behavior of MR Fluids: Effect of Temperature,” The ASME2018 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, SMASIS2018-8033, San Antonio, USA, Sept. 10-12, 2018.
- C2) **Dargahi, A.,** Sedaghtai, R. and Rakheja, S., “Static and Dynamic Characterization of Magnetorheological Elastomers under Shear Mode Operation,” The ASME2018 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, SMASIS2018-8209, San Antonio, USA, Sept. 10-12, 2018.



- C5) **Hemmatian M.** and Sedaghati, R. "Semi-Active Sound Transmission Control of Sandwich Panels Treated with MR Fluid Core Layer," 26<sup>th</sup> AIAA/AHS Adaptive Structures Conference, AIAA-2018-2779906, Kissimmee, Florida, USA, January 8-12, 2018.
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- C7) **Saleh, M.**, Sedaghati, R. and Bhat, R., "Crashworthiness Study of Helicopter Skid Landing Gear System Equipped with a Magnetorheological Energy Absorber," The ASME2017 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, SMASIS2017-3755, Snowbird, Utah, USA, Sept. 18-20, 2017.
- C8) **Saleh, M.**, Sedaghati, R. and Bhat, R., "Design Optimization of A Bi-Fold Magnetorheological Damper Subject To Impact Loads," The ASME2017 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, SMASIS2017-3753, Snowbird, Utah, USA, Sept. 18-20, 2017.
- C9) **Hemmatian, M.** and Sedaghati, R., "Sound Transmission Loss of Sandwich Panels Partially Treated With MR Fluid and Viscoelastic Core Layer," Proceedings of VIII ECCOMAS Thematic Conference on Smart Structures and Materials, SMART2017, Madrid, Spain, June 5-8, 2017.
- C10) **Shamieh, H.** and Sedaghati, R., "Development and Optimization of a Novel Magnetorheological Fluid Brake with No Zero-Field Viscous Torque For Automotive Applications," Proceedings of VIII ECCOMAS Thematic Conference on Smart Structures and Materials, SMART2017, Madrid, Spain, June 5-8, 2017.
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- C14) **Shamieh, H.** and Sedaghati, R., "Design Optimization and Control of a Magneto-Rheological Fluid Brake for Vehicle Applications," Proceedings of the ASME2016 Conference on Smart

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- C22) **Eshaghi, M.**, R., Rakheja, R Sedaghati and Yang, F., "Vibration Characteristics of Annular Sandwich Plates Treated with Magneto-rheological Fluid," Proceedings of the International Conference on Mechanical Science and Mechanical Design (MSMD 2015), Changsha, China, December 12-13, 2015.
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- C29) **Abouobaia, E. S.**, Bhat, R. and Sedaghati, R., "Semi-Active Control of Torsional Vibrations using a New Hybrid Torsional damper," Proceedings of 23rd AIAA/AHS Adaptive Structures Conference, AIAA-2015-1255, Kissimmee, Florida, USA, January 5-9, 2015.
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- C65) **Yang, F.**, Sedaghati, R., Esmailzadeh, E., "In-Plane Free Vibration of Curved Beams Using Finite Element Method," Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETEC 2007-35839, IDETC/CIE 2007, Las Vegas, Nevada, USA, September 4-7, 2007.
- C66) **Yang, F.**, Sedaghati, R., Esmailzadeh, E., "Random Vibration Suppression of Non-Uniform Curved Beams using Optimal Tuned Mass Dampers," Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETEC 2007-35830, IDETC/CIE 2007, Las Vegas, Nevada, USA, September 4-7, 2007.
- C67) **Yang, F.**, Sedaghati, R., Esmailzadeh, E., "Passive Vibration Control of Timoshenko Beams Using Optimal Tuned Mass Dampers," Proceedings of the 21<sup>st</sup> Canadian Congress of Applied Mechanics (CANCAM 2007), Toronto, Canada, June 3-7, 2007.
- C68) **Zabihollah, A.**, Ganesan, R. and Sedaghati, R., "Optimal Vibration Control of Smart Laminated Beams using Layerwise Theory," Proceedings of the 21<sup>st</sup> Canadian Congress of Applied Mechanics (CANCAM 2007), Toronto, Canada, June 3-7, 2007.
- C69) **Khosravi, P.**, Ganesan, R. and Sedaghati, R., "Optimality Criteria for Shape Optimization of Thin Plate and Shell Structures," Proceedings of the 21<sup>st</sup> Canadian Congress of Applied Mechanics (CANCAM 2007), Toronto, Canada, June 3-7, 2007.
- C70) **Elsayed, M. S. A.**, Sedaghati, R. and Abdo, M., "New Approach for Generating Beam Models of Complex Aircraft Wing-box Structures Used for Static Aeroelasticity," Proceedings of the CASI Aero 2007, Toronto, Canada, April 24-26, 2007.

- C71) **Alam, M.**, Soucy, Y., Sedaghati, R. and Bhat, R., "Output-Only Modal Testing for On-Orbit Satellite Appendages," Proceedings of the CASI Aero 2007, Toronto, Canada, April 24-26, 2007.
- C72) **Zabihollah, A.**, Ganesan, R. and Sedaghati, R., "Optimal Vibration Control of Active Laminated Beam using Unimorphic Piezoceramic Elements and LQR Controller," Proceedings of the CANSMART 2006-International Conference on Smart Materials and Structures, pp. 139-148; Toronto, Canada, October 12-13, 2006.
- C73) **Firoozrai, A.**, Stiharu, I. and Sedaghati, R., "Developing of Hard Landing Diagnosis System Based on Acceleration Sensing using MEMS," 2006 International Conference on Dynamics, Instrumentation and Control, Queretaro, Mexico, August 13-16, 2006.
- C74) **Zabihollah, A.**, Ganesan, R. and Sedaghati, R., "Analysis and Design Optimization of Smart Laminated Composite Beams using Layerwise Theory," Proceedings of the III European Conference on Computational Mechanics (ECCM-2006), Lisbon, Portugal, June 5-9, 2006.
- C75) **Khosravi, P.**, Ganesan, R. and Sedaghati, R., "Non-linear Analysis of Composite Plates and Shells Using a New Shell Element," Proceedings of the III European Conference on Computational Mechanics (ECCM-2006), Lisbon, Portugal, June 5-9, 2006.
- C76) **Zabihollah, A.**, Sedaghati, R. and Ganesan, R., "Sensitivity Analysis of Laminated Beams Integrated with Piezoelectric Sensors/Actuators Using Layerwise Theory," Proceedings of the Eighth International Conference on Computational Structures Technology, Las Palmas de Gran Canaria, Spain, September 12-15, 2006.
- C77) **Khosravi, P.**, Sedaghati, R. and Ganesan, R., "Shape Optimization of Thin-walled Structures Based on a New Shell Element and Uniform Strain Energy Criterion," Proceedings of the Eighth International Conference on Computational Structures Technology, Las Palmas de Gran Canaria, Spain, September 12-15, 2006.
- C78) **Chintapalli, S.**, Sedaghati, R. and Abdo, M., "Preliminary Design of a Wing Box for Multi-Disciplinary Design Optimization Process," 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Portsmouth, Virginia, September 6-8, 2006.
- C79) **Khosravi, P.**, Ganesan, R. and Sedaghati, R. "Limit Load Analysis of Thin Geometrically Nonlinear Structures Using a New Shell Element," Proceedings of the 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, AIAA-2006-2276, Vol. 11, pp. 8080-8086, Newport, Rhode Island, May 1-4, 2006.
- C80) **Dominguez, A.**, Sedaghati, R. and Stiharu, I., "Semi-Active Vibration Control of Adaptive Structures using Magnetorheological Dampers," Proceedings of the 2005 ASME International Mechanical Engineering Congress, IMECE2005-79943, Orlando, Florida, USA, Nov. 5-11, 2005.



- C81) **Modaressi-Tehrani, K.**, Rakheja, S. and Sedaghati, R., "Analysis of Destabilizing Moments due to a Partly Filled Vehicular Tank under Braking and Turning," Proceedings of the 2005 ASME International Mechanical Engineering Congress, IMECE2005-79128, Orlando, Florida, USA, Nov. 5-11, 2005.
- C82) **Zabihollah, A.**, Sedaghati, R. and Ganesan, R., "Optimal Design of Smart Laminated Beams Using Layerwise Theory," Proceedings of the CANSMART 2005-International Conference on Smart Materials and Structures, pp. 251-259, Toronto, Canada, October 13-14, 2005.
- C83) **Dominguez, A.**, Sedaghati, R. and Stiharu, I., "Modeling and Application of MR Dampers in Semi-Adaptive Structures," II ECCOMAS THEMATIC Conference on Smart Structures and Materials, Lisbon, Portugal, July 18-21, 2005.
- C84) **Chowdhury, M. A.**, Ahmed, W., and Sedaghati, R., "Ride Performance of Heavy Vehicle Using 3D Finite Element Model," Proceedings of the 20th Canadian Congress of Applied Mechanics (CANCAM 2005), pp. 166-167, Montreal, Quebec (McGill University), Canada, May 30- June 2, 2005.
- C85) **Chintapalli, S.**, Sedaghati, R., Li, J., and Abdo, M., "Minimum Mass Design of Stringer Stiffened Compression Panels under Compressive Axial Load," Proceedings of the 6<sup>th</sup> World Congress on Structural and Multidisciplinary Optimization (WCSM06), Rio de Janeiro, May 30, June 3, 2005.
- C86) **Yang, F.**, Sedaghati, R., Younesian, D. and Esmailzadeh, E., "Optimal Placement of Active Bars in Smart Structures," Proceedings of the IEEE International Conference on Mechatronics and Automation, ICMA 2005, pp. 1-6, Nigara Falls, ON, July 29-August 1, 2005.
- C87) **Ahari, M.**, Zabihollah, A. and Sedaghati, R., "Optimal Design of Smart Laminated Beams with Embedded Piezoelectric Sensors and Actuators," Proceedings of the 6<sup>th</sup> World Congress on Structural and Multidisciplinary Optimization (WCSM06), Rio de Janeiro, May 30-June 3, 2005.
- C88) **Jha, A.**, Sedaghati, R. and Bhat, R., "Dynamic Testing of Structures using Scale Models," Proceedings of the 46<sup>th</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics & Materials Conference, AIAA-2005-2259, Vol. 9, pp. 5731-5744, Austin, Texas, April 18-21, 2005.
- C89) **Soucy, Y.**, Rao, V., and Sedaghati, R., "Comparison of Methods for Force Limited Vibration Testing," IMAC XXIII: A Conference and Exposition on Structural Dynamics, Orlando, Florida, January 31-February 3, 2005.
- C90) **Younesian, D.**, Esmailzadeh, E. and Sedaghati, R., "Transition Curves for Nonhomogeneous Mathieu Equation", Proceedings of the DETC 2005 ASME International Design Engineering

- Technical Conferences, DETC2005-85170, Vol. 1 A, pp. 243-247, Long Beach, California, September 24-28, 2005.
- C91) **Yang, F.**, Sedaghati, R., Esmailzadeh, E. and Younesian, D. "On the Placement of Active Bars and Optimal Feedback Gain in Random Adaptive Structures for Vibration Suppression," Proceedings of the DETC 2005 ASME International Design Engineering Technical Conferences, DETC2005-85220, Vol. 1A, pp. 179-188, Long Beach, California, September 24-28, 2005.
- C92) **Dominguez, A.**, Sedaghati, R., Stiharu, I. and Rakheja, S., "Modeling and Simulation of Magnetorheological Dampers," Proceedings of the 7th CANSIMART International Conference on Smart Materials and Structures, pp. 163-172, Montreal, Canada, October 21-22, 2004.
- C93) **Ge, J.**, Packirisamy, M. and Sedaghati, R., "Dynamic Behavior of MEMS Structures under Random Loading," Proceedings of the ACSIM 2004 and VETOMAC-3, New Delhi, Dec. 6-9, 2004.
- C94) **Ge, J.**, Packirisamy, M. and Sedaghati, R., "Performance Characterization of MEMS Sensors under Random Loading," Proceedings of the 3<sup>rd</sup> IEEE Conference on Sensors, Vienna, Austria, Oct. 24-27, 2004.
- C95) **Modaressi-Tehrani, K.**, Rakheja, S., Sedaghati, R. and Bussières, M., "Influence of Transient Fluid Slosh on the Overturning Moment of a Partly-Filled Moving Container," Proceedings of the Canadian Multidisciplinary Road Safety Conference, Ottawa, Ontario, June 27-30, 2004.
- C96) Cote, A., Sedaghati, R. and Soucy, Y., "Investigation of the Complex Two Degrees of Freedom Systems for Force Limited Vibration Testing," Proceedings of the 2004 ASME International Mechanical Engineering Congress, IMECE2004-60412, Anaheim, California, November 13-19, 2004.
- C97) **Dominguez, A.**, Sedaghati, R. and Stiharu, I., "Practical Design Optimization of Real Life Truss Structures Constructed from Basic Modules Using Genetic Algorithms," Proceedings of the 7<sup>th</sup> Biennial ASME Conference Engineering System Design and Analysis, ESDA2004-58579, Vol. 3, pp. 105-113, Manchester, UK, July 19-22, 2004.
- C98) **Li, J.**, Sedaghati, R. and Dargahi, J., "Design and Development of Piezoelectric Inchworm Actuator," Proceedings of the 12th AIAA/ASME/AHS Adaptive Structures Conference, AIAA-2004-1890, Vol. 5, pp. 4033-4044, Palm Springs, California, April 19 – 22, 2004.
- C99) Sedaghati, R., "Design Optimization of Structures with Geometric Nonlinearity Under Stress-Displacement Constraint," The Eighth Pan American Congress of Applied Mechanics (PACAM VIII), Vol. 10, pp.145-148, Havana, Cuba, January 5-9, 2004.

- C100) Sedaghati, R., "Structural Design Optimization under Stress-Displacement Constraint Using the Finite Element Force Method," The Eighth Pan American Congress of Applied Mechanics (PACAM VIII), Vol. 10, pp. 141-144, Havana, Cuba, January 5-9, 2004.
- C101) Dargahi, J. and Sedaghati, R., "Finite Element Analysis of an Endoscopic Tooth Like Sensor," The Eighth Pan American Congress of Applied Mechanics (PACAM VIII), Vol. 10, pp. 105-108, Havana, Cuba, January 5-9, 2004.
- C102) **Dominguez, A.**, Sedaghati, R., and Stiharu, I., "Vibration Suppression of Adaptive Structures Using Active Control and Topology Optimization," Proceedings of the 6th CANSMART International Conference on Smart Materials and Structures, pp. 129-138, Montreal, Canada, October 16-17, 2003.
- C103) **Dominguez, A.**, Sedaghati, R., and Stiharu, I., "Topology Optimization of Adaptive Structures Using Optimal Placement and Number of Actuators," Proceedings of the 6th CANSMART International Conference on Smart Materials and Structures, pp. 177-186, Montreal, Canada, October 16-17, 2003.
- C104) **Li, J.**, Sedaghati, R. and Dargahi, J., "Design of Novel High Force-High Displacement Inchworm Piezoelectric Actuator," Proceedings of the 6th CANSMART International Workshop on Smart Materials and Structures, pp. 67-76, Montreal, Canada, October 16-17, 2003.
- C105) **Singh, H.**, Dargahi, J. and Sedaghati, R., "Experimental and Finite Element Analysis of an Endoscopic Tooth Like Tactile Sensor," Proceedings of the Second IEEE International Conference on Sensors, Vol. 2, No. 1, pp. 259-264, Toronto, Canada, October 22-24, 2003.
- C106) Sedaghati, R., Soucy, Y. and Etienne, N., "Experimental Estimation of Effective Mass for Structural Dynamics and Vibration Applications," IMAC XXI: A Conference and Exposition on Structural Dynamics, Kissimmee, Florida, February 3-6, 2003.
- C107) Soucy, Y., **Rao, V.** and Sedaghati, R., "Investigation of the Semi- Empirical Method For Force Limited Vibration Testing," ASTRO 2002- Proceedings of the 12<sup>th</sup> CASI Conference on Astronautics, Ottawa, Ontario, Canada, November 12-14, 2002.
- C108) Sedaghati, R. and Suleman, A., "Design Optimization Against Instability of Frame Structures Undergoing Large Deflections," Proceedings of the 9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, AIAA-2002-5527, Atlanta, Georgia, September 4-6, 2002.
- C109) Sedaghati, R. and Suleman, A., "Optimization of Adaptive Truss Structures Under Dynamic Loading Using the Finite Element Force Method," Proceedings of the 2<sup>nd</sup> Canadian

Conference on Nonlinear Solid Mechanics (CanCNSM 2002), Vol. 1, pp. 113-125, Vancouver, British Columbia, Canada, June 19-23,2002.

C110) Sedaghati, R., Suleman, A. and Tabarrok, B., "Optimum Design of Structures with Multiple Frequency Constraints Using the Finite Element Force Method," Proceedings of the 42<sup>nd</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, AIAA-2001-1551 Vol.4, pp. 2788-2798, Seattle, WA, April 16-19, 2001.

C111) Sedaghati, R., Suleman, A. and Tabarrok, B., "Optimum Design of Frame Structures Undergoing Large Deflections Against System Instability," Proceedings of the First MIT Conference on Computational Fluid and Solid Mechanics, Vol.1, pp. 725-728, MIT, Cambridge, MA, June 12-15, 2001.

C112) Sedaghati, R., Suleman, A., and Tabarrok, B., "Topology Optimization of Adaptive Space Truss Structures," Proceedings of the 51<sup>st</sup> International Astronautical Congress, IAF-00-A.3.10, Rio de Janeiro, Brazil, October 2-6, 2000.

C113) Sedaghati, R., Tabarrok, B., and Suleman, A., "Optimum Design of Nonlinear Symmetric Truss Structures Under System Stability Constraint," Proceedings of the AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization, AIAA-2000-4835, Long Beach, CA, Sep. 6-8, 2000.

C114) Sedaghati, R., Tabarrok, B., and Suleman, A., "Integrated Force Method and Optimization of Adaptive Truss Structures," The International Conference on Computational Engineering & Sciences ICES'2K, Vol. 2, pp. 1598-1603, Los Angeles, CA, Aug. 21-25, 2000.

C115) Sedaghati, R. and Tabarrok, B., "Optimum Design of Truss Structures Subject to a System Stability Constraint," Proceedings of the 1<sup>st</sup> Canadian Conference on Nonlinear Solid Mechanics, Vol. 2, pp. 549-560, Victoria, British Columbia, Canada, June 16-20,1999.

C116) Eslami, M., R.; Shakeri, M. and Sedaghati, R., "Thermal Stress Waves in Cylindrical Shells," Proceedings of the ASME Pressure Vessels and Piping Conference, New Orleans, Louisiana, June 21-25, 1992.

### **9.6. Conference Presentations and Posters**

CP1) **Sadeghifar, M.** and Sedaghati, R., "Development of the Analysis and Optimization Strategies for Prediction of Residual Stresses induced by Turning of Difficult-to-Machine Materials," Poster presentation for CRAIQ Forum, April 2016.

CP2) Sedaghati, R., "Challenges in Modelling and Optimization of MR/ER based Adaptive Structures," 11<sup>o</sup> Congreso Internacional de Ingeniería, CONIIN 2015, Queretaro, Mexico, May 11-15, 2015.

- CP3) **Eshaghi, M.**, Sedaghati, R., Rakheja, "Experimental and Finite Element Studies on Vibration Characteristics of Multi-layer MR Plate," 14<sup>th</sup> International Conference on Electrorheological Fluids and Magnetorheological Suspensions (ERM2014), Granada, Spain, July 7-11, 2014.
- CP4) **Deblois, J. P.**, Soucy, Y., Sedaghati, R. and Singhal, R., "Experimental Measurement and Reduction of Overtesting in Assembly-level Shock Testing," "Spacecraft and Launch Vehicle Dynamic Environments Workshop, The Aerospace Corporation, El Segundo, California, USA, June 9-11, 2009.
- CP5) **Deblois, J. P.**, Soucy, Y. and Sedaghati, R., "Comparison of Overtesting During Assembly-Level Shock and Vibration Testing," "Spacecraft and Launch Vehicle Dynamic Environments Workshop, The Aerospace Corporation, El Segundo, California, USA, June 10-12, 2008.
- CP6) **Dominguez, A.**, Stiharu, I. and Sedaghati, R. "Translational Actuation Effect of the Magneto-Rheological Damper," The Ninth Pan American Congress of Applied Mechanics(PACAM IX), Mérida, Yucatán, México, January 2-6, 2006.
- CP7) Soucy, Y., **Rao, V.** and Sedaghati, R., "Investigation of Some Limit Criteria for Force Limited Vibration," Spacecraft and Launch Vehicle Dynamic Environments Workshop, The Aerospace Corporation, El Segundo, California, USA, June 21-23, 2005.
- CP8) Soucy, Y., **Rao, V.** and Sedaghati, R., "On the Semi-Empirical Method for Force Limited Vibration," S/C and L/V Dynamic Environments Workshop, The Aerospace Corporation, El Segundo, California, USA, June 22-24, 2004.
- CP9) **Khosravi, P.**, Ganesan R. and Sedaghati R., "Nonlinear analysis of laminated composite structures using optimal membrane element, and considering shear deformation," Centre de Recherche en Plasturgie et Composites (CREPEC), Dec. 2006, École de Technologie Supérieure, Montréal, Canada.
- CP10) **Zabihollah, A.**, Ganesan R. and Sedaghati R., "Experiment on Vibration Suppression of Smart Laminated Composite Structures," Centre de Recherche en Plasturgie et Composites (CREPEC), Dec. 2006, École de Technologie Supérieure, Montréal, Canada.
- CP11) **Khosravi, P.**, Ganesan R. and Sedaghati R., "Nonlinear Analysis of Thin-walled Composite Structures using a New Shell Element," Centre de Recherche en Plasturgie et Composites (CREPEC) Dec. 2005, University of Montreal, Montreal, Canada.
- CP12) **Zabihollah, A.**, Ganesan R. and Sedaghati R., "Sensitivity Analysis and Design Optimization of Smart Laminated Composite Beams using Layerwise Theory," Centre de Recherche en Plasturgie et Composites (CREPEC) Dec. 2005, University of Montreal, Montréal, Canada.

**9.7. Technical Reports**

- TR1) **Eshaghi, M., Hemmatian, M.** and Sedaghati, R., "Vibration Attenuation and Fatigue Analysis of the Articulated Boom in the Response to the Wind Load and Vortex Shedding," Technical report for STRUDES Consulting Engineers in the framework of NSERC- Engage Grant, Jan. 2018.
- TR2) **Sadeghifar, M.** and Sedaghati, R., "Finite Element Simulation and Experimental Validation of Orthogonal Turning of Inconel 718," provided for CRIAQ-MANU 510, Sept. 2017.
- TR3) **Eshaghi, M.** and Sedaghati, R., "Bearing Health Monitoring and Clogged Spout Detection Using Finite Element Analysis and Advanced Signal Processing Techniques," Technical report for NOW Energy Solutions Inc., in the framework of NSERC- Engage Grant, July 2017.
- TR4) **Mohammadi, F.** and Sedaghati, R., "Correlation between Low Plasticity Burnishing Process Parameters and Residual Stress Profiles," Technical report provided for Roll-Royce Canada (currently Siemens Canada) in the framework of NSERC-Engage Grant, Dec. 2012.
- TR5) **Deblois, J. P.** and Sedaghati, R., "Investigation of Overtesting during Assembly Level Shock Testing," Department of Mechanical Engineering, Concordia University, Technical Report #2 provided for Canadian Space Agency/ Spacecraft Engineering, Saint-Hubert, QC, March 31, 2009 (Contact No.: 28/7004950).
- TR6) Sedaghtai, R., "Preliminary Investigation of Impact Dynamics for Micro-Penetrator", Technical Report provided for Canadian Space Agency/ Spacecraft Engineering, Saint-Hubert, QC, October 30, 2008 (Contact No.: 28/7006278).
- TR7) **Deblois, J. P.** and Sedaghati, R., "Investigation of Overtesting during Assembly Level Shock Testing," Department of Mechanical Engineering, Concordia University, Technical Report #1 provided for Canadian Space Agency/ Spacecraft Engineering, Saint-Hubert, QC, March 31, 2008 (Contact No.: 28/7004950).
- TR8) **Mashiul, A.,** Sedaghati, R. and Bhat, R. B., "Feasibility Study of Output-Only Modal Testing for On-Orbit Application," Department of Mechanical Engineering, Concordia University, Technical Report provided for Canadian Space Agency/ Spacecraft Engineering, Saint-Hubert, QC, May 2007 (Contact No.: 7001533).
- TR9) **Elsayed, M.S.A., Singh, A.** and Sedaghati, R., "Conceptual Design Optimization of an Aircraft Wing-Box Structure and Generating a High Fidelity Stick Model" Department of Mechanical Engineering, Concordia University, Report 6 (Final report), provided for CRIAQ-MOSAIQ, task 6, January 2007.
- TR10) **Elsayed, M.S.A., Singh, A.** and Sedaghati, R., "3D Finite Element Model of an aircraft Wing-Box Structure Based on Preliminary Design Optimization of its Components" Department

- of Mechanical Engineering, Concordia University, Report 5, provided for CRIAQ-MOSAIQ, task 6, October 2006.
- TR11) **Chintapalli, S.** and Sedaghati, R. "Wing-Box Structural Design Optimization" Department of Mechanical Engineering, Concordia University, Report 4, provided for CRIAQ-MOSAIQ, task 6, December 2005.
- TR12) **Chintapalli, S.** and Sedaghati, R. "Wing-Box Structural Design Optimization" Department of Mechanical Engineering, Concordia University, Report 3, provided for CRIAQ-MOSAIQ, task 6, October 2005.
- TR13) **Chintapalli, S.,** Sedaghati, R. and **Li, J.,** "Minimum Mass Design of Stringer Stiffened Compression Panels" Department of Mechanical Engineering, Concordia University, Report 2, provided for CRIAQ-MOSAIQ, task 6, February 2005.
- TR14) **Chintapalli, S.,** Sedaghati, R. and Li, J., "Wing-Box Structural Design Optimization," Department of Mechanical Engineering, Concordia University, Report 1, provided for CRIAQ-MOSAIQ (Multidisciplinary Optimization Standardization Approach for Integration and Configurability) task 6, October 2004.
- TR15) **Rao, V.** and Sedaghati, R., "Numerical Sensitivity Study for the Investigation of the Semi-Empirical Method for Force Limited Vibration Testing," Department of Mechanical Engineering, Concordia University, Report 2, provided for Canadian Space Agency/ Spacecraft Engineering, Saint-Hubert, QC, March 2003 (Contact No.: 9F028 – 012220 / 001 / MTB).
- TR16) **Rao, V.** and Sedaghati, R., "Design of Test Item and Mounting Structure for the Investigation of Semi-Empirical Method for Force Limited Vibration Testing," Department of Mechanical Engineering, Concordia University, Report 1, provided for Canadian Space Agency/ Spacecraft Engineering, Saint-Hubert, QC, March 2002 (Contact No.: 9F028 – 012220 / 001 / MTB).
- TR17) Issert, C., Hoa, S. V., Sedaghati, R., "Self-Healing Material and its Potential Space Applications," Analysis," Department of Mechanical Engineering, Concordia University, Report provided for Canadian Space Agency/ Spacecraft Engineering, Saint-Hubert, QC, February 2003.
- TR18) Sedaghati, R., Bhat, R. and **Jha, A.,** "Naval Shipboard Console Vibration and Shock Analysis," Department of Mechanical Engineering, Concordia University, Report provided for CAE inc. Montreal, QC, Jan. 2003.
- TR19) Sedaghati, R. and Soucy, Y., "Base Excitation Dynamics-The Effective Mass Concept," Canadian Space Agency/ Spacecraft Engineering, Saint-Hubert, QC, July 2001.

## 10. RESEARCH GRANTS

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- **NSERC-Research Tools and Instruments** Submitted Oct. 2018- Pending  
 Amount: \$149,650  
 Title: *“Advanced Measurement System for Multiscale Deformation and Damage Mechanisms of Lightweight Materials”*  
 Co-Investigator, PI: Ayhan Ince
- **Autovector Technologies Inc.** Dec. 2018-Pending  
 Amount: \$25,000  
 Title: *“Feasibility Analysis of a Design Concept of Automotive Wheel with Pneumatic Spokes”*  
 R. Sedaghati (PI) and R. Rakheja
- **FQRNT (Quebec)- Research Grant (Team)** Pending  
 Amount: \$ 180,000 plus \$ 50,000 (Equipment)  
 Title : *“Development of High-Performance Magnetorheological based-Adaptive Structural Systems to Control Vibration and Radiated Sound Energies (Mise au point de systèmes structuraux adaptatifs magnétorhéologiques à haute performance pour contrôler les vibrations et les énergies sonores radiées)”*  
 Members: R. Sedaghati (PI, Concordia), A. Karimfazli (Concordia), S. Rakheja (Concordia), R. Botez (École de Technologie Supérieure), M. Bouazara (Université du Québec à Chicoutimi)
- **FQRNT (Quebec)- Equipment (Team)** Pending  
 Amount: \$ 50,000 (Equipment)  
 Title : *“Advanced Impedance/Transmission Loss (STL) Tube”*  
 Members: R. Sedaghati (PI, Concordia), S. Rakheja (Concordia), A. Karimfazli (Concordia), R. Botez (École de Technologie Supérieure), M. Bouazara (Université du Québec à Chicoutimi)
- **Canadian Cubesat Project (CCP)** 2017-2019  
 Amount: \$221,950  
 K. Khorasani (PI), R. Sedaghati and 8 others (Co-PI)
- **NSERC Engage**  
 Amount: \$25,000 2018  
 Title: *“3D Finite Element Modeling of Turning Processes of Metals and Composites”*  
 M. Hojjati (PI) and R. Sedaghati
- **Concordia University-School of Graduate Studies-Horizon Postdoctoral Research Grant**  
 Total funding: \$62,700  
 Portion received \$31,350  
 Research program title: *“Structural Vibration and Noise Control using Smart Magnetorheological Fluids and Elastomers”*  
 R. Sedaghati (PI) and R. Rakheja



▪ **NSERC Engage**

Amount: \$25,000                      2017

Title: *“Vibration Attenuation and Fatigue Analysis of the Articulated Boom in the Response to the Wind Load and Vortex Shedding”*

R. Sedaghati

▪ **NSERC-Research Tools and Instruments**

Amount: \$117, 853                      2017

Title: *“A State-of-the-Art Test Equipment for Characterization of Advanced Rheological Materials”*

R. Sedaghati (PI), S. Rakheja, A. Bagchi

▪ **NSERC Engage**

Amount: \$25,000 ,                      2016

Title: *“Bearing Health Monitoring and Clogged Spout Detection Using Finite Element Analysis and Advanced Signal Processing Technique”*

R. Sedaghati

▪ **NSERC-Discovery Grant (individual)**

Amount: \$38,000/year                      2016-2021

Title: *“Analysis, Design Optimization and Control of Flexible Adaptive Structures to Attenuate Noise and Vibration”*

R. Sedaghati

▪ **NSERC-Discovery Grant (Individual)**

Amount: \$27,000/year                      2011-2016

Title: *“Optimum Design and Vibration Suppression of Flexible Adaptive Structures”*

R. Sedaghati

▪ **NSERC-Discovery Grant (Individual)**

Amount: \$22,000/year                      2006-2011

Title: *“Optimum Design and Vibration Suppression of Large Flexible Smart Structures”*

R. Sedaghati

▪ **NSERC-Discovery Grant (Individual)**

Amount: \$18,000/year                      2002-2006

Title: *“Structural Design Optimization of Large Adaptive Space Structures”*

R. Sedaghati



▪ **Canadian Space Agency**

Amount: \$26,500                      June 2007-March. 2009

Title: *“Investigation of Overtesting During Assembly-Level Shock Testing”*

R. Sedaghati

▪ **Canadian Space Agency**

Amount: \$13,000                      July 2008-October. 2008

Title: *“Preliminary Investigation of Impact Dynamics for Micro-Penetrator”*

R. Sedaghati

▪ **Canadian Space Agency**

Amount: \$16,200                      Sept. 2005-March 2007

Title: *“Feasibility Study of Output-Only Modal Testing for On-Orbit Application”*

R. Sedaghati

▪ **CRIAQ (Quebec)-MOSAIC (Multidisciplinary Optimization Standardization Approach for Integration and Configurability)**

Total amount: \$ 800,000                      2004-2007

Team members: Jean-Yves Trépanier(École Polytechnique, PI)

Wahid Ghaly, Ramin Sedaghati (Concordia),

Charles Audet, François Guibault, Benoît Ozelle (École Polytechnique)

Ruxandra Botez, Louis Rivest, Azzeddine Soulaïmani (École de Technologie Supérieure)

Companies involved : Bombardier and Pratt &Whitney

My share: \$ 114,720. Responsible for task 6 Title: *“Wing-box Structural Design Optimization”*

▪ **FRQNT (Quebec)– Research Grant (Individual)**

**(Établissement de nouveaux chercheurs)**

Amount: \$15,000/year                      2003-2006

Title: *“Dynamique et Controle des Vibrations dans les Structures Souples Adaptives”*

*(Dynamics and Vibration Control of Adaptive Flexible Structures)*

R. Sedaghati

▪ **FRQNT (Quebec)–Equipment Grant (Individual)**

**(Établissement de nouveaux chercheurs)**

Title: *“Dynamique et Controle des Vibrations dans les Structures Souples Adaptives”*

Amount: \$49,933                      2003-2006

R. Sedaghati

▪ **FQRNT(Quebec)- Research Grant (Group)**

**Projet de recherche en équipe**

**Research:** \$ 40,000/year    **Equipement :** \$ 41,291                      2003-2006

**Title:** *“Les progrès dans la technologie du véhicule intégrée et de l’ ergodynamique”*  
*(Advances in Integrated Vehicles Technology and Ergodynamics)*

**Team members:** R. Rakheja (PI), R. Sedaghati, W. Ahmed, C. Y. Su, H. Hong, Marc Richard, Paul-Émile Boileau

▪ **FQRNT (Quebec)-Research Grant (Group)**

**Actions Concertées**

**Amount:** \$49,000                      2003-2006

**Title:** *“Roll stability analysis of tank trucks through prototype development and testing”*

**Team members:** S. Rakheja (PI), Sedaghati, I. Stiharu, R., W. Ahmed

▪ **University of Ontario Institute of Technology (UOIT)-Research Grant**

**Amount:** \$65,760                      2005-2010

**Title:** *“Adaptive-Passive Vibration Control of Time-Varying Structures”*

R. Sedaghati

▪ **Canadian Space Agency**

**Amount:** \$ 16000                      2002-2003

**Title:** *“Investigation of the Semi-Empirical Method for Force-Limited Vibration Testing”*

R. Sedaghati

▪ **Canadian Space Agency**

**Amount:** \$ 15000                      2002-2003

**Title:** *“Investigation of Advanced Triax Composite & Self-Healing Materials for Space”*

R. Sedaghati and S. Hoa (PI)

▪ **CAE Montreal**

**Amount:** \$ 5000                      2003

**Title:** *“Naval Shipboard Console Vibration and Shock Analysis”*

R. Sedaghati (PI), R. Bhat

▪ **Center for Research in Polymers and Composites-FQRNT (Quebec)**

**Regroupement Stratégique**

**Team members:** Carreau P, Hoa S.V. (PI) and 45 others

420,000 (year 2005), 450,000/year (2006-2010)

▪ **Research Grant-Graduate Student Support Program, Concordia University**

Total Amount: \$ 646, 573                      2001-2018

\$7,000 (Year 2001); \$23,500(Year 2002); \$34,500(Year 2003);  
\$22,250(Year 2004); \$38,000 (Year 2005); \$60,500 (Year 2006), \$26,000 (Year 2007), \$26,000  
(Year 2008), \$28,250 (Year 2009), \$65,000(Year 2010), \$42,200 (Year 2011),  
\$43,375 (Year 2012), \$53,334 (Year 2013), \$41,667 (Year 2014), \$38,500 (Year 2015),  
\$32330 (Year 2016), \$32500 (Year 2017), \$31667 (Year 2018) R. Sedaghati

▪ **Concordia Teaching Fellowship Grant**

Amount: \$12,500                      January 2005-April 2007

R. Sedaghati

▪ **Concordia Institute for Co-operative Education**

Amount: \$3,780                      2003

R. Sedaghati

▪ **Concordia University Faculty Research and Development Fund- Start up Fund**

Amount: \$ 40,000                      2002-2003

R. Sedaghati

## 11. TRAINING OF HIGHLY QUALIFIED PERSONNEL

### 11.1. Ph.D Students Successfully Completed

| Name   | Duration                  | Degree | Present status  |
|--|---------------------------|--------|---|
| <b>1- Aurelio Dominguez Gonzales</b><br>ID: 4673263  | Sept. 2001-<br>June 2005  | Ph.D   | Professor and Dean of Faculty of Engineering, Universidad Autonoma de Queretaro, Mexico |
| <i>Thesis Title: Design Optimization and Vibration Control of Adaptive Structures</i>  |                           |        |   |
| <b>2- Peyman Khosravi-Sichani</b><br>ID: 5307619   | May 2004-<br>June 2007    | Ph.D   | Stress Analyst of airframes.<br>Mecachrome Aerospace Co., Montreal                      |
| <i>Thesis Title: Nonlinear Finite Element Analysis and Design Optimization of Thin-Walled Structures</i>   |                           |        |   |
| <b>3- Abolghassem Zabiholla</b><br>ID: 4419820   | Sept. 2003-<br>July 2007  | Ph.D   | Associate Professor, Sharif University of Technology, Iran.                             |
| <i>Thesis Title: Analysis, Design optimization and Vibration Suppression of Smart Laminated Beams.</i>   |                           |        |   |
| <b>4- Fan Yang</b><br>ID: 5052386  | Sept. 2004-<br>Sept. 2008 | Ph.D   | Professor, College of Mechanical Engineering and Automation Huaqiao University, China   |
| <i>Thesis Title: Optimal Vibration Suppression of Beam type Structures using Passive and Semi-Active Tuned Mass Dampers</i>                            |                           |        |   |
| <b>5- Hesham Ibrahim</b><br>ID: 6117295  | Sept. 2006-<br>Aug. 2009  | Ph.D   | Faculty Member, Technical University (MTC), Cairo, Egypt                                |
| <i>Thesis Title: Design Optimization of Vehicle Structures for Crashworthiness Improvement</i>   |                           |        |   |
| <b>6- Vasudevan Rajamohan</b><br>ID: 6117295   | Sept. 2006-<br>Aug. 2010  | Ph.D   | Associate Professor, Vellore Institute of Technology (VIT), Vellore, India              |
| <i>Thesis Title: Vibration Analysis and Optimization of Fully and Partially MR-Fluid Treated Multi-Layer Beams</i>                                     |                           |        |   |
| <b>7- Ahmed Khattab</b><br>ID: 9180354   | Oct. 2007-<br>Oct. 2010   | Ph.D   | Faculty Member, Technical University (MTC), Cairo, Egypt                                |
| <i>Thesis Title: Investigation of Crash Energy Management System to Enhance Vehicle Crashworthiness.</i>   |                           |        |   |
| <b>8- Farough Mohammadi</b><br>ID: 9546324   | Sept. 2009-<br>June 2012  | Ph.D   | Stress Analyst and Team Leader,<br>Pratt & Whitney, Montreal                            |
| <i>Thesis Title: Nonlinear Vibration Analysis and Optimal Damping Design of Sandwich Cylindrical Shells with Viscoelastic and ER-Fluid treatments.</i> |                           |        |   |
| <b>9- Ossama Abdelsalam Ramy</b><br>ID:9757953   | Jan.2010-<br>Nov. 2012    | Ph.D   | Faculty Member, Technical University (MTC), Cairo, Egypt                                |
| <i>Thesis Title: Analysis and Optimization of Autofrettaged and Shrink Fitted Compound Cylinders under Thermo-Mechanical Loads</i>                     |                           |        |   |
| <b>10- Kambiz Esteki</b><br>ID:9204628   | Sept. 2008-<br>June 2014  | Ph.D   | Structural Engineer, Construction Engineering Company in Calgary, Canada                |
| <i>Thesis Title: Developing New Analytical and Numerical Models for MR Fluid Dampers and their Application to Seismic Design of Buildings</i>          |                           |        |   |
| <b>11- Ehab Abouobaia</b><br>ID:609695   | Jan. 2012 -<br>Dec. 2014  | Ph.D   | Faculty Member, Technical University (MTC), Cairo, Egypt                                |
| <i>Thesis Title: Hybrid Torsional Damper for Semi-Active Control of Torsional Vibrations in Rotating Machines</i>                                      |                           |        |   |

|   |                          |      |  |
|---|--------------------------|------|--|
| <b>12- Mehdi Eshaghi</b><br>ID:6309739  | Jan. 2012 -<br>June 2015 | Ph.D | Design Engineer, Now Energy Solution Co., Montreal. Currently LTA-Assistant Professor in Concordia |
| <i>Thesis Title: Vibration Analysis of MR Fluid Sandwich Plates and Identification of Optimal MR Fluids Treatment</i>   |                          |      |  |
| <b>13- Hamid Khorrami</b><br>ID:6214312   | Sept. 2011-<br>Oct. 2016 | Ph.D | Mechanical Design Engineer at SCP Science Company, Quebec, Canada                                  |
| <i>Thesis Title: Vibration Analysis of a Shaft-Disk System for On-line Crack Detection</i>  |                          |      |  |
| <b>14- Morteza Sadeghifar</b><br>ID: 6714110  | May 2013-<br>Aug. 2017   | PhD  | PDF (NSERC Engage)-Concordia U.  |
| <i>Thesis Title: Development of the Analysis and Optimization Strategies for Prediction of Residual Stresses Induced by Turning Processes</i>   |                          |      |  |
| <b>15- Gamaledine Elnashar</b><br>ID: 21128736  | Jan. 2014-<br>Sept. 2017 | PhD  | Back to Egypt-Working in Industry  |
| <i>Thesis Title: Modeling and Analysis of Pavement-Vehicle Interaction Dynamics for Pavement Distress Prediction</i>  |                          |      |  |
| <b>16- Paul R. Provencher</b><br>ID: 1713442<br>(École Polytechnique de Montréal)   | Jan. 2014-<br>Sept. 2017 | PhD  | Research Scientist, Pratt & Whitney, Montreal  |
| <i>Thesis Title: Supporting Production from a Single Surface Roughness Profile: Automated Estimation of the Contributions of Modes of Finish Hard Turning Cut Variability to Arbitrary Roughness Parameters</i> |                          |      |  |
| <b>17- Masoud Hemmatian</b><br>ID:6810470   | Jan. 2014-<br>Nov. 2017  | PhD  | PDF-Horizon Fellowship, Concordia U.   |
| <i>Thesis Title: Sound Transmission Analysis of Circular Sandwich Panels Fully And Partially Treated With MR Fluid Core Layer</i>   |                          |      |  |
| <b>18- Muftah Saleh</b><br>ID:6556043   | Sept. 2012-<br>Nov. 2017 | PhD  | Working as a development engineer in a Company in Ottawa.  |
| <i>Thesis Title: Analysis, Design Optimization and Semi-Active Control of Skid Landing Gear Featuring Bi-Fold Magnetorheological Dampers.</i>   |                          |      |  |

### 11.2. MASc Students Successfully Completed

| Name  | Duration                | Degree | Present status  |
|---|-------------------------|--------|---|
| <b>1- Vijay Rao Dharanipathi</b><br>ID: 4528700   | Jan. 2002-<br>Oct. 2003 | M.A.Sc | Design engineer,<br>Hondajet, Greensboro, NC, USA                                 |
| <i>Thesis Title: Investigation of the Semi-Empirical Method for Force Limited Vibration Testing.</i>    |                         |        |   |
| <b>2- Harpiyar Singh</b><br>ID: 4588932   | June 2002-<br>Dec. 2003 | M.A.Sc | Engineer, Edmonton Waste<br>Management Centre of Excellence,<br>Edmonton, Alberta |
| <i>Thesis Title: Design, Finite Element and Experimental Analysis of Piezoelectric Tactile Sensors.</i> |                         |        |   |
| <b>3- Jian Li</b><br>ID: 4697367  | June 2002-<br>May 2004  | M.A.Sc | Design engineer,<br>Bombardier Aerospace, Montreal                                |
| <i>Thesis Title: Design and Development of a Piezoelectric Linear actuator for Smart structures</i>     |                         |        |   |

|  |                           |        |   |
|--|---------------------------|--------|---|
| <b>4- Anshuman Jha</b><br>ID: 5001641  | Sept. 2002-<br>Aug. 2004  | M.A.Sc | Design engineer,<br>ComDev, Cambridge, ON, Canada                               |
| <i>Thesis Title: Dynamic Testing of Structures using Scale Models</i>  |                           |        |   |
| <b>5- Korang Modaressi</b><br>ID: 4873998  | May 2002-<br>Aug. 2004    | M.A.Sc | Development Engineer, Irving Oil,<br>Canada                                     |
| <i>Thesis Title: Analysis of Transient Liquid Slosh inside a Partly Filled Tank Subjected to Lateral and Longitudinal Acceleration Fields</i>                        |                           |        |   |
| <b>6- Jianliang Ge</b><br>ID: 5043670  | Sept. 2003-<br>Nov. 2004  | M.A.Sc | Development Engineer, Montreal  |
| <i>Thesis Title: Analysis and Testing of MEMS Structures Subjected to Random Environment</i>   |                           |        |   |
| <b>7- Mehrad Ahari</b><br>ID: 5136156  | Sept. 2003-<br>Aug.2005   | M.A.Sc | Senior Consultant, Deloitte Canada.   |
| <i>Thesis Title: Design Optimization of an Adaptive Laminated Composite Beam with Piezoelectric Actuators</i>  |                           |        |   |
| <b>8-Mahabubul Chowdhury</b><br>ID: 5013283  | Sept. 2003-<br>April 2006 | M.A.Sc | Design Engineer, Husky Injection<br>Molding Systems Ltd., Bolton, ON,<br>Canada |
| <i>Thesis Title: Dynamic Performance of Heavy Vehicles Using Finite Element Method</i>   |                           |        |   |
| <b>9- Sridhar Chintapalli</b><br>ID: 5111420   | Sept. 2004-<br>Aug.2006   | M.A.Sc | Design Engineer , MacDonald, Dettwiler<br>and Associates Ltd. (MDA), Montreal   |
| <i>Thesis Title: Preliminary Structural Design Optimization of an Aircraft Wing-Box</i>  |                           |        |   |
| <b>10- Amandeep Singh</b><br>ID: 5395100   | Jan.2005-<br>Aug.2006     | M.A.Sc | Airframe Stress and Fatigue Lead, Bell<br>Helicopter, Montreal                  |
| <i>Thesis: Structural Optimization and Sensitivity Analysis using Finite Element Force Method</i>  |                           |        |   |
| <b>11- Md Mashiul Alam</b><br>ID: 5275024  | Sept. 2005-<br>May 2007   | M.A.Sc | Mechanical Design Engineer,<br>Ocean power Technologies, NJ, USA                |
| <i>Thesis Title: Modal Characteristics of Satellite Appendages using On-Orbit Output-Only Modal Testing</i>  |                           |        |   |
| <b>12- Mahmoud Rababah</b><br>ID: 5272572  | Sept. 2005-<br>Sept. 2007 | M.A.Sc | Development Engineer in a company in<br>Jordan.                                 |
| <i>Thesis Title: Damage Tolerance Analysis using eXtended Finite Element Method (XFEM)</i>   |                           |        |   |
| <b>13- Mahsa Moghaddas</b><br>ID: 5420148  | Sept. 2005-<br>March 2008 | M.A.Sc | Design Engineer, Bombardier<br>Aerospace, Montreal                              |
| <i>Thesis Title: Finite Element Analysis and Passive Vibration Control of the Timoshenko Beam Traversed by a Moving Vehicle Using an Optimized Tuned Mass Damper</i> |                           |        |   |
| <b>14- Arash Firoozrai</b><br>ID: 5420148  | June 2006-<br>August 2008 | M.A.Sc | Technical Specialist, ROI Engineering<br>Co, Montreal                           |
| <i>Thesis Title: Study of Aircraft structure under Hard Landing</i>  |                           |        |   |
| <b>15- Jean-Philippe Deblois</b><br>ID: 9180583  | June 2007-<br>April 2009  | M.A.Sc | Design Engineer, MacDonald Dettwiler<br>and Associates Ltd. (MDA), Montreal     |
| <i>Thesis Title: Experimental and Analytical Investigating of Overtesting during Assembly-Level Shock Testing</i>  |                           |        |   |
| <b>16- Md Ferdous Iqbal</b><br>ID: 6029175   | Sept. 2007-<br>June 2009  | M.A.Sc | Technical Specialist,<br>Wardrop Engineering Inc., Toronto, ON                  |
| <i>Thesis Title: Application of Magneto-Rheological Dampers to Control Dynamic Response of buildings</i>   |                           |        |   |



|  |                           |        |  |
|--|---------------------------|--------|--|
| <b>17- Mahboubeh Khani</b><br>ID: 9188665  | Sept. 2007-<br>Sept. 2010 | M.A.Sc | Application Product Engineer, Keyence<br>Canada  |
| <i>Thesis Title: Magneto-rheological (MR) Damper for Landing Gear System</i>   |                           |        |  |
| <b>18- Jasrobin Singh Grewal</b><br>ID:9434755   | Sept. 2009-<br>Sept. 2011 | M.A.Sc | Dynamic and Vibration Analyst<br>Pratt & Whitney, Montreal   |
| <i>Thesis Title: Vibration and Thermal Analysis and Optimum Design of Viscoelastic Sandwich Beam.</i>                                  |                           |        |  |
| <b>19- Armin Hadadian</b><br>ID: 9569545   | Sept. 2009-<br>Sept. 2011 | M.A.Sc | Stress Analyst, Siemens Canada,<br>Montreal  |
| <i>Thesis Title: Optimum Design of MR Dampers Constrained in a Specific Volume using Response Surface Method</i>                       |                           |        |  |
| <b>20- Gabriel Zeinoun</b><br>ID:6312268   | Sept. 2011-<br>Sept.2013  | M.A.Sc | Process Engineer, Plasti Lab (a<br>manufacturer of plastic laboratory and<br>medical devices), Beirut, Lebanon |
| <i>Thesis Title: Optimization of a Reconfigurable Manipulator with Lockable Cylinder</i>   |                           |        |  |
| <b>21- Shahrzad Nouri</b><br>ID:9749667  | Jan. 2012-<br>Oct. 2013   | M.A.Sc | PHD student at U of T  |
| <i>Thesis Title: Finite Element Modeling and Experimental Analysis to characterize a Single Living Cell using Dielectrophoresis</i>    |                           |        |  |
| <b>22- Mehdi Saffari-Farsani</b><br>ID:9261605   | Sept. 2012<br>Dec. 2013   | M.A.Sc | Design Engineer, Pressure Vessel<br>Engineering (PVEng.) Ltd., Waterloo,<br>Ontario                            |
| <i>Thesis Title: Structural Health Monitoring of Truss Structures Using Statistical Approach</i>                                       |                           |        |  |
| <b>23- Mohammad Shojaalsadati</b><br>ID:6218385  | Sept. 2011-<br>May 2014   | M.A.Sc | Development Engineer, Montreal   |
| <i>Thesis Title: Torsional Vibration Attenuation in V-Type Locomotive Diesel Engine Crankshaft using Centrifugal Pendulum Absorber</i> |                           |        |  |
| <b>24- Mehrnoosh Abedi</b><br>ID:6204341   | Jan. 2013-April<br>2016   | M.A.Sc | Development Engineer, Rheolution Inc.<br>Montreal  |
| <i>Thesis Title: Viscoelastic Characterization of Out-of-Autoclave Laminated Composites - Experimental and Finite Element Studies</i>  |                           |        |  |
| <b>25- Hadi Shamieh</b><br>ID: 27914814  | Sept. 2015-<br>Dec. 2016  | M.A.Sc | Product Engineer, PeaxEco Inc,<br>Montreal   |
| <i>Thesis Title: Modelling, Design Optimization and Control of Magneto Rheological Brakes for Automotive Applications</i>              |                           |        |  |
| <b>26- Ashkan Dargahi</b><br>ID: 2727426   | Sept. 2015-<br>Aug. 2017  | M.A.Sc | Research Assistant, Concordia  |
| <i>Thesis Title: Fabrication, Characterization and Modeling of Magnetorehological (MR) Elastomers</i>                                  |                           |        |  |
| <b>27- Behzad Jafari</b><br>ID: 29748105   | Sept. 2016-<br>April 2018 | M.A.Sc | Development Engineer   |
| <i>Thesis Title: Whole Spacecraft Vibration Isolation System: A comparison of Passive vs. Semi-Active Vibration Isolation Designs</i>  |                           |        |  |

**11.3. Post Doctoral Fellow Supervised**

| Name  | Duration                 | Degree | Present status  |
|---|--------------------------|--------|---|
| <b>1-Dr. Mohammad Hassan Sattari</b><br>ID: 0137331   | June. 2005-<br>May 2006  | PDF    | Assistant Professor, Amirkabir University of Technology-Tafresh Branch, Iran          |
| <i>Project: Sensitivity Analysis and Design Optimization using Finite Element Method for Finite Strain Elasto-Viscoplasticity Problems.</i>                                   |                          |        |   |
| <b>2- Dr. Abolghassem Zabiholla</b><br>ID: 4419820  | Sept. 2007-<br>Jan. 2008 | PDF    | Associate Professor-Sharif University of Technology, Iran                             |
| <i>Project: Structural Design Optimization of Aircraft Wing-Box</i>   |                          |        |   |
| <b>3- Dr. Fan Yang</b><br>ID: 5052386   | Oct. 2008-<br>Dec. 2009  | PDF    | Professor, College of Mechanical Engineering and Automation Huaqiao University, China |
| <i>Project: Vibration Suppression of Large Structures using Multi Passive and Semi-Active Tuned Mass Dampers</i>  |                          |        |   |
| <b>4- Dr. Farough Mohammadi</b><br>ID: 9546324  | June 2012-<br>March 2013 | PDF    | Stress Analyst and Team Leader, Pratt & Whitney, Montreal, QC                         |
| <i>Project: Correlations between Low Plasticity Burnishing Process parameters and Residual Stress Profiles</i>  |                          |        |   |
| <b>5- Dr. Ke Yan</b><br>ID: 27862717  | Jan. 2015<br>Jan. 2016   | PDF    | Faculty member, Xi'an Jiao Tong University, Xi'an, Shaanxi, China                     |
| <i>Project: Fault Diagnosis of Roller Element Bearings and Temperature Effect on Their Fatigue Life</i>   |                          |        |   |
| <b>6- Dr. Marjan Molavi-Zarandi</b><br>ID: 25809975   | Sept. 2015<br>Dec.. 2016 | PDF    | Research Scientist-National Research Council of Canada (NRC)                          |
| <i>Project: Selective Laser Melting Process Simulation of a Nickel-Based Superalloy Gas Turbine Component</i>   |                          |        |   |
| <b>7- Dr. Mehdi Eshaghi</b><br>ID: 0167890  | Jan. 2017-<br>June 2017  | PDF    | ETA-Assistant Professor at Concordia U.   |
| <i>Project: Bearing Health Monitoring and Clogged Spout Detection Using Finite Element Analysis and Advanced Signal processing Technique</i>                                  |                          |        |   |
| <b>8- Dr. Masoud Hemmatian</b>  | Jan. 2018-               | PDF    | PDF Horizon Fellowship, Concordia U.  |
| <i>Project: Characterization of MR Fluids Elastomers under wide range of Excitation Variation and Their Applications in Vibration Control. Co-Supervised with: S. Rakheja</i> |                          |        |   |

**11.4. Current Graduate Students under Supervision**

| Name  | Degree Start Date  | Present status |
|---|--------------------|----------------|
| <b>1- Mostafa Asadi</b><br>ID: 40030039   | Ph.D<br>Sept. 2016 | Ph.D Student   |
| <i>Thesis Title: Development and Design Optimization of a High- bandwidth Magnetorheological Elastomer (MRE) based Adaptive Tuned Vibration Absorbers: Simulation and Hardware-in-the-loop Experimental Study</i> |                    |                |

|   |                       |   |
|---|-----------------------|---|
| <b>2- Alireza Beheshti-Kisomi</b><br>ID: 40030741   | Ph.D<br>January, 2017 | Ph.D Student                                      |
| <i>Thesis Title: Nonlinear Analysis of Magnetorheological Elastomers (MRE) under Large Deformation.</i><br>Co-supervised with S. Rakheja  |                       |   |
| <b>3- Hossein Vatandoost</b><br>ID: 40034088  | Ph.D<br>January, 2017 | Ph.D Student                                      |
| <i>Thesis Title: Characterization of Magnetorheological Elastomers (MREs) under Tension and Compression mode and Development of MRE-based Isolators and Bearings.</i>                 |                       |   |
| <b>4- Xiao Cai</b><br>ID: 5615046   | Ph.D<br>Sept. 2012    | Ph.D Candidate<br>(Expected to defend April 2019) |
| <i>Thesis Title: Experimental, Numerical and Design Optimization Investigation on Stamp Forming of Carbon Fiber Reinforced Thermoplastic Composites.</i><br>Co-supervised with S. Hoa |                       |   |
| <b>5- Armin Hadadian</b><br>ID: 9569545   | Ph.D<br>Sept. 2013    | Ph.D Candidate                                    |
| <i>Thesis Title: Analysis and Optimization of Residual Stresses Induced by Deep Cold Rolling to Improve Fatigue Life Properties of Aerospace Components.</i>                          |                       |   |
| <b>6- Mohamed El Bouzouiki</b><br>ID: 6199844   | Ph.D<br>January 2014  | Ph.D Candidate                                    |
| <i>Thesis Title: A Novel Cellular Automata Approach for Optimization of the Discrete and Continuous Structures.</i><br>Co-supervised with I. Stiharu                                  |                       |   |
| <b>7- Mana Mirmirani</b><br>ID:40012256   | M.A.Sc<br>Sept. 2016  | M.A.Sc student<br>(Expected to defend Nov. 2018)  |
| <i>Thesis Title: Design Optimization of Reconfigurable Manipulators with Smart Lockable Joints.</i>   |                       |   |
| <b>8- Lin Fan</b><br>ID:40037365  | M.A.Sc<br>Sept. 2017  | M.A.Sc student                                    |
| <i>Thesis Title: Development of an Adaptive Tuned Vibration Absorber Featuring MR Elastomer and its Integration with a Flexible Structure to Control Vibration</i>                    |                       |   |
| <b>9- Nader Mohseni Ardehali</b><br>ID:40080324   | M.A.Sc<br>Sept. 2018  | M.A.Sc student                                    |
| <i>Thesis Title: Characterization of Novel MR Elastomers with Hard Magnetic Fillers</i>   |                       |   |
| <b>10- Armin Rasooli</b><br>ID:40083308   | M.A.Sc<br>Sept. 2018  | M.A.Sc student                                    |
| <i>Thesis Title: Development of Novel MR based Vibration Isolators for Automotive Applications</i>  |                       |   |
| <b>11-Zhou Zheng</b><br>ID: 40047244  | Ph.D<br>Sept. 2017    | Ph.D Student                                      |
| <i>Thesis Title: Airless Tires with Pneumatic Air Cylinder Spokes: Development of Finite Element Model and Experimental Tests.</i><br>Co-supervised with R. Rakheja                   |                       |   |

**12-Mauricio Campillo**, PhD Candidate internship from Chile. Sept. 2018-  
Co-supervised with R. Drew.

**11.5. Undergraduate Capstone Projects Supervised**

| <b>Group</b>   | <b>Duration</b>       | <b>Title of Capstone Project</b>                                   |
|--|-----------------------|--|
| Artin Messerkhani<br>Rami Awad<br>Darko Ponevic<br>Dmitri Tchjen   | Sept. 2001-April 2002 | Design, Modeling and Fabrication of a Scooter                      |
| John Erian<br>Joseph Guindi<br>Malak Sedra<br>Chahine Bounatiro  | Sept. 2002-April 2003 | A Study in the Reduction of Jackhammer-Induced Hand-Arm Vibrations |
| Christopher Gruden<br>Andrew Chen<br>Mohammed Tavanayanfar<br>Jonathan Desmarais<br>Mathew Snoddon                 | Sept. 2003-April 2004 | Vibration Damping using Smart Structure-Design and Experimentation |
| Gilbert Migirditsian<br>James Gabriel<br>Amir Jalini<br>Robert Chalhoub  | Sept. 2003-April 2004 | Design and Fabrication of Formula SAE Collapsible Work Stand       |
| Hoi Leung Brian Chan<br>Jihad Charouk<br>Khalid Abu Sheikha<br>Roger Abdalla<br>Sun Woo Yoon<br>Bruno Besson       | Sept. 2004-April 2005 | Design and Fabrication of Lightweight Scooter Chassis              |
| Artin Messerkhani<br>Rami Awad<br>Darko Ponevic<br>Dmitri Tchjen   | Sept. 2005-April 2006 | Design and Development of a Single Seated Hovercraft.              |
| Jonathan Saia<br>Ramzie Jubran<br>Surinder Singh Bharaj<br>Maged Ghaly<br>Fady Credi<br>Oumar Diallo               | Sept. 2006-April 2007 | Design and Fabrication of an Urban 2-Seat Gasoline vehicle         |
| Walter Chan<br>Kevin Denoncourt<br>Sean Durand<br>Marc Head  | Sept. 2007-April 2008 | Design and Fabrication of a Five Passenger Concrete Toboggan       |
| Adam Gadoua<br>Nicolas Capano<br>Mahmoud El-Harake<br>Behnaz Ensan<br>Tarek Chalhoub                               | Sept. 2009-April 2010 | Design and Fabrication of a Human Powered Vehicle                  |
| Joseph D'Adamo<br>Michel Andelnour<br>Charles Bui<br>Charles Carestia<br>Frederick Kwiatkowski<br>Davide Lapalucci | Sept. 2011-April 2012 | Design and Fabrication of a Dual Inline Recumbent Racer            |

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|---|-----------------------|---|
| Harkamalpreet Singh Kaloti<br>Ramandeep Kaur Chahal<br>Kim Borsa<br>Gohar Ali<br>Rahul Shingari                             | Sept. 2012-April 2013 | Design , Manufacturing and Testing of MR based Adaptive Plate   |
| Kevin Savage<br>Guillaume Chauvet<br>Dominik Hebert<br>Laurent Dumouchel<br>Yao Feng  | Sept. 2013-April 2014 | Design, Fabrication and Testing of a Magnetorheological based Vibration Damper  |
| Adedeji Adegbenro<br>Yves Christian Tchatchouang<br>Shams Islam Khan<br>Parth Khandekar<br>Jean Wehbe<br>Mustafizur Bhuiyan | Sept. 2014-April 2015 | Design, Fabrication and Testing of Facilities to Study Sound Transmission Loss in Sandwich Panels with MR/ER Fluid as the Core Layer. |
| Jordan Bellemore<br>Gregory Seviara<br>Joshua Gladstone<br>Louis Morissette<br>Gerard Desmarais                             | Sept. 2014-April 2015 | Design and Fabrication of the MDA Null Gravity Apparatus for Antenna Reflectors   |
| Umar Zahid<br>Mohamad El Chayeb<br>Fawad Ahmad<br>Fabrizio Bezzi<br>Ian Ilmas   | Sept. 2016-April 2017 | AERO Landing Gear   |
| Sarah Morgan<br>Massimo Pietracupa<br>Sherif Zgheib<br>Anthony Racanelli<br>Lysanne Pagé<br>Sidney Gutteridge               | Sept. 2017-April 2018 | Vibrotactile Stimulator   |
| Daniele Taurasi<br>Michael Falcone<br>Apexa Patel<br>Glen Alfred<br>Ryan Quinn<br>Ali Shat                                  | Sept. 2018-April 2019 | Lightweight Folding Bicycle   |

**Other undergraduate students supervised:**

**Harry Labajian** summer 2002. Summer Career Placements

*Project: Vibration suppression of aerospace structures using piezoelectric materials.*

**Adrian Morew Buchanan** Fall 2003. Co-op program *Project: Smart materials and their applications in aerospace.*

## 12. SERVICES AND SCHOLARLY ACTIVITIES

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### **12.1. Service and Administrative Works in University**

- Member of Faculty Personnel Committee (FPTC) June 2016-May 2018
- Member of the Faculty Design Committee June 2013-May 2015
- Member of the Faculty Search Committee for NSERC Design Chair 2013-2014
- Member of the Department RTI committee 2013
- Member of the Department Appraisal Committee 2013-2014
- Member of Department Personnel Committee (DPC) June 2011-May 2015
- Member of Faculty Personnel Committee (FPTC) June 2010-May 2012
- Member of Department Aerospace Curriculum Committee Sept 2010-May 2015
- Member of the Dept. Health and Safety Committee Jan. 2010-May 2015
- Member of Student Request Committee Oct. 2009-May 2012
- Member of Department Tenure Committee June 2006-present
- Member of Department Design Committee June 2003-
- Undergraduate Program Director June 2006-May 2008
- Co-op Program Director June 2003-May 2006
- Member of Department Co-op Committee (Chair) June 2003-May 2006
- Member of Engineering and Computer Science Faculty Council June 2006-May 2008
- Member of Faculty Undergraduate Curriculum Committee June 2006-May 2008
- Member of Department Curriculum Committee June 2003- May 2016
- Member of Department Steering Committee, June 2003-May 2008
- Member of Part-time, TA and LI Hiring Committee June 2006-May 2008
- Member of MIE Election Committee June 2002-May 2006
- Councilor in Concordia Union Faculty Association 2002
- Member of Various Department Search Committees for Positions on: 2002-  
Design/Manufacturing; Advance Manufacturing/Aerospace,  
Aerospace Structure; Biomechanics, Aero-elasticity and Aero-design, Solid Mechanics, Vibration.

### **12.2. Thesis Examination Committees:**

Serving on regular basis as examiner or chair on theses M.A.Sc exam committees, comprehensive exam, proposal and final defense Ph.D exam committees in the department and faculty.

### **12.3. Scholarly and Professional Services**

#### **Associate Editor/Editorial Board Member and Guest Editors**

- Journal of Intelligent Material Systems and Structures (JIMSS), SAGE  
Since June 2011 (NOTE: JIMSS is one of top two journals in the area of smart materials and structures- Impact factor: 2.21)
- Journal of Actuators, MDPI, Since 2017
- Journal of Vibration, MDPI, Since 2018

#### *Guest Editor for Special Issues:*

Special Issue in Actuators: Modeling Smart Actuators and their Applications

Special Issue in Vibration: Semi-active and Active Vibration Control using Smart Materials

**Journal Reviewer****Reviewing articles for the following journals:**

AIAA Journal; ASME Transactions-Journal of Dynamic Systems; Measurement and Control; Journal of Smart Materials and Structures; Journal of Intelligent Material Systems and Structures; Journal of Sound and Vibration (JSV); Journal of Vibration Control (JVC); International Journal of Solids and Structures; Journal of Composite Structures; Journal of Science and Engineering of Composite Materials; Journal of Composite Materials; Finite Elements in Analysis and Design; Journal of Mechatronics; Journal of Nonlinear Dynamics; International Journal of Engineering Structures; Journal of Computers and Structures; Journal of Thin-Walled Structures; Journal of Mechanics of Materials and Structures; International Journal of Mechanical Sciences; Communications in Nonlinear Science and Numerical Simulations; Advances in Acoustics and Vibration; Journal of MECHANICS Research Communications-Basics and Applied; Canadian Aeronautics and Space Journal (CASJ); CSME Transactions; International journal of Smart and Nano materials; IEEE Sensors Journal; Engineering with Computers; International Journal of Mechanical Science and Technology; Mechanics of Advanced Materials and Structures; Engineering Optimization; Proceedings of the Institution of Mechanical Engineers-Part C; Journal of Mechanical Engineering Science; Journal of Sandwich Structures and Materials; Applied Mathematical Modeling; Shock and Vibration; Journal of Engineering Research; Journal of structural Engineering; Journal of Materials and Design; Journal of Structural and Multidisciplinary Optimization; Journal of Aeroelasticity and Structural Dynamics; International Journal of Industrial Ergonomics; Structural Health Monitoring; Journal of Mechanical Science and Technology; Journal of Nonlinear Engineering-Modeling and Application; Shock and Vibration; Mechanical Systems and Signal Processing; Journal of Sensors and Actuators A: Physical; Journal of Mechanical Science and Technology; International Journal of Structural Engineering and Mechanics; Composites Part B; International Journal of Mechanical Sciences; Mechanics of Advanced Materials and Structures; International Journal of Pressure Vessels and Piping; Journal of Low Frequency Noise, Vibration and Active Control.

**Reviewed Text Books**

- Review of the Finite Element Book (*A First Course in the Finite Element Method*, D. L. Logan, 3<sup>rd</sup> Edition, Books/Cole-Thomson Learning Publisher)
- Review of the Dynamic Book (*Dynamics: Analysis and Design of Systems in Motion*, B. H. Tongue and S. D. Sheppard, John Wiley & Sons)
- Review of the Engineering Design Book (*Engineering Design, Planning and Management*, Hugh Jack, Academic Press)
- Review of the book proposal (*Vibration Mitigation Devices for Civil Engineering Structures*, A. Okay, CRC Press)
- Review of the book proposal (*Product Design*, Devtas Shetty, Cengage Learning)
- Review of the book proposal (Modal Testing, Structural Dynamic Modelling and Dynamic Design, S. V. Modak and T.K. Kundra, CRC press)

**Reviewing Proposals**

- Proposals for NSERC Discovery and Partnership Programs.
- MITACS Accelerate and Elevate Proposals.
- Proposals for European Science Foundation (ESF) within the framework of the EUROCORES. (ESF Collaborative Research Programmes) on Smart Structural Systems Technologies (S3T).
- Proposal for Technology Foundation STW (Dutch funding agency).
- Proposal for Natural Sciences and Engineering of the Academy of Finland.
- Proposal for Austrian Science Fund (FWF)-START project.
- Reviewing several promotion and tenure cases for faculty members in other Universities.

**Invited External Examiner for PhD Research Thesis in other Universities**

- School of Mechatronic Systems Engineering, Simon Fraser University, December 2018.

- Department of Mechanical and Industrial Engineering, University of Toronto, April 10, 2018.
- Faculty of Engineering, RMIT University, Melbourne, Australia, September 2016.
- Department of Mechanical and Industrial Engineering, University of Toronto, Jan. 28, 2016.
- Department Mechanical and Mechatronics Engineering, University of Waterloo, Sept. 4, 2015.
- Faculty of Engineering, RMIT University, Melbourne, Australia, October 2014.
- Faculty of Engineering and Architectural Science, University of Ryerson, January 2014.
- Faculty of Engineering, University of Queretaro, Queretaro, Mexico, December 2012.
- Institute for Aerospace Studies, University of Toronto, September 2012.
- Department of Civil and Resource Engineering, Dalhousie University, March 2009.
- Department of Mechanical Engineering, University of Victoria, July 2004.

### **Judging International Design Projects**

Appointed as the national judge for the 2010 James Dyson Award.

This is a prestigious international design award that celebrates, encourages and inspires the next generation of design engineers.

### **Other Evidence of Impact and Contributions**

- General Chair, The 30th International Conference on Adaptive Structures and Technologies (ICAST2019), Oct. 7-11, Montreal, Canada
- Session Organizer and Chair, ASME2018 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (2018 SMASIS), San Antonio, Texas, USA, Sept. 10-12, 2018.
- Invited Speaker, Investigation on Vibration and Sound Transmission Behavior of Magnetorheological (MR) based Adaptive Vibration Panels, South China University of Technology (SCUT), Guangzhou, China, April 27, 2018.
- Keynote Speaker, Vibration and Sound Transmission Behavior of Magnetorheological (MR) based Adaptive Structures, World Congress on Mechanical and Mechatronics Engineering, Dubai, UAE, April 16-17, 2018.
- Member of the organizing committee, International Conference on Advanced Mechatronic Systems, Xiamen, China, Dec. 6-9, 2017.
- Session Chair, SPIE Smart Structures and Materials, Portland, Oregon, USA, March 25-29, 2017.
- Session Chair, ASME2016 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (2016 SMASIS), Stowe, Vermont, USA, Sept. 28-30, 2016.
- Invited Speaker, Design Optimization of a Magneto-rheological Valve Constrained in a Specific Volume Using Finite Element and Response Surface Methods, Tsinghua University, Beijing, China, December 24, 2015.
- Invited Speaker, Design Optimization of a Magneto-rheological Valve Constrained in a Specific Volume Using Finite Element and Response Surface Methods, Southern Auto NVH Forum 2015, South China University of Technology (SCUT), Guangzhou, China, December 18, 2015.
- Invited Speaker, Semi-Active Control of Torsional Vibrations using a MR based-Rotary Damper, South China University of Technology (SCUT), Guangzhou, China, October 9, 2015.
- Member of National Advisory Committee, 24<sup>th</sup> International Congress of Theoretical and Applied Mechanics, Palais des congrès, Montreal, Canada, August 21-26, 2016.
- Plenary Speaker, Challenges in Modeling and Optimization of MR/ER based Adaptive Structures, 2015 11th Congreso Internacional de Ingeniería (CONIIN), Universidad Autonoma de Queretaro, Queretaro, Mexico, May 11-15, 2015.
- Invited Speaker, Hybrid Torsional Damper for Semi-Active Control of Torsional Vibrations in Rotating Machines, Faculty of Engineering, Zhejiang University of Technology, Hangzhou, China, Dec. 16, 2014.



- Invited Speaker, Semi-Active Control of Torsional Vibrations using a MR based-Hybrid Rotary Damper, South China University of Technology (SCUT), Guangzhou, China, October 9, 2015.
- Session Chair, ASME2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (2014 SMASIS), Newport, Rhode Island, USA, Sept. 8-10, 2014.
- Member of jury to select the best papers for publication in a special issue of the *ASME Journal of Applied Mechanics*), twelfth Pan American Congress of Applied Mechanic (PACAM XII), Port of Spain Trinidad, Jan. 2-6, 2012,
- Session Chair, the 5<sup>th</sup> International Conference on Intelligent Robotics and Applications, Montreal, Quebec, Canada , October 3-5, 2012.
- Invited Speaker, Active and Passive Vibration Control in Structures, Facultad de Ingenieria Area Electromecanica, Universidad Autonoma De Queretaro, Queretaro, Mexico, February 24, 2009.
- Session Chair, International Conference on Advances in Dynamics, Instrumentation and Control, Nanjing, China, August 18-20, 2004.
- Session Chair, the Eighth Pan American Congress of Applied Mechanic (PACAM VIII), Havana, Cuba, January 5-9, 2004.
- Session Chair, the first M.I.T. Conference on Computational Fluid and Solid Mechanics, MIT-Cambridge, MA, June 12-14, 2001.
- Invited Talk, Smart Laminated Composite Structures : Theory and Application, Center de Recherche en Plasturgie et Composites (CREPEC), École de Technologie Supérieure, Montréal, December 13, 2006.
- Invited Talk, Structural Optimization of Nonlinear Problems, Center de Recherché en Calcul Appliqué (CERCA), Montreal, May 2002.
- Invited Talk, Force Limited Random Vibration Testing, Department of Mechanical Engineering, University of Victoria, Victoria, August 2001.
- Invited Talk, Investigations in Structural Optimization of Nonlinear Problems using the Finite Element Method, Canadian Space Agency, John H. Chapman Space Center, Saint-Hubert, October 2000.