

GUSTAVO J. MOLINA, PhD

EDUCATION

- 2000 **PhD, Mechanical Engineering**. July 2000.
Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, Virginia.
Dissertation: "Triboemission of Charged Particles from Ceramics: Integrated Charge and Energy Distribution Characterizations". Adviser: Dr. M.J.Furey.
- 1994 **Master of Applied Science in Mechanical Engineering**. September 1994.
University of Ottawa, Ontario, Canada.
Thesis: "On the Characterization of Impact Properties of Engineering Materials - An Acousto-Ultrasonics Pattern-Recognition Approach". Adviser: Dr. Y.M.Haddad.
- 1986 **Mechanical and Electrical Engineer Diploma**. July 1986.
National University of Cordoba, Argentina.

ACADEMIC AND PROFESSIONAL EMPLOYMENT

- 2019 **Professor**, August 2019 - present.
Department of Mechanical Engineering, Georgia Southern Univ., Statesboro, GA.
- 2006 **Associate Professor**, August 2006 – July 2019
Department of Mechanical Engineering, Georgia Southern Univ., Statesboro, GA.
- 2000 **Assistant Professor**, August 2000 - July 2006.
School of Technology, Engineering Studies, Georgia Southern University, Statesboro, GA.
- 1996 **Graduate Research Assistant**, August 1996 - July 2000. .
Dept. of Mechanical Engineering, Tribology Laboratory, Virginia Tech, Blacksburg, VA.
- 1996 **Lecturer**, Oct.1995-May1996. Natl. Institute of Industrial Technology, Argentina. Jan. 1996 - Aug.1996. Dept of Industrial Design, National U. of Cordoba, Argentina.
- 1992 **Graduate Research Assistant**, Aug.1992 – Sept.1994. Univ. of Ottawa, Ontario, Canada.
Implemented quantitative nondestructive evaluation of residual impact properties. Designed pattern recognition and classification methodology for nondestructive data
- 1990 **Technical Consultant**, March 1990 - July 1991. ProMEDon, Argentina.
- 1987 **R&D Engineer and Project Leader**, January 1987 - August 1996 (on study leave Aug.1992 - Sept.1994). National Institute of Industrial Technology, Argentina.
- 1984 **Undergraduate Research (Co-op)**, Aug.1984-Dec.1986. Natl. Inst. of Ind. Techn., Argentina.
- Graduate Thesis directed** (Master of Science in Applied Engineering, three as main faculty adviser, eight as thesis committee member):
- Ms. Sultana Shanta (M.Sc.App.Eng.). Thesis title: "Investigations of the tribological effects of engine oil dilution by vegetable and animal fat feedstock biodiesel on selected surfaces", 2011.

- Mr. Fnu Aktaruzzaman (M.Sc.App.Eng.). Thesis title: "Assessment of the wear effects of alumina-nanofluids on heat-exchanger materials", 2015
- Mr. Emeka Onyejizu (M.Sc.App.Eng.). Thesis title: "Tribological effects of mineral oil dilution: a methyl ester breakdown study", 2018.

RESEARCH EXPERIENCE

Refereed Journal Publications and Book Chapters as first author

- 2019 G.J. Molina, Developments based on QFD and TRIZ in a Mechanical Engineering Design Course, **International Journal of Design Education**, Vol.13, Issue 3, 2019, 67-80.
- 2018 G.J. Molina, Fnu Aktaruzzaman, V. Soloiu, M. Rahman, Erosion-corrosion wear of heat-exchanger materials by water/ethylene-glycol/alumina nanofluids, **International Journal of Surface Engineering and Interdisciplinary Materials Science**, Vol 6, 2, July-December 2018, 1-22.
- 2017 G.J. Molina, Fnu Aktaruzzaman, V. Soloiu, M. Rahman, K. Martin, *Design and testing of a jet-impingement instrument to study surface-modification effects by nanofluids*, **International Journal of Surface Engineering and Interdisciplinary Materials Science**, Vol 5, Issue 2, July-December 2017, 43-61.
- 2017 G.J. Molina, Fnu Aktaruzzaman, V. Soloiu, M. Rahman, K.Martin, *Development and Assessment of a New Flow-Through Test Instrument to Study Wear and Erosion Effects of Nanofluids*, **International Journal of Surface Engineering and Interdisciplinary Materials Science**, Vol 5, Issue 1, January-June 2017, 60-77.
- 2017 **Book Chapter:** G.J. Molina, C. Kajdas K. Hiratsuka, A. Sasaki, R.C. Dante, "Chapter 2. Tribochemistry. Triboemission of exoelectrons", in "**3T-Tribocatalysis, Tribochemistry and Tribocorrosion**", C.Kajdas, K.Hiratsuka editors, Taylor & Francis Publ., Abingdon, UK, 1st edition, December 31, 2017, ISBN 9789814669696.
- 2014 G.J. Molina, FNU Aktaruzzaman, W. Stregles, V. Soloiu, M. Rahman, *Jet-impingement effects of alumina-nanofluid on aluminum and copper*, **Advances in Tribology**, Volume 2014, 2014, Article ID 476175, 8 pages. <http://dx.doi.org/10.1155/2014/476175>
- 2012 G.J. Molina, M. Hulett, V. Soloiu, M. Rahman, *Erosion effects of nanofluids on selected cooling-system materials*, Third International Symposium on Tribo-Corrosion, **ASTM STP 1563**, P. J. Blau, F. E. Schmidt, D. Drees, and J.-P. Celis, Eds., ASTM Intl, West Conshohocken, PA, 2012, 47-65.
- 2011 S.M. Shanta, G.J. Molina, V. Soloiu, *Tribological Effects of Mineral-Oil Lubricant Contamination with Biofuels: A Pin-on-disk Tribometry and Wear Study*, **Advances in Tribology**, Volume 2011, Article ID 820795, doi:10.1155/2011/820795 .
- 2010 C.Kajdas, A. Kulczycki, K.J. Kurzydowski, G.J.Molina, *Activation energy of tribochemical and heterogeneous catalytic reactions*, **Materials Science (Poland)**, 28,2, 523-533.

- 2007 G.J.Molina, M.Furey, C. Kajdas, *A Deterministic-Chaos Study of Electron Triboemission Outputs*, **ASME Transactions: Journal of Tribology**, Volume 129, Issue 3, 2007, 679-683. (Scimago (SJR)-Impact Factor: 1.677).
- 2007 G.J.Molina, *Analysis of Large Sets of Seemingly-Random Experimental Data: The Case of Electron Emission from Frictional Contacts*, **Mecanica Computacional**, Vol XXVI, 2007, 2728-2741. <https://cimec.org.ar/ojs/index.php/mc/article/view/1187/1135>
- 2006 G.J. Molina, *A preliminary study on the dynamics of triboemission, work function and surface charging of ceramics*, **The Ann. of U. "Dunarea de Jos"**, Romania, Fasc.VIII(Tribology) ISSN: 1221-4590, 2006, 22-27. <http://www.om.ugal.ro/Annalsfasc8tribology/>
- 2005 G.J. Molina, N. Steika, M. Furey, C. Kajdas, *On the mechanism of electron triboemission from ceramics*, **The Annals of Univ. "Dunarea de Jos"**, Romania, Fasc.VIII(Tribology), 2005,17-23.
- 2004 G.J. Molina, D.A.Mazilu, M.J.Furey, C.Kajdas, *On Triboemission from the Sliding Contact of Si and Ge*, **The Annals of Univ. "Dunarea de Jos"**, Romania, Fasc.VIII (Tribology), 2004, 22-29.
- 2004 C. Kajdas, G.J. Molina, M.J. Furey, D.A. Mazilu, *Low-Energy Triboelectrons and Tribochemistry - A Review*, **Tribology Sc. and Application**, CUN-PAN Publ., Vienna, Austria, 2004, 26-49.
- 2003 G.J. Molina, M.J. Furey, A.L. Ritter, C. Kajdas, *Importance of Low-Energy Triboelectrons for the Initiation of Tribochemical Reactions*, **Tribologia i Praktika** (Poland), 1/(187), 2003, 103-122.
- 2003 G.J. Molina, M.J. Furey, A.L. Ritter, C. Kajdas, *The Role of Triboemission in Tribology: A Review*, **Tribologia-Finnish Journal of Tribology**, 21, 4, 2003, 3-11.
- 2003 G.J. Molina, M.J. Furey, A.L. Ritter, C. Kajdas, *Frequency analysis and modeling of charged-particle triboemission from ceramics*, **Wear**, Vol.255, 1-6, 2003, 686-694.
- 2002 C.Kajdas, M.J.Furey, A.L.Ritter, G.J. Molina, *Triboemission as a Basic Part of the Boundary Friction Regime*, **Lubrication Science**, Vol.14, No1, 2002, 223-254.
- 2001 G.J. Molina, M.J. Furey, A.L. Ritter, C. Kajdas, *Triboemission from Alumina, Single Crystal Sapphire, and Aluminum*, **Wear**, Vol. 249, 3-4, 2001, 214-219.
- 2001 G.J. Molina, Y.M. Haddad, *On the Design of Acousto-Ultrasonics – Pattern-Recognition Classifiers for the Identification of Material Response*, **J. of the Mechanical Behavior of Materials**, 12(5), 2001, 255-272.
- 1995 G.J. Molina, Y.M.Haddad, *On the Identification of Residual Impact Properties of Materials by Acousto-Ultrasonics-A Pattern Recognition Approach*, **Acta Mechanica Sinica**, 11,1,1995, 34-43.
- 1995 G.J. Molina, Y.M.Haddad, *An Acousto-Ultrasonics Approach to the Characterization of Impact Properties of a Class of Engineering Materials*, **Intl J.of Press.Vess. & Pip.**, 63, 1995, 307-315.

Invited national and international seminar presentations

- 2007 Summer Institute on Nanomechanics and Nanomaterials, Northwestern University, July 2007.
- 2008 G.J. Molina, invited seminar, Development and updating of a high-vacuum tribometer for particle triboemission, Warsaw Univ. of Techn., Dept. of Materials Sc., Warsaw, Poland, June 10, 2008.
- 2008 G.J. Molina, invited seminar, Measurement of electrons generated during friction, Warsaw Univ. of Technology, Department of Mechanics and Petrochemistry, Plock, Poland, June 12, 2008.
- 2011 G.J. Molina, An overview of triboemission phenomena and of its measurement and analysis techniques, Invited workshop, AC2T-OTG, Wiener Neustadt, Austria, June 6, 2011.

2018 G.J. Molina, Graduate class and seminar on nanofluid and biodiesel tribology at the Tribology and Lubrication Science minor of Auburn University, AL (MECH 5230: Friction, Wear and Lubrication).

Conference proceedings and presentations

(2006 - 2019)

- 2006 G.J. Molina, M. Furey, C. Kajdas, *A Deterministic-Chaos Study of Electron Triboemission Outputs*, Proceedings of STLE/ASME International Joint Tribology Conference, October 22-25, 2006, San Antonio, TX, USA.
- 2006 G.J. Molina, *The acousto-ultrasonic technique for quantitative nondestructive evaluation: a state of the art review*, Proc. of the ASNT Fall meeting, Houston, TX, October 2006.
- 2007 G.J. Molina, M. Furey, C. Kajdas, *Charged-particle triboemission, tribocharging and work function change from scratching of insulators*, Proc. of the Adhesion Society 2007 Meeting, Tampa, FL, Feb. 18-20, 2007.
- 2007 G.J. Molina, *A study on the use of knowledge representation for teaching engineering problem solving*, Proc. of the ASEE SE Section Regional Conf., Louisville, KY, April 2-4, 2007.
- 2007 G. Maldonado, G.J. Molina, *An analogy tool to visualize bending-moment diagrams*, Proc. of the ASEE SE Section Regional Conf., Louisville, KY, April 2-4, 2007.
- 2008 D. Schaefer, D.W. Scott, G.J. Molina, Y.A. Kalaani, T. Murphy, W. Johnson, *Integration of Distance Learning Technology into Traditional Engineering Physical Laboratory Exercises*, Proc. of the ASEE SE Section Regional Conf., Memphis, TN, April 6-8, 2008, CD Rom.
- 2008 G. J. Molina, *On engineering students' algorithm insight and math manipulation abilities: A review*, Proc. of the ASEE SE Section Regional Conf., Memphis, TN, April 6-8, 2008, CD Rom.
- 2008 G. J. Molina, D. Cowart, M. Furey, C. Kajdas, *Development and updating of a high-vacuum tribometer for particle triboemission*, Proc. of the STLE Annual Meeting and Conf., Cleveland, OH, May 18-22, 2008, CD Rom.
- 2008 G.J. Molina, J.O. Garcia, J.N Fuentes, D.A Herrera, *A Study of Lift for A Tandem-biplane Wing Configuration: Screening of Geometric Factors by Computer Simulation*, Proc. of the SEM XI Annual Conf. on Experimental and Applied Mechanics, Orlando, FL, June 2-5, 2008, CD Rom.
- 2008 G.J. Molina, C. Kajdas, M. Furey, R. McDaniel, *High-vacuum tribometers: State of the art and current development*, Proceedings of STLE/ASME International Joint Tribology Conference, October 19-22, 2008, Miami, FL, USA.
- 2009 G.J. Molina, C. Kajdas, M. Furey, *Charged triboemission from sliding contacts: possible mechanisms and its relation with surface chemical processes*, Proc. of 32nd Annual Meeting of The Adhesion Society, Savannah, GA, February 15-18, 2009.
- 2009 C.Kajdas, A. Kulczycki, K.J. Kurzydowski, G.J. Molina, *Activation energy of tribochemical and heterogeneous catalytic reactions*, Proc. of STLE 2009 Annual Meeting, Orlando, FL, May 18-21, 2009.
- 2009 V. Soloiu, G.J. Molina, *Tribological Aspects of a Diesel Injector Operation with Charcoal-Oil Slurries*, Proc. of STLE 2009 Annual Meeting, Orlando, FL, May 18-21, 2009.
- 2010 G.J. Molina, V. Soloiu, S.M. Shanta, C. Hilliard, *A preliminary study on effects of lubricant contaminated with biofuels*, Proc. of STLE 2010 Annual Meeting, Las Vegas, NV, May 17-21, 2010.
- 2010 G.J. Molina, R. McDaniel, K. Hiratsuka, C. Kajdas, *A preliminary study on tribo-photoemission from sliding surfaces*, Proc. of STLE 2010 Annual Meeting, Las Vegas, NV, May 17-21, 2010.
- 2010 V. Soloiu, C. Hilliard, G. Molina, B. Vlcek, *Experiment Design, Instrumentation and Preliminary Camshaft Tribology Studies of an Ethanol Fuelled Otto Engine for Lawn Mower Application*, Proc. of STLE 2010 Annual Meeting and Conf., Las Vegas, NV, May 17-21, 2010.
- 2010 G.J. Molina, M. Rahman, *Development of a testing rig for erosion with nanofluids*, Proc. of STLE 2010 Annual Meeting, Las Vegas, NV, May 17-21, 2010.
- 2011 V. Soloiu, J.Lewis, G.J. Molina, B. Vlcek, Y.Yoshihara, K. Nishiwaki, *Small bore direct injection diesel engine operation with charcoal diesel slurries*, Proc. of Technische Akademie Esslingen 18th Int'l Conf. on Trib., Esslingen, Germany, Jan. 2011.
- 2011 G.J. Molina, C. Kajdas, A. Kulczycki, *Development of an instrument for studies of charged triboemission transport in gas atmospheres*, Proc. of STLE 2011 Annual Meeting, Atlanta, GA, May 16-19, 2011.
- 2011 G.J. Molina, M. Rahman, V. Soloiu, C. Walker, M. Hulett, *Exploratory research work on tribological effects of nanofluids*, Proc. of STLE 2011 Annual Meeting, Atlanta, GA, May 16-19, 2011.
- 2011 S.M. Shanta, G.J. Molina, V. Soloiu, *Tribometry studies on the effects of lubricant contamination with biofuels*, Proc. of STLE 2011 Annual Meeting, Atlanta, GA, May 16-19, 2011.
- 2011 G.J. Molina, C. Kajdas, *Triboemission phenomena and possible connections to tribocatalysis*, Proc. of the European Conf. on Tribology, EcoTrib 2011-Viennano 2011, editors: Franek,F., Bartz,W.J., Pauschitz,A., Vizintin,J., Ciulli,E. Crockett, R., Vienna, Austria, June 7-9, 2011, 779-784.
- 2012 G.J. Molina, C. Kajdas, *Triboemission phenomena: electronic and photonic output during friction contact and its connections to surface processes*, Proc. of the TMS 2012 Annual Meeting, Orlando, FL, March 11-15, 2012.

- 2012 G.J. Molina, M. Rahman, M. Hulett, V. Soloiu, *Exploratory research in erosion effects of nanofluids on metallic materials*, Proc. of the TMS 2012 Annual Meeting, Orlando, FL, March 11-15, 2012.
- 2012 G.J. Molina, M. Hulett, M. Rahman, V. Soloiu, C. *Erosion effects of nanofluids on selected cooling-system materials*, Proc. of 3rd Int'l Conference in Tribocorrosion, Atlanta, GA, 19-20 April 2012.
- 2012 M. Rahman, C. Walker, G. Molina, V. Soloiu, M. Bhuiyan, *Numerical Study of Laminar Natural Convection in Square to Shallow Enclosures: Effects of Temperature Gradient and Heat Source*, Proceedings of 2012 Joint Conference of the Engineering Mechanics Institute and 11th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability (EMI/PMC 2012), University of Notre Dame, June 17 -20, 2012.
- 2012 V. Soloiu, A. Covington, J.Lewis, J. Weaver, C. Butts, B. Vlcek, G.J. Molina, *Combustion Analysis of Peanut FAME Blends in an IDI Engine and the Influence of its Primary Fatty Acid Components on the Fuel Characteristics*, Paper 12PFL-0443, SAE International PFL Meeting.
- 2012 M. Rahman, C. Walker, G. Molina, V. Soloiu, Computational Analysis of Laminar Natural Convection in Rectangular Enclosures of Different Aspect Ratios with Different Heating Conditions, Proceedings of the ASME 2012 International Mechanical Engineering Congress and Exposition (IMECE2012), Houston, Texas, USA, November 9 - 15, 2012.
- 2012 V. Soloiu, M. Duggan, H. Ochieng, David Williams, G. Molina, B. Vlcek, Investigation of Low Temperature Combustion Regimes of Biodiesel with n-Butanol Injected in the Intake Manifold of a Compression Ignition Engine, ICEF 92053, ASME Internal Combustion Engine Division's 2012 Fall Technical Conference, Vancouver, BC, Canada, October 2012.
- 2013 G.J. Molina, V. Soloiu, M.Rahman, Studies on surface effects of nano-powder suspensions in cooling-system materials, Proc. of the 36th Annual Meeting of The Adhesion Society, Daytona Beach, FL, March 3-6, 2013.
- 2013 G.J. Molina, V. Soloiu, M.Rahman, On the Surface Effects of Nanofluids in Cooling-system Materials, Materials Research Society Spring Meeting, San Francisco, CA, April 1-5, 2013. MRS Online Proceedings Library, Volume 1558, Cambridge University Press, Oct.7, 2013, mrs13-1558-z09-07, DOI: <http://dx.doi.org/10.1557/opl.2013.1087>
- 2013 G.J. Molina, C. Kajdas, Triboemission Phenomena: Electronic and Photonic Outputs from Surface Modification, and their Use as Novel Probes, Materials Research society Spring Meeting, San Francisco, CA, April 1-5, 2013. MRS Online Proceedings Library, Volume 1544, Cambridge University Press, Oct.7, 2013 DOI: <http://dx.doi.org/10.1557/opl.2013.1082>
- 2013 V. Soloiu, J. Weaver, H.Ochieng, M. Duggan, S. Davoud, S. Harp, G. Molina, B. Vlcek, Cotton seed fame combustion and emissions research in a DI diesel engine, Proceedings of the 2013 Internal Combustion Engine Division Fall Technical Conference ICEF2013, October 13-16, 2013, Dearborn, MI, USA, ICEF2013-19243.
- 2013 V. Soloiu, M. Duggan, J. Weaver, B. Vlcek, S. Harp, G. Molina, RCCI operation with pfi of n-butanol and di of biodiesel compared with DI of binary mixtures of n-butanol and biodiesel, Proceedings of the 2013 Internal Combustion Engine Division Fall Technical Conference ICEF2013, October 13-16, 2013, Dearborn, MI, USA, ICEF2013-19245.
- 2013 M. Rahman, A. Hudson, G. Molina, V. Soloiu, Numerical Analysis of Laminar Natural Convection in Rectangular Enclosures of Different Aspect Ratios with and without Aerosol Nanofluid, Proc. of IMECE2013 ASME International Mechanical Engineering Congress and Exposition, San Diego, CA, Nov. 15-21, 2013, paper 65056.
- 2014 G.J. Molina, FNU Aktaruzzaman, W. Stregles, V. Soloiu, M. Rahman, Tribological Effects of Nanofluids on Aluminum and Copper, Proc. of STLE 2014 Annual Meeting, Orlando, FL, May 18-22, 2014.
- 2014 G. J. Molina, V. Soloiu, M. Rahman, S.M. Shanta, W. Powell, C. Watson, FNU Aktaruzzaman, Wear Effects of Mineral-Oil Lubricant Dilution with Biofuels, Proc. of STLE 2014 Annual Meeting, Orlando, FL, May 18-22, 2014.
- 2014 M. Rahman, G.J.Molina, et al, Computational Analysis of Laminar Forced Convection in Rectangular Enclosures of Different Aspect Ratios, HEFAT2014 10th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, 14 - 16 July 2014, Orlando, FL, paper #1569901871
- 2015 Fnu Aktaruzzaman, G.J. Molina, V. Soloiu, M. Rahman, On adhesion mechanisms and erosions effects of nanoparticle-suspensions (nanofluids) on cooling system materials, Proc. of the Adhesion Society Annual Meeting and Conference, Savannah GA, Feb. 2015.
- 2015 V. Soloiu, G. Molina, et al, Performance of an IDI Engine Fueled with Fatty Acid Methyl Esters Formulated from Cotton Seeds Oils, paper 15PFL-0909, SAE 2015 World Congress & Exhibition, April 21-23, 2015, Detroit, MI, USA.
- 2015 V. Soloiu, G. Molina, et al, Investigation of RCCI Combustion with PFI of n-butanol and DI-ULSD compared with Binary Mixtures in an Omnivorous Diesel Engine, 15PFL-0906, SAE 2015 World Congress & Exh., April 21-23, 2015, Detroit, MI.
- 2015 Fnu Aktaruzzaman, G. J. Molina, V. Soloiu, M. Rahman, Assessment of surface modifications from interactions of alumina-nanofluids on heat-exchanger materials, STLE-Tribology Frontiers Conference 2015, Denver, CO, Oct.2015.
- 2015 Fnu Aktaruzzaman, G. J. Molina, V. Soloiu, M. Rahman, Experimental investigations on the tribological effects of alumina-nanofluids in a through-flow-test-rig, STLE-Tribology Frontiers Conference 2015, Denver, CO, Oct.2015.
- 2016 G. J. Molina, Fnu Aktaruzzaman, M. Rahman, V. Soloiu, Design and development of novel test instruments to assess tribological effects of nanofluids, STLE Annual Meeting and Conference 2016, Las Vegas, NV, May 14-18, 2016.
- 2016 G. J. Molina, Fnu Aktaruzzaman, M. Rahman, V. Soloiu, K. Martin, Tribological Effects of Alumina-Nanofluids on Heat-exchanger Materials: Assessment of Jet-speed and Test-time Factors, Trib. Frontiers Conf., Chicago, IL, Nov.12-15, 2016.
- 2017 G. J. Molina, K. Martin, F. Aktaruzzaman, M. Rahman, V. Soloiu, Wear effects assessment of alumina nanofluids in a through-flow test-rig, STLE Annual Meeting and Conference 2017, Atlanta, GA, May 2017.
- 2018 G. J. Molina, Development and implementation of an early Introduction to Conceptual Design class in Mechanical Engineering curriculum, Cfp 12th Intl Conf on Design Principles & Pract. Res. Network 2018, Barcelona, Spain, March 2018.

- 2018 G. J. Molina, V. Soloiu, E. Onyejizu, Alam, Md, Wear from oil-dilution by biodiesels: a tribometer study on effects of biodiesel methyl-ester components, STLE Annual Meeting and Conference 2018, Minneapolis, MN, May 2018.
- 2018 G. J. Molina, F. Aktaruzzaman, V. Soloiu, M. Rahman, Testing of wear and erosion effects of nanofluids on metals: new instruments and assessment methodologies, STLE Annual Meeting and Conference 2018, Minneapolis, MN, May 2018.
- 2019 G. J. Molina, J.Morrison, C. Carapia, V. Soloiu, A study on viscosity and lubricity effects of N-Butanol and its mixtures in oil, submitted to STLE Annual Meeting and Conference 2019, Nashville, TN, May 2019.
- 2019 G. J. Molina, J.Morrison, E. Onyejizu, V. Soloiu, A study on wear effects from methyl esters in oil mixtures, submitted to STLE Annual Meeting and Conference 2019, Nashville, TN, May 2019.
- 2019 G. J. Molina, F. Aktaruzzaman, V. Soloiu, M. Rahman, A study on wear effects from methyl esters in oil mixtures, submitted to STLE Annual Meeting and Conference 2019, Nashville, TN, May 2019.

(2000-2006)

- 1989 G.J. Molina, *The physical vapour deposition by cathodic arc evaporation*, (in Spanish), Annals of 1989 Metallurgy Symposium, Argentine Society for Metals, Anales de las Jornadas Metalurgicas 1989, May 1989, pp. 293-298.
- 1995 Y.M.Haddad, G.J.Molina, *An Acousto-Ultrasonics Pattern Recognition Approach for the Characterization of the Residual Impact Properties of a Class of Composite Materials*, Proc.ICCM-10, Whistler, BC, Canada, Aug. 1995, Vol.V, pp. 519-526.
- 1995 G.J.Molina, Y.M.Haddad, *An Acousto-Ultrasonics Pattern Recognition Approach for the Characterization of Impact Damage in Materials*, in Proc. ICAF 95, 18th Symposium on Estimation, Enhancement and Control of Aircraft Fatigue Performance, Melbourne, Australia, May 3-5, 1995, pp. 1011-1020.
- 1995 G.J.Molina, Y.M.Haddad, *On the Pattern Recognition Approach to the Nondestructive Evaluation of Residual Impact Properties of Engineering Materials*, Proc. of the First Arg.-USA Bilateral Symp. on Material Sc. and Eng., Nov.1995, Buenos Aires, Argentina, Anales de la Asociacion Quimica Argentina, Vol.84, No.2, 1996, pp. 191-196.
- 1996 Y.M.Haddad and G.J.Molina, *An Acousto-Ultrasonics Pattern Recognition Approach for the Characterization of the Mechanical Stress-State in Engineering Materials*, In Proc. Current Advances in Mech. Design and Production, Sixth Cairo Univ. Intl. MDP Conf., Cairo, Egypt, Jan.2-4, 1996, pp. 91-98.
- 1996 Y.M.Haddad, G.J.Molina, *An Acousto-Ultrasonics Pattern Recognition Approach for the Characterization of the Mechanical Response of Engineering Materials*, in Proc. Energy Week' 96, ASME Int'l Conf. on Comp. Mat. Design and Analysis, Houston, TX, Jan.29-Feb.02, 1996, Book V, K.S.Surana, T.J.Kozik (eds.), pp. 63-67, invited paper.
- 1997 Y.M.Haddad, G.J.Molina, *On the Identification of Material Response States by Acousto-Ultrasonics Pattern Recognition Classifiers*, Proc. PACAM V, San Juan, Puerto Rico, Jan. 2-4, 1997, pp. 186-189.
- 1998 Y.M.Haddad, G.J.Molina, *On the Design of Acousto-Ultrasonics - Pattern Recognition Classifiers for the Identification of Material Response States*, in Proc. ETCE '98, Symp. on Comp. Mat. Design and Analysis, Houston, TX, Feb. 1998.
- 1998 M.J.Furey, A.L.Ritter, B.Vick, G.J.Molina, C.Kajdas, *Triboemission and Surface Temperatures Generated in a Ball-in-Cone Tribocontact*, Proc. of the 5th Intl.Trib. Conf., Australia, Dec.6-9,1998, The Institution of Engineers, 257-262.
- 2000 C.Kajdas, M.J.Furey, A.L.Ritter, G.J.Molina, *Triboemission as a Basic Part of the Boundary Friction Regime*, Proc. Of the 12th Intl. Colloquium Trib., Technische Akademie Esslingen, Germany, Jan.11-13, 2000, Vol.III, pp. 2075-2096.
- 2000 G.J.Molina, M.J.Furey, A.L.Ritter, B.Vick, D.Mazilu, C.Kajdas, *Triboemission and Tribochemistry*, Proc. American Physical Society Meeting, March 20-24, 2000, Minneapolis, MN, Bulletin of the Am. Phys. Soc, Vol.45, No1, p. 484.
- 2000 G.J.Molina, M.J.Furey, A.L.Ritter, C.Kajdas, *Triboemission from Alumina, Single Crystal Sapphire, and Aluminum*, Proceedings 9th Nordic Symposium on Tribology NORDTRIB 2000, June 11-14, 2000, Porvoo, Finland, CD Rom.
- 2000 R.Kempinski, P.Malosse, M.J.Furey, C.Kajdas, G.J.Molina, B.S.Tripathy, *Effect of Triboemitted Particles on the Tribological Behavior of Selected Monomers*, Proc. NORDTRIB 2000, June 11-14, 2000, Porvoo, Finland, CD Rom.
- 2001 G.J. Molina, M.J. Furey, B. Vick, A.L. Ritter, C. Kajdas, *Triboemission from the sliding contact of alumina systems*, Proc. of the Second World Tribology Congress, Vienna, Austria, Sept. 3-7, 2001, CD Rom.
- 2001 G.J. Molina, M.J. Furey, A.L. Ritter, C. Kajdas, *Importance of Low-Energy Tribo-electrons for the Initiation of Tribochemical Reactions*, Proc. of the Third Intl Symp. on Tribochemistry, September 10-12, 2001, Cracow, Poland.
- 2002 G.J. Molina, M.J. Furey, A.L. Ritter, C. Kajdas, *Measurement of Triboemitted Charged Particles from Ceramics and their General Significance in Tribology*, Proc. of the 57th Meeting of STLE, May 19-23, 2002, Houston, TX, CD Rom.
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Languages: Fluent in English, Spanish, French and Italian, working understanding of Portuguese.

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