

Curriculum Vitae

NEJAT OLGAC

Professor, Department of Mechanical Engineering
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Date of Birth: 8/28/1950

Marital status: Married with two children

Education:

- 1976 Dr. Eng. Sci. - Columbia University,
Mechanical Engineering GPA: 4.0 /4.0 Cum Laude.
Thesis : "Stochastic Optimal Control Problems Related to Artificial River
Aeration Systems" ,
Advisor : Richard W. Longman.
- 1972 M.S. -B.S. Technical University of Istanbul, Turkey,
Mechanical Engineering GPA: 18.3/20, Summa Cum Laude.

Professional Experience:

- 9/95-pres Professor *, Department. of Mechanical Engineering, Univ. of Connecticut, Storrs.
9/02-1//03 Visiting Professor, Harvard University
9/95-8/96 SEW-Eurodrive Guest Professor, Technical University of Munich, Germany.
9/88-8/95 Associate Professor *, Department. of Mechanical Engineering, Univ. of Connecticut, Storrs.
4/89-6/89 DAAD (German Academic Exchange Assoc.) Visiting Scholar, Technical Univ. of Munich,
Germany.
9/88-4/89 Invited Professor, INRIA, French Research Institute on Computer Science and Automation
Sophia Antipolis, France..
9/81-9/88 Assistant Prof. *, Department of Mechanical Engineering University of Connecticut, Storrs.
9/78-8/81 Member of the Board of Directors and Asst. Gn. Mgr., Elektroakustik, S.A., subsidiary of
Transturk Holding Group, Istanbul, Turkey. Manufacturer of audio-visual equipment under
German Telefunken License. Die design, and machine tool controls.
1977-78 Industrial Projects Manager. Transturk Group, Istanbul, Turkey. Responsible for new
investment projects.
1976-77 R&D Engineer, Arcelik S.A., Istanbul, Turkey. Household appliances manufacturer.
Responsibilities: Mechanical design of refrigerators, washing machines, vacuum cleaners.
An extended design project for the local production of hermetic compressors.
1973-76 New York Institute of Technology, Adjunct Assistant Professor. Courses taught: Heat
transfer, engineering materials, engineering graphics, applied thermodynamics, engineering
mechanics.
1973 Uniroyal Inc., Chicopee, MA. Summer aid, technical. Tire manufacturing problems.
1970 Intern. DeKlop Shipbuilding and Repairing Co., Sliedrecht, Holland. General shipyard
manufacturing operations.

1969 Maintenance and Rebuilding Service, Turkish Post Office, Ankara, Turkey. Trainee. On internal combustion engines rebuilding.

* Courses taught: Linear Automatic Control Systems, Introduction to Engineering, Dynamics of Mechanical Systems, Elements of Machine Design, Senior Design Project, Design and Control in Robotics, Advanced Control Systems Design, Linear Systems Theory.

Vocational Objective:

Time delayed systems, dynamic systems and control, active and passive vibration control, nonlinear dynamics, digital and analog control applications for manufacturing systems, analysis and synthesis of automatic control systems, applications to robotics problems, machine design and automation, micro-nano scale manipulation tasks in biomedical applications.

Industrial consulting on general engineering projects.

Honors and Awards:

2008 **Research Excellence Award, Mechanical Engineering, UCONN**
2007 **Best Presentation of Session**, at ACC07, ThB03 Sensing and Measurement Applications (Ali F. Ergenc's work on monitoring micro-pipette motion)
2006 **Best Presentation of Session**, at ACC06, ThA10 Linear Time Delay Systems (R. Sipahi's work on the new stability analysis procedure for time delayed systems)
2006 **Best Presentation of Session**, at ACC06, ThA09 Stability and Optimal Control (H. Fazelinia and R. Sipahi's work on "Building Block" concept)
2004 **Best Presentation of Session**, at ACC04, FrP08-Time Delay Systems (R. Sipahi's work)
2002 **Best Student Paper Award, ASME-DSCD**, at IMECE 2002 (on Mr. R. Sipahi's work).
2002 Marquis Who's Who in America
1999 Mechanical Engineering Outstanding Faculty, UCONN
1999 Olin Faculty Fellow, UCONN
1999 Olin Fellowship, UCONN
1997 ASME Fellow
1997 Who is Who in Turkey, Profesyonel Ltd., 3rd Ed., 1997
1995 SEW-Eurodrive Guest Professor, Technical University of Munich, Germany.
1994 CNN Science and Technology Week appearance / DR Active Vibration Absorber
1993 NASA / Connecticut Space Grant Faculty Fellowship.
1993 Provost's Economic Development Research Award
1989 DAAD (German Academic Exchange Assoc.) Visiting Scholar.
1988 Professor Invite, INRIA/French Foreign Relations Ministry.
1972-74 Graduate Research Assistantship, Columbia University.
1974-76 U.S. Department of the Interior fellowship.
1972 Doctoral Fellowship, Ford Foundation.
1967-72 Scholarship, National Science Association, Turkey.
1972 First, among a graduating class (Technical University of Istanbul) with 18.3/20 GPA (Summa Cum Laude).
1961-67 Honor roll throughout the highschool education, Pendik Highschool, Turkey, first in graduating class 1967.

Language skills :

Mother tongue : Turkish
Comfortably fluent (reading, writing and speaking) : French, German, Italian

Consulting:

Transturk Teknik S.A., local manufacturing of electric hoists in Turkey (1977).
Plastas S.A., Istanbul, Turkey, a plastic parts manufacturer, automation and performance improvements of plastic molding operations (1978).
Torrington Co., Rogers Corp., G.B.R., Ltd. and Avco-Lycoming through design projects (1982, 1983).
Harris Corporation, design of an offset press adjustment mechanisms (1983).
Hamilton Standard, Rogers Corporation on design and control projects (1982, 1984).
Stanley Tools Co., on an automatic printing project (1983, 1984).
Howe Furniture Co., on automated silver brazing operation (1984).
Pallflex Products Corp., Putnam, CT, computerized quality testing of filters (1984).
Pratt and Whitney Aircraft, East Hartford, CT, sensory based automated manufacturing (1986-88).
U.N. Development Programs (1986-88), "Manufacturing Automation".
Editorial consultations on a book titled "Robot Control, the Task Function Approach" by C. Samson, M. LeBorgne and B. Espiau, Clarendon Press (1991).
Upright Inc. lift manufacturer / Day-Berry and Howard Law Firm (1992-93).
Czech Technical University / research cooperation program development (1992-93).
Brunswick golf club shaft manufacturer (1994).
Voith -Sulzer Inc. Heidenheim, Germany, paper making machines (1996).
Mannesmann-Demag, Dusseldorf, Germany, continuous casting machines, (1996).
Windfall Products, St. Mary's, PA., (1997).
Philips Automotive, (1997).
Cooper Instruments, (1997).
Robinson and Cole (1997).
Day, Berry and Howard (1992-2000, several projects).
Gerber Technologies (1998),
Howmet (1999),
Rogers Corp. (1999-2003)
Sikorsky Aircraft (2002-2003)
AMSL (2004-2005)
Scott and Scott , Ideaz Inc. (2003-2005)

Invited Lectures (since 2003 only)

Koc University (Istanbul, TR)
Czech Technical University (Prague)
Southern Methodist University
UMass- Amherst
Boston University (CISE Group)
INRIA Research Center, Sophia Antipolis, France
Universite Compiegne de Technologie (France)
University of Maryland

Ecole Supérieur d'Electricité, Give-sur-Yvette, France
NIST (Machine Tools Metrology and Research Group), Gaithersburg
Aachen Technical University (WZL) Machine Tools Research Center
Universite Libre de Brussel
UCONN Mathematics Department

Editorial responsibilities:

- Member of the Editorial Board, **Int. J. of Mechatronics and Manufacturing Systems** (2006-present).
- Member of the Editorial Board, **J. of Vibration and Control**, (2005-present)
- Associate Editor, **ASME J. of Dynamic Systems, Measurement and Control** , 1997-2004,
- Guest Editor, **ASME J. of Dynamic Systems, Measurement and Control**, special issue on **Time Delayed Systems** , Vol. 125, No. 2, June 2003.
- Section editor, "**Vibration Control**" within the **Mechanical Systems Design Handbook**, 2001, **CRC Press**, ISBN 0-8493-8596-2.
- Editor, ASME Technical *Proceedings of the ASME, Dynamic Systems and Control Division*, DSC-Vol. 67, 1999.
- Co-editor, *Symposium on Mechatronics*, ASME DSC. Vol 50, PED Vol 53, 1993
- Co-editor, *Advances in Instrumentation*, ASME DSC. Vol 30, 1991.

Journal Articles :

1. "Alternative Choices in Measurement Systems for Artificial River Aeration," (N. Olgac, R. W. Longman, C. A. Cooper). *Water Resources Research*, Vol. 16, No. 3, pp. 583-591, June 1980. Also presented at the 6th Annual Systems Modelling and Simulations Conference, Pittsburgh, PA, April 24-25, 1975.
2. "Optimal Allocation of Measurement and Control Resources with Application to River Pollution," (N. Olgac, C. A. Cooper, R. W. Longman). *IEEE Transactions on Systems, Man and Cybernetics*, Vol. SMC-6 (1976), pp. 377-384.
3. "Optimal Control of Artificial Aeration in River Networks," (N. Olgac, C. A. Cooper, R. W. Longman). *ISA Transaction*, Vol. 15 (1976), No. 4. Also presented in the ISA Conference in Milwaukee, WI, October 6-9, 1975. Also appeared in *Advances in Instrumentation*, Vol. 30, Part 3 (1976).
4. "Improved Numerical Computation on Uniform Beam Characteristic Values and Characteristic Functions," (J. R. Gartner, N. Olgac). *Journal of Sound and Vibration*, October 1982, 84(4), pp. 481-489.
5. "Stochastic Artificial Aeration Control for Regional Drainage Basins," (N. Olgac, R. W. Longman, C. A. Cooper). *ASME Journal of Dynamic Systems, Measurement and Control*. Vol. 104, pp. 337-342, December 1982. Also presented at the ACC 82 Conference in June 1982 (Arlington, VA). Proceedings pp. 235-237.
6. "A Study on the Computer Modelling of the Lathe Cutting Mechanism," (N. Olgac, M. Devin), *International Journal of Modelling and Simulation* Vol. 4, No. 4 (1984), pp. 149-152. Also presented

at the IASTED International Symposium on Simulation and Modelling, November 9-11, 1983, Orlando, Florida.

7. "The Impact of Costly Observations and Observation Delay in Stochastic Optimal Control Problems," (N. Olgac, C. A. Cooper, R. W. Longman). International Journal of Control, Vol. 41, No. 3, pp. 769-785, 1985.
8. "Toward the Utilization of Computer Intelligence in Metal Machining,"(N. Olgac). Brazilian J. of Mechanical Engineers, Vol. VIII, No.3, 1986. Also presented at the VII Brazilian Congress of Engineering Mechanics, San Jose dos Campos, Brazil, December, 1985.
9. "Time Series Applications for a Predictive Model of the General Turning Mechanism." (N. Olgac, G. Zhao) Transactions of Society of Computer Simulation (SCS) Fall 1986 . Vol. 2 No. 4, pp. 83-105.
10. "A Relative Stability Study on the Dynamics of the Turning Mechanisms" (N. Olgac, G. Zhao). ASME Vol. "Sensing, Models, and Control for Manufacturing Processes" 1986. Improved version published in the ASME J. of Dynamic Systems, Measurement and Control, Vol 109, pp. 164-170, June 1987.
11. "A Simplified Identification Method for Autoregressive Models of Cutting Force Dynamics" (N. Olgac, J. Guttermuth). ASME J. of Engineering for Industry, Vol. 110, No. 3, pp. 288-296. Aug. 1988.
12. "Sliding Mode Control of Remotely Operated Vehicles for Horizontal Plane Motions", (N. Olgac, B.E. Platin, J. Chang), IEE Control Theory and Applications Sept. 1991, D-Vol. 138, no. 5, pp. 469-473. Also presented 1990 ASME-Winter Annual Meeting Dallas, TX. ASME paper # 90-WA/DSC-6.
13. "Sliding Mode Control with Perturbation Estimation (SMCPE) a New Approach", (H. Elmali, N, Olgac) International J. of Control, Vol.56, No.4, 923-941, 1992.
14. "Robust Output Tracking Control of Nonlinear MIMO Systems via Sliding Mode Technique" (H. Elmali, N. Olgac) Automatica, Vol. 28, No. 1, 1992, pp. 145-151. A version presented in the ACC '91 in Boston, June 1991.
15. "A Novel Active Vibration Absorption Technique: Delayed Resonator", (N. Olgac, B. Holm-Hansen) , J. of Sound and Vibration, Vol. 176, No. 1, pp. 93-104, Sept. 1994.
16. "Efficient Eigenvalue Assignments for General Linear MIMO Control Systems ", (M. Valasek, N. Olgac), Automatica, Vol. 31, No. 11, pp. 1605-1617, 1995.
17. "Design Considerations for Delayed Resonator Vibration Absorber", (N. Olgac, B. Holm-Hansen) ASCE J. of Engineering Mechanics, Vol. 121, No.1, pp. 80-89, Jan. 1995.
18. "Efficient Pole Placement Technique for Linear Time-Variant SISO Systems" (M. Valasek, N. Olgac) IEE, Tran. On Control Theory and Applications, Vol. 142, No. 5, pp. 451-457, September 1995.

19. "Sliding Mode Control with Saturation and Backlash Laws", (N. Olgac, P. Irigaravarapu) International J. of Robotics and Automation, Vol. 10, No. 2, pp. 49-55, 1995.
20. Aktive Schwingungsdaemfung Mittels Delayed Resonator, in German, (D. Filipovic, D. Schroeder, N. Olgac), VDI (Verein Deutsche Ingenieure), Nr. 1220, pp. 593-605, Sept. 1995.
21. "Tunable Active Vibration Absorber: the Delayed Resonator", (N. Olgac, B. Holm-Hansen), ASME J. of Dynamic Systems, Measurement and Control, Vol. 117, No. 4, pp. 513-519, Dec. 1995.
22. "Introduction to Dual Frequency Fixed Delayed Resonator (DFFDR)", (N. Olgac, H. Elmali, S. Vijayan), J. of Sound and Vibration, Vol. 189, No. 3, pp. 355-367, Jan. 1996
23. "Satellite Attitude Control via Sliding Mode Control with Perturbation Estimation" (H. Elmali, N. Olgac) IEE Control Theory and Applications, Vol. 143, No. 3, pp. 276-282, May. 1996.
24. "Implementation of Sliding Mode Control with Perturbation Estimation (SMCPE)", (H. Elmali, N. Olgac) IEEE, Tran. on Control Systems Technology, Vol. 4, No. 1, pp. 79-85, Jan. 1996.
25. "A New Method for Active Vibration Absorption in Boring" (N. Olgac, B. Holm-Hansen) for CIRP/ Manufacturing Systems, Vol. 25, No. 2, pp. 139-143, 1996.
26. "Active Vibration Absorption Using Delayed Resonator with Relative Position Measurement", (N. Olgac, M. Hosek), ASME J. of Vibration and Acoustics, Vol. 119, No. 1, pp. 131-136, 1997.
27. "Frequency Shaped Sliding Modes: Analysis and Experiments", (J. Moura, R.Gosh-Roy, N. Olgac), IEEE, Tran. On Control Systems Technology, Vol. 5, No. 4, pp. 394-401, July 1997.
28. "Sliding Mode Control with Perturbation Estimation (SMCPE) and Frequency Shaped Sliding Surface", (J. Moura, H. Elmali, N. Olgac), ASME J. of Dynamic Systems, Measurement and Control, Vol. 119, no.3, pp. 584-588, Sept 1997.
29. "The Tunable Torsional Vibration Absorber: Centrifugal Delayed Resonator", (M. Hosek, H. Elmali, N. Olgac), J. of Sound and Vibration, Vol. 205, no. 2, pp. 151-165, 1997.
30. "Implementation of Sliding Mode Control Using the Concept of Perturbation", (R. Ghosh-Roy, J. Moura and N. Olgac), J. of Mechatronics, Vol. 7, no. 8, pp. 723-736, 1997.
31. "Sliding Mode Control with Sliding Perturbation Observer", (J. Moura, H. Elmali, N. Olgac), ASME J. of Dynamic Systems, Measurement and Control, Vol. 11, no. 4, pp. 657-665, Dec. 1997.
32. "Active Vibration Control of Distributed Systems Using Delayed Resonator with Acceleration Feedback", (N. Olgac, H. Elmali, M. Renzulli, M. Hosek), ASME J. of Dynamic Systems, Measurement and Control, Vol. 119, no. 3, pp. 380-389, Sept. 1997.
33. "Robust Lyapunov Control with Perturbation Estimation", (J. Moura, N. Olgac), IEE. Tran. On Control Theory and Applications, Vol. 145, no. 3, 307-315, 1998.
34. "Time-Optimal/Sliding Mode Control Implementation for Robust Tracking of Uncertain Flexible Structures", (N. Jalili, N. Olgac), J. of Mechatronics, Vol. 8, no. 2, pp. 121-142, 1998.

35. "A New Perspective and Analysis for Machine Tool Chatter", (N. Olgac, M. Hosek), *Int. J. of Machine Tools and Manufacture*, Vol. 38, no. 7, 783-798, 1998.
36. "Torsional Delayed Resonator with Speed Feedback", (D. Filipovic, N. Olgac), *IEEE/ASME Tran. on Mechatronics*, Vol. 3, no. 1, pp. 67-72, 1998.
37. "Modal Analysis of Flexible Beams with Delayed Resonator Vibration Absorber, Theory and Experiments", (N. Olgac, N. Jalili), *J. of Sound and Vibration*, Vol. 218(2), 307-331, 1998.
38. "Optimum Delayed Feedback Vibration Absorber for Flexible Beams". (N. Jalili, N. Olgac), *Smart Structures*, NATO Science Series, Kluwer Academic Publishers, Vol. 65, pp. 237-246, 1999.
39. "New Concept of Active Multiple Frequency Vibration Suppression Technique", (M. Valasek, N. Olgac), *Smart Structures*, NATO Science Series, Kluwer Academic Publishers, Vol. 65, pp. 373-382, 1999.
40. "Pole Placement for Linear Time-Varying Non-Lexicographically-Fixed MIMO Systems", (M. Valasek, N. Olgac), *Automatica*, Vol. 35, No. 1, 101-108, 1999.
41. "Robust Control of the Delayed Resonator Vibration Absorber", (M. Renzulli, R. Ghosh-Roy, N. Olgac), *IEEE, Tran. On Control Systems Technology*, Vol. 7, No. 6, 683-691, 1999.
42. "Multiple Delayed Resonator Vibration Absorber for MDOF Mechanical Structures", (N. Jalili, N. Olgac), *J. of Sound and Vibration*, Vol. 223, No. 4, 567-585, 1999.
43. "Torsional Vibration Control of MDOF Systems Using the Centrifugal Delayed Resonator", (M. Hosek, N. Olgac, H. Elmali), *J. of Vibration and Control*, Vol. 5, No. 2, 299-322, 1999.
44. "Analysis and Design of Delayed Resonator in Discrete Domain", (N. Olgac, H. Elmali), *J. of Vibration and Control*, Vol. 6, No. 2, 273-289, 2000.
45. "A Sensitivity Study on Optimum Delayed Feedback Vibration Absorber", (N. Jalili, N. Olgac), *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 122, No. 2, 314-321, 2000.
46. "Experimental Comparison of Delayed Resonator and PD Controlled Vibration Absorbers Using Electromagnetic Actuators", (H. Elmali, M. Renzulli, N. Olgac), *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 122, No.3, 514-520, 2000.
47. "Identification and Re-tuning of Optimum Delayed Feedback Vibration Absorber", (N. Jalili, N. Olgac), *AIAA J. of Guidance, Control and Dynamics*, Vol. 23, No. 6, 961-970, 2000.
48. "Delayed Resonator with Speed Feedback, Design and Performance Analysis", (D. Filipovic, N. Olgac), *Mechatronics*, Vol. 12, No. 3, 393-413, 2002.
49. "Tunable Multiple Frequency Absorber Using Delayed Position Feedback", (N. Olgac, C. Huang), *J. of Vibration and Control*, Vol. 8, 451-465, 2002.
50. "A Single Step Automatic Tuning Algorithm for the Delayed Resonator Vibration Absorber", (M. Hosek, N. Olgac), *IEEE/ASME Tran. on Mechatronics*, Vol. 7, No. 2, pp. 245-255, 2002.

51. "An Exact Method for the Stability Analysis of Time Delayed LTI Systems", (N. Olgac, R. Sipahi), IEEE Tran. on Automatic Control, Vol. 47, No. 5, 793-797, 2002.
52. "Active Vibration Suppression with Time Delayed Feedback", (R. Sipahi, N. Olgac), ASME J. of Vibration and Acoustics, Vol. 125, No. 3, 284-288, July 2003.
53. "Degenerate Cases in Using the Direct Method", (R. Sipahi, N. Olgac), Special Issue of ASME J. of Dynamic Systems, Measurement and Control on Time Delayed Systems, Vol. 125, No. 2, 194-201, June 2003.
54. "Micro-dynamics of the Piezo-driven Pipettes in ICSI", (K. Ediz, N. Olgac), IEEE Tran. On Biomedical Engineering, Vol. 51, No. 07, 1262-1269, July 2004.
55. "A Practical Method for Analyzing the Stability of Neutral Type LTI Time Delayed Systems", (N. Olgac, R. Sipahi), Automatica, Vol. 40, p. 847-853, May 2004.
56. "Effect of Mercury Column on the Micro-dynamics of the Piezo-driven Pipettes", (K. Ediz, N. Olgac), ASME J. of Biomechanical Engineering, Vol. 127, No. 3, 531-535, 2005.
57. "Delay Scheduling: A New Concept for Stabilization in Multiple Delay Systems", (N. Olgac, A. Ergenc, R. Sipahi), J. of Vibration and Control, Vol. 11, 9, pp. 1159-1172, 2005.
58. "The Cluster Treatment of Characteristic Roots and the Neutral Type Time-Delayed Systems", (N. Olgac, R. Sipahi), ASME J. of Dynamic Systems, Measurement and Control, Vol. 127, 88-97, 2005.
59. "Complete Stability Robustness of Third Order LTI, Multiple Time Delay Systems", (R. Sipahi, N. Olgac), Automatica, Vol. 41, pp. 1413-1422, 2005.
60. "A Unique Methodology for Chatter Stability Mapping for Simultaneous Machining", (N. Olgac, R. Sipahi), ASME J. of Manufacturing Science and Engineering, 127(4), pp. 791-800, 2005.
61. "A Unique Methodology for the Stability Robustness of Multiple time Delay Systems", (R. Sipahi, N. Olgac), Systems and Control Letters, Vol. 55, pp. 819-825, 2006.
62. "Stability Robustness of Retarded LTI Systems with Single Delay and Exhaustive Determinations of Their Imaginary Spectra", (R. Sipahi, N. Olgac), SIAM, J. Control and Optimization, 45(5), pp. 1680-1696, 2006.
63. "Complete Stability Analysis of Neutral Type First Order - Two Time Delay Systems with Cross-Talking Delays, (R. Sipahi, N. Olgac), SIAM, J. of Control and Optimization, 45(3), pp. 957-971, 2006.
64. "A New Optical Sensor for Monitoring the Micro-pipette Motion", (Ali F. Ergenc, N. Olgac), IEEE, J. of Information Technology in Biomedicine, Vol. 10, No. 4, 775-781. 2006.
65. "An improved Procedure for a Critical Step of the Direct Method", (N. Olgac, R. Sipahi), IEEE, T. on Automatic Control, (51) 7, pp. 1164-1166, 2006.

66. "Extended Kronecker Summation for Determining the Kernel and Offspring of LTI Systems with Multiple Delays", (A. Ergenc, N. Olgac, H. Fazelinia), SIAM, J. of Control and Optimization, Vol. 46(1), pp. 143-155, 2007.
67. "Dynamics and Stability of Multi-flute Variable-Pitch Milling", (N. Olgac, R. Sipahi), J. of Vibration and Control, 13(7), pp. 1031-1043, 2007.
68. "Delay Scheduling – an Unconventional Use of Time Delay as a Stabilizing Tool in Trajectory Tracking", (N. Olgac, R. Sipahi, A. Ergenc), Mechatronics, Vol. 17, pp. 199-206, 2007.
69. "Stability Analysis of Multiple Time Delayed Systems Using 'Building Block' Concept", (H. Fazelinia, R. Sipahi, N. Olgac), IEEE, T. on Automatic Control, vol. 52, no. 5, pp. 799-810, 2007.
70. "New technology for Cellular Piercing: Rotationally Oscillating Micro-injector, Description and Validation Tests", (A. Ergenc, N. Olgac), J. Biomedical Microdevices, Vol. 9, no. 6, pp. 885-891, 2007.
71. "Kernel and Offspring Concepts for the Stability Robustness of Multiple Time Delay Systems (MTDS)", (R. Sipahi, N. Olgac), ASME, J. of Dynamic Systems, Measurement and Control, Vol. 129 (3), pp. 245-251, 2007.
72. "A New Perspective in the Stability Assessment of Neutral Systems with Multiple and Cross-Talking Delays", (N. Olgac, T. Vyhldal, R. Sipahi), SIAM, J. of Control and Optimization, Vol. 47, no.1, pp 327-344, 2008.
73. "New Perspective in Process Optimization of Variable Pitch Milling", (H. Fazelinia, N. Olgac), Int. J. of Materials and Products Technology, in print, 2008.
74. "Generalization of Cluster Treatment of Characteristic Roots for Robust Stability of Multiple Time Delayed Systems", (R. Sipahi, H. Fazelinia, N. Olgac), Int. J. of Robust and Nonlinear Control, (DOI: 10.1002/rnc.1290), 2008. Volume 18, Issue 14, 2008, pp: 1430-1449.
75. "An Actively Controlled Harmonic Force Generator", (O. Mikus, N. Olgac, R. Sipahi), Control Engineering Practice, 2008. doi:10.1016/j.conengprac.2008.07.002 -- <http://dx.doi.org/10.1016/j.conengprac.2008.07.002>
76. "Rotational Oscillating Drill (Ros-Drill©) for Mouse ICSI Without Using Mercury", (A. Ergenc, M-W Li, M. Toner, J.D. Biggers, K. Lloyd, N. Olgac), in print MRD-07-0286(20919), Molecular Reproduction and Development, 2008.
77. "Sign Inverting Control Logic for Time Delayed Systems, with Experiments", (H. Fazelinia, A. Ergenc, N. Olgac), Int. J. of Mechatronics and Manufacturing Systems, Vol. 1, No.1, pp. 68-82, 2008.
78. "Trajectory Tracking of Cart-Pendulum Dynamics Using Multiple Time-Delayed Feedback" (M. E. Cavdaroglu, N. Olgac), IET Control Theory Appl., Vol.2, No.6, pp.458-466, 2008.
79. "Stability Analysis of LTI Systems with Three Independent Delays – A Computationally Efficient Procedure", (R. Sipahi, H. Fazelinia, N. Olgac), in review for ASME-JDSMC, 2008.

80. "Complete Stability Depiction of First Order Neutral Type Multiple Time Delay Systems, (R. Sipahi, N. Olgac, D. Breda), in review, IMA, 2008.
81. "Full State Feedback Control Design with Delay Scheduling for Cart-Pendulum Dynamics", (E. M. Cavdaroglu, N. Olgac), Control Engineering Practice, in review, 2008.
82. "Robust Control for Multiple Time Delay MIMO Systems with Delay Decouplability Concept", (K. Turkoglu, N. Olgac), Springer, TDS Series, in review. 2008.
83. "Swarm Coordination Under Conflict", (D.A.Sierra, P. McCullough, E. Adams, N. Olgac), in review, Int. J. of Control, 2008.

Reports, Monographs

"Improvements on the Cluster Treatment of Characteristic Roots and Case Studies", (R. Sipahi, N. Olgac), in "**Advances in Time-Delayed Systems**", Springer Verlag, 2003, pp. 61-73, 2004, ISBN 3-540-208909.

"Active Vibration Absorption and Delayed Feedback Tuning" (N. Olgac, M. Hosek); in the **Mechanical Systems Design Handbook**, pp. 239-280, 2001, **CRC Press**, ISBN 0-8493-8596-2.

"Stochastic Optimal Control Problems Related to Artificial River Aeration Systems," (N. Olgac). Doctoral Thesis, Columbia University, May 1976 University Microfilms, Nr. 76-26399.

"Machine Tool Vibrations", final report to SME (Society of Manufacturing Engineers) of Grant #582-344, 1983.

"Automation in Manufacturing," (N. Olgac). Workshop Guidebook, UConn, Continuing Education Department, August 1984-86.

"Identification and Feedback Control of Machine Tool Vibrations", Interim Report of Research Program to NSF, 1985. Grant No: MEA8300236.

"Optimality in Manufacturing", (N. Olgac, P. Luh) Workshop Guidebook, UConn, Continuing Education Dept., 1985-86.

"Identification and Feedback Control of Machine Tool Vibrations" Final Report to NSF, 1987. Grant No. MEA 830023.

"Sensory Control Operations in Manufacturing" Internal Report at Pratt and Whitney, 1987.

"Tool Monitoring Systems in Machining Operations" Internal Report at Pratt and Whitney, 1987.

Conference Papers:

1. "Time Lagged Stochastic Control Problems with Observation Cost," (N. Olgac, R. W. Longman, C. A. Cooper). JACC (Joint Automatic Control Conference) July 1976, Indiana.

2. "Stochastic Optimal Pollution Control in River Networks Using Artificial In-Stream Aeration," (N. Olgac, R. W. Longman, C. A. Cooper). Presented in the 2nd Kingston Conference on Differential Games and Control Theory, Kingston, RI, June 7-10, 1976.
3. "Free and Forced Vibration Solution of Generalized Spindle Systems by Variational Methods," (J. R. Gartner, N. Olgac). Presented at the 9th CANSAM (Canadian Congress of Applied Mechanics) in Saskatchewan, Canada, pp. 145-146, May 30 - June 3, 1983.
4. "On the Design and Analysis of a Hydraulic Assisted 3-D Tactile Sensor," (N. Olgac). Presented at the 2nd IASTED (International Association for Science and Technological Development) Symposium on Robotics and Automation, pp. 243-246, Lugano, Switzerland, June 22- 24, 1983.
5. "Interfacing Robot Motion Controllers with a Computer Simulation," (N. Olgac). Presented at the Applied Modelling and Simulation Conference, June 29-31, 1984, Nice, France. Proceedings pp. 147-150.
6. "A Development on Tactile Sensory Fingers for Robots," (N. Olgac). 1st International Symposium on Design and Synthesis, July 11-13, 1984, Tokyo, Japan. The proceedings of the conference, pp. 663-667.
7. "A Computerized Inspection Method with Laser Interferometry," (N. Olgac). ASME Paper No. 85-DE-4. ASME Design Engineering Conference, March 11-13, 1985.
8. "On the Cutting Speed Control of Machine Tools," (N. Olgac). Presented at the 10th CANSAM (Canadian Applied Mechanics Conference), pp. E13-14, London, Ont., June 2-7, 1985...
9. "On the Performance Testing of Filter Breathers," (N. Olgac). Presented at the AMSE -Modelling and Simulation Conference '85, pp. 95-108, Storrs, CT, July 1-3, 1985.
10. "Computerized Testing of Piezoelectric Characteristics of Polymer Films," (N. Olgac). Measurement and Control Conference, July 23-25, 1985, Istanbul, Turkey.
11. "On the forecasting of Lathe Cutting Dynamics," (N. Olgac, G. Zhao). Presented at the Soc. of Photo Instruments Engineers Conference on Automatic Inspections and Measurement, San Diego, August 20-21, 1985, Proceedings of the Conference, pp. 167-174.
12. "The Experimental Classifications of the Linear Models of the Lathe Cutting Mechanisms," (N. Olgac, J. Guttermuth, G. Zhao) IFAC International Federation of Automatic Control Symposium, Turkey 1986.
13. "Optimal Trajectory Control of a Robotic Vehicle," (N. Olgac, M. Wood) Symposium on Advances in Intelligent Robots, Cambridge, MA, 1986.
14. "Frequency Response Characteristic of a Robot Drive Mechanism", (N. Olgac) 7th World Congress on Theory of Machines and Mechanisms, Spain, Sept., 1987.
15. "Optimal Oscillations with Minimum Energy for Small Amplitude Motions of PUMA Arm", (N. Olgac, S. Zhou) 10th Applied Mechanisms Conference, New Orleans, Dec., 1987.

16. "An Optimal Energy Problem for Oscillatory Motions of Robotic Manipulators", Identification, Modelling and Simulation Conference, Paris, France, 1987.
17. "A Concept Paper on the Prediction of Cutting Dynamics via Multi-Dimensional Autoregressive Techniques" (N. Olgac, J. Guttermuth). COBEM '87, Brazilian Mechanical Engineering Conference. Dec. 1987.
18. "Minimum Energy paths for Optimum Oscillatory Movements of PUMA Arm" (N. Olgac, S. Zhou) Int. J. of Robotic Systems , Vol. 5, N.4, pp. 389-408, Aug., 1988.
19. "On the Dynamics of Metal Cutting with Nonlinearities and Time Delays" (N. Olgac, J. Chang) Int. J. of Modelling and Simulation, 1990, Vol. 11, No. 2, pp 44-50. Also presented at the Int. Congress in Mech. Eng. '88, Brisbane, Australia.
20. "A Study on the Stability of the Closed Loop Control Systems with Delayed Observations" (N. Olgac, Y. Wang) AIMETA Applied Mechanics Conference, Bari, Italy Oct. 4-7, 1988.
21. "On an Optimality Concept for Small Oscillations of Puma Arm" (N. Olgac, S. Zhou) Symposium on Robot Control (SYROCO) October 5-7, 1988 Karlsruhe, Germany.
22. "On the Stability of Linear Systems with Unrelated Time Delays" (N. Olgac, Y. Wang) ASME, International Computers in Engineering Conference, July 30- Aug. 2, 1989, Anaheim.
23. "3-D Reconstruction of Object Configurations by Hybrid Projection Analysis Using a Single Camera Image" (N. Olgac, Z. Gan, B. Platin), 1st National Applied Mechanics and Robotics Conference, Cincinnati, OH, Nov. 5-8, 1989.
24. "An Application of Variable Structure Systems with Sliding Mode Control to a Remotely Operated Vehicle", (B. Platin, J. Chang, N. Olgac), 11th IFAC World Congress, Tallinn, USSR , Aug. 1990.
25. "3-D Object Configuration Sensor Utilizing Single Camera Images", (B.E. Platin, Z. Gan, N. Olgac). 1990 ASME-Winter Annual Meeting Dallas, TX. ASME paper # 90-WA/DSC-22
26. "A Novel Robust Control Strategy for Nonlinear Systems with Variable Structure" (N. Olgac, H. Elmali) 8th IFTOMM Conference in Prague, CS. Aug. 1991.
27. "On the Calibration and Sensitivity Aspects of a Monocular Object Configuration Sensor", (N. Olgac, P.Craig, P. Rama), Advances in Instrumentation, edited bound volume ASME. DSC-Vol. 30, pp. 13-19, 1991. Presented in the Winter Annual Meeting-91.
28. "Advancements in Utilizing Monocular Object Configuration Sensor", (N. Olgac, P.Craig, B.E. Platin), Advances in Instrumentation, edited bound volume ASME. DSC-Vol. 30, pp. 21-24 1991 . Presented in the Winter Annual Meeting-91.
29. "Theory and Implementation of Sliding Mode Control with Perturbation Estimation" , (H. Elmali, N. Olgac), IEEE Robotics and Automation Conference, Nice, May 1992.
30. "An Improved Sliding Mode Control", (N. Olgac, V. Prasad Iragaravarapu), IEEE Control and Decision Conference, Tucson, AZ. 1992,.

31. "Position Feedback-Induced Resonance: Delayed Resonator ", (N. Olgac, M. McFarland, B. Holm-Hansen), ASME DSC-Vol. 38, Winter Annual Meeting 1992.
32. "Generalized Monocular Object Configuration Sensor ", (N. Olgac, P. Craig). Publication no. 92-WA/DSC-6 , ASME, Winter Annual Meeting 1992.
33. "Robust Output Tracking via Sliding Mode Control with Perturbation Estimation ", (H. Elmali, N. Olgac), IFAC World Congress, Sidney, AUS 1993.
34. "Vibration Absorbers Utilizing Only Position Measurements for Time Varying Excitation Frequencies" , (N. Olgac, B. Holm-Hansen), ASME / DSC Vol. 50, pp. 223-230. Also presented at ASME/Winter Annual Meeting 1993.
35. " Experimental Comparison of SMCPE with Conventional Controllers", (N. Olgac, J. Moura), ASME / DSC Vol. 50, pp. 201-208. Also presented at ASME/Winter Annual Meeting 1993.
36. "A New Direction in Active Vibration Absorption : Delayed Resonator" , (N. Olgac, B. Holm-Hansen), ASME / DSC Vol. 50, pp.15-20. Also presented at ASME/Winter Annual Meeting 1993.
37. "Generalization of Ackermann's Formula for Linear MIMO Time Invariant and Time-Varying Systems", (M. Valasek, N. Olgac), CDC (Conference on Control and Decision) San Antonio, TX, 1993.
38. "Constrained Sliding Mode Control for Nonlinear Dynamic Systems without Chatter" (N. Olgac, J. Chang) CDC (Conference on Control and Decision), San Antonio, TX 1993.
39. "Comparative Study of Delayed Resonator with other Vibration Absorption Techniques", (N. Olgac, V. Jovanovic), ASME / Winter Annual Meeting edited volume DSC Vol. 55-2, 1994.
40. "A Comparative Study on Simulations vs Experiments of SMCPE", (N. Olgac, J. Moura), (American Control Conference) ACC 94, Baltimore, June 1994.
41. "Experimental Results on a Robust Multi-Axes Motion Control Routine", (J. Moura, N. Olgac), 3rd International Conference on Advanced Motion Control, Berkeley, March 1994.
42. "Design Characteristics of a Novel Tunable Active Vibration Absorber", (N. Olgac, B. Holm-Hansen), ASME / Winter Annual Meeting, edited volume DE Vol. 75, 1994.
43. "Single Mass Dual Frequency Fixed Delayed Resonator (DFFDR)", (N. Olgac, H. Elmali, S. Vijayan), ACC 95, Seattle, June 1995.
44. "A Novel Technique for Suppressing Vibration in Machines: The Delayed Resonator Absorber", (N. Olgac, B. Holm-Hansen). IFToMM World Congress. Milano, Italy, 1995.
45. "Robust Lyapunov Control with Perturbation Estimation" (J. Moura, N. Olgac) ACC 95, Seattle, June 1995.
46. "High Frequency Implementation of Delayed Resonator Concept Using Piezoelectric Actuators", (N. Olgac, H. Elmali, M. Renzulli, M. Hosek), ACTIVE 95 Int'l. Symposium on Active Control on Sound and Vibration, Newport Beach, CA, July 1995.

47. "Active Vibration Absorption Using Delayed Resonator with Relative Position Measurement", (N. Olgac, M. Hosek), 15th ASME Biennial Conference on Vibration and Noise, Boston, Sept. 17-21, 1995.
48. "Pole Placement for MIMO Time-Varying Non-Lexicographic-Fixed Linear Systems", (M. Valasek, N. Olgac), CDC (Conference on Control and Decision), New Orleans, Dec. 1995.
49. "Optimum Trajectory Pre-shaping for Sliding Mode Control", (. J. Moura, R. Ghosh-Roy, N. Olgac), Japan-USA Symposium on Flexible Automation, Boston, July 1996.
50. "Delayed Resonator Application on a Cantilever Beam", (H. Elmali, N. Olgac, N. Olgac), Japan-USA Symposium on Flexible Automation, Boston, July 1996.
51. "Trends in Delayed Control of Vibration and Noise" , (N. Olgac), **Keynote paper** at MOVIC 96, Motion and Vibration Control, Makuhari, Japan, Sept. 1996.
52. "Implementation of DR and DFFDR Techniques on Distributed Systems", (N. Olgac, H. Elmali, M. Hosek, M. Renzulli), ASME / IMECE, Nov. 1996, Atlanta.
53. "Discrete Domain Analysis of Delayed Resonator", (H. Elmali, N. Olgac), ASME / IMECE, Nov. 1996, Atlanta.
54. "Tracking Control of a Rotating Flexible Beam Using Modified Frequency Shaped Sliding Mode Control", (N. Jalili, N. Olgac), ACC, Albuquerque, NM, June 1997.
55. "Adaptive Tuning of Piezo-actuated Delayed Resonator Absorbers", (M. Renzulli, R. Ghosh-Roy, N. Olgac), Third ARO Workshop on Smart Structures, Blacksburg, VA, Aug. 1997.
56. "Robust Tracking for Uncertain Flexible Structures Using Mixed Time-Optimal Sliding Mode Control", (N. Jalili, N. Olgac), ASME Biennial Conference on Vibration and Noise, Sacramento, CA, Sept. 1997.
57. "Centrifugal Delayed resonator, Theory and Experiments", (M. Hosek, N. Olgac, H. Elmali), ASME Biennial Conference on Vibration and Noise, Sacramento, CA, Sept. 1997.
58. "Torsional Vibration Control of MDOF Systems Using the Centrifugal Delayed Resonator", (M. Hosek, N. Olgac, H. Elmali), IEEE International Conf. On Control Applications, Hartford, CT, Oct..1997.
59. "Robust Nonlinear Control via Moving Sliding Surfaces, n-th Order Case", (R. Ghosh-Roy, N. Olgac), IEEE Conference on Decision Control, San Diego, CA, Dec. 1997.
60. "Delayed Resonator with Speed Feedback, Design and Performance Analysis", (D. Filipovic, N. Olgac), IEEE Conference on Decision Control, San Diego, CA, Dec. 1997.
61. "Delayed Resonance Yields a New Perspective on Regenerative Machine Tool Chatter", (N. Olgac, M. Hosek), ASME / IMECE, Dallas, TX, Nov. 1997.

62. "On the Piezoelectric Control of Flexible Beams Using Delayed Resonator Vibration Absorber", (N. Olgac, N. Jalili), NATO Advanced Research Workshop on Smart Structures, Pultusk, Poland, June 1998.
63. "New Concept of Active Multiple Frequency Vibration Suppression Technique", (M. Valasek, N. Olgac), NATO Advanced Research Workshop on Smart Structures, Pultusk, Poland, June 1998.
64. "Stability of Multiple Delayed Resonator Vibration Absorbers", (N. Jalili, N. Olgac), ASME / IMECE, Anaheim, CA, Nov. 1998.
65. "Experimental Comparison of Delayed Resonator and PD Controlled Vibration Absorbers Using Electromagnetic Actuators", (H. Elmali, M. Renzulli, N. Olgac), ASME / IMECE, Anaheim, CA, Nov. 1998.
66. "Optimum Delayed Feedback Vibration Absorber for MDOF Mechanical Structures". (N. Jalili, N. Olgac), IEEE Conference on Decision Control, Tampa, FL, Dec. 1998.
67. "A Quasi On-line Tuning Structure for Optimum Delayed Feedback Vibration Absorber", (N. Jalili, N. Olgac), ACC 99, San Diego, June, 1999.
68. "A Novel Technique for the Stability of Multiple Frequency Resonators", (N. Olgac), ASME/DETC-99, Las Vegas, Sept., 1999.
69. "A Single Step Automatic Tuning Algorithm for the Delayed Resonator Vibration Absorber", (M. Hosek, N. Olgac) ASME/IMECE 99, Nashville, Nov. 1999.
70. "A New Method for Multiple Frequency Vibration Absorption", (C. Huang, N. Olgac), ACC 2000, Chicago, June 2000.
71. "Relative Stability Analysis for Vibration Absorbers with Multiple Delayed Feedback", (N. Olgac, C. Huang), ASME/IMECE 2000, Orlando, Nov. 2000.
72. "The Influence Region Analysis for the Delayed Resonator Vibration Absorber", (G. Grillo, N. Olgac), ASME/IMECE 2001, New York, Nov. 2001.
73. "A New Practical Stability Analysis Method for Time Delayed LTI Systems and a Tour of Practical Applications of Time Delayed Control in Vibration Absorption". Special lecture, 3rd IFAC Workshop on TDS, Albuquerque, NM, Dec. 2001. <http://www.siue.edu/ifacdelay/>.
74. "A Numerical Study for Time Delayed System Stability Using Direct Method", (R. Sipahi, N. Olgac), ESDA 2002, 6th Biennial Conference on Engineering Systems Design and Analysis, Istanbul, Turkey, July, 2002.
75. "A New Perspective for Time Delayed Control Systems with Application to Vibration Suppression", IMECE 02, New Orleans, Nov. 2002. (R. Sipahi, N. Olgac). **2002 Best Student Paper Award, ASME-DSCD.**
76. "Improvements on the Cluster Treatment of Characteristic Roots and Case Studies", (R. Sipahi, N. Olgac), CNRS-NSF Workshop on Advances in Time-Delayed Systems, Paris, Jan. 2003.

77. "Direct Method Implementation for the Stability Analysis of Multiple Time-Delayed Systems", (R. Sipahi, N. Olgac), IEEE_CCA 2003, Istanbul, Turkey, June 2003.
78. "An Exact Method for the Stability Analysis of Time Delayed LTI Systems", (N. Olgac, R. Sipahi), Automatic Control Conference, June, 2003, Denver.
79. "Direct Method for Analyzing the Stability of Neutral Type LTI-Time Delayed Systems", (N. Olgac and R. Sipahi), IFAC Workshop on TDS, Rocquencourt, France, Sept. 2003.
80. "Degenerate Cases in Using the Direct Method", (R.Sipahi, N. Olgac), ASME, Biennial Conference on Vibration and Noise, Sept. 2003,, Chicago.
81. "An Actively Controlled Harmonic Force Generator", (O. Mikus, N. Olgac, R. Sipahi), ASME IMECE 2003, Nov. 2003, Washington, D.C.
82. "Stability Analysis of Multiple Time Delay Systems Using the Direct Method ", (R. Sipahi, N. Olgac) , ASME IMECE 2003, Nov. 2003, Washington, D.C.
83. Poster paper . "The Effects of Mercury on the Micro-dynamics of Injection Pipettes", (K. Ediz, N. Olgac), ASME IMECE 2003, Nov. 2003, Washington, D.C.
84. Poster paper. "The Homicidal Chauffeur Problem wit Time Delayed Feedback", (N. Olgac, R. Sipahi, A. Ergenc), ASME IMECE 2003, Nov. 2003, Washington, D.C.
85. "A Novel Stability Study on Multiple Time Delayed Systems (MTDS) Using the Root Clusterig Paradigm ", American Controls Conference, Boston, June 2004. CD Paper # FrP08.2, p. 5422-5427
86. "Feedback Time Delay as a Stabilizing Tool in Trajectory Tracking, Analysis and Experiments", (N. Olgac, R. Sipahi, A. Ergenc), American Controls Conference, Boston, June 2004. CD Paper # FrP08.6, p. 5443-5448.
87. "Delay Scheduling-Use of Time Delay as a Stabilizing Tool in Trajectory Tracking, Experimental Validation", (N. Olgac, R. Sipahi, A. Ergenc), Mechatronics 2004, Ankara, Turkey, Aug. 2004. CD p. 731-742.
88. "Complete Stability Map of Third Order LTI, Multiple Time Delay Systems", (R. Sipahi, N. Olgac), 5th IFAC Workshop on TDS, Sept. 2004, Leuven, Belgium.
89. "The Cluster Treatment of Characteristic Roots and the Neutral Type Time-Delayed Systems", (N. Olgac , R. Sipahi), ASME-IMECE 04, Los Angeles, November 2004. Paper # IMECE2004-59188
90. "Chatter Stability Mapping for Simultaneous Machining", (N. Olgac, R. Sipahi), ASME, IMECE 2005, paper no. 79116, Orlando, FL. Nov. 2005.
91. "Kernel and Offspring Concepts for the Stability Robustness of Multiple Time Delayed Systems", (R. Sipahi, N. Olgac), ASME DETC 2005, paper no. 84470, Long Beach, CA, Sept. 2005.
92. "A Comparative Survey in Determining the Imaginary Characteristic Roots of LTI Time Delayed Systems", (R. Sipahi, N. Olgac), IFAC World Congress, Prague, Czech Republic, Aug. 2005.

93. "Micro-pipette Motion Detection by Using Optical Fiber Sensors", (Ali F. Ergenc, N. Olgac), 31st North East Bioengineering Conference, Hoboken, N.J., 2005.
94. "Cluster Treatment of Characteristic Roots for Robust Stability of Multiple Time Delayed Systems", (R. Sipahi, N. Olgac), The Sixteenth International Workshop on Operator Theory and Applications (IWOTA), Storrs, CT, July, 2005.
95. "Exact Stability Analysis of Neutral Systems with Cross-Talking Delays", (N. Olgac, T. Vyhlidal, R. Sipahi), 6th IFAC Workshop on TDS, July 2006, L' Aquila, Italy. CD-ROM, 6pp.
96. "Extended Kronecker Summation for Determining the Kernel and Offspring of LTI Systems with Multiple Delays", (A. Ergenc, N. Olgac), 6th IFAC Workshop on TDS, July 2006, L' Aquila, Italy. CD-ROM, 6pp.
97. "Stability Analysis of Multiple Time Delay Systems Using 'Building Block' Concept", (H. Fazelinia, R. Sipahi, N. Olgac), ACC 2006, Minneapolis, MN, June 2006.
98. "Stability Map of Systems with Three Independent Delays", (R. Sipahi, N. Olgac), ACC 2006, Minneapolis, MN, June 2006.
99. "A Unique Mathematical Tool Deployed on Variable-Pitch Milling", (H. Fazelinia, N. Olgac), NSF-DMI Design, Service, and Manufacturing Grantees and Research Conference, St. Louis, 2006.
100. "Dynamics and Stability of Variable-Pitch Milling", (N. Olgac, R. Sipahi), ASME – IMECE 2006, Chicago.
101. "Optimum Conditions for Variable-Pitch Milling", (H. Fazelinia, N. Olgac), ASME – IMECE 2006, Chicago.
102. "Optical Fiber Sensor for Non-contact Monitoring of ICSI Pipettes", (A. F. Ergenc, N. Olgac), ASME – IMECE 2006, Chicago.
103. "Kronecker Summation Method and Multiple Delay Systems", (A.F. Ergenc, N. Olgac, H. Fazelinia), IEEE – CDC, 2006, San Diego.
104. "Delay Decoupling Control, A Novel Method for Systems with Multiple Delays", (M. Poursina, N. Olgac), IFAC- Time Delay System Workshop - TDS 07, CD-ROM, Nantes, France, September 2007.
105. "Complete Stability Map of Neutral Type, First Order, Two Time Delay Systems", (Sipahi, R., Olgac, N., Breda, D.) , Automatic Control Conference, ACC 07, New York, CD-ROM, June 2007.
106. "A New Micro-injector and an Optical Sensor", (A. Ergenc, N. Olgac), Automatic Control Conference, ACC 07, New York, CD-ROM, June 2007..
107. "Mathematical Tools for Time-Delayed Dynamics Applied to Variable-Pitch Milling Chatter – Active Vibration Absorption", NSF-IREE grantees meeting, W. Lafayette, IN, (A. Ergenc, N. Olgac), Oct. 2007.

108. “Inverting Control, A New Strategy on Time Delayed Systems”, (A. Ergenc, H. Fazelinia, N. Olgac), IFAC World Congress Seoul, CD-ROM, July 2008.
109. “Robust Control of Cart-Pendulum Dynamics against Uncertain Multiple Time Delays”, (E. Cavdaroglu, N. Olgac), ACC 08, Seattle, CD-ROM, June 2008.
110. “Robust Control for Multiple Delay Systems with Delay-Decouplability”, (K. Turkoglu, N. Olgac), ASME-DSCC, Dynamic Systems and Controls Conference, Kamran – DDC –DSCC

Patents :

- 1) **Delayed Resonators as Active Dynamic Absorbers** (N. Olgac, *sole inventor*)
US patent no. 5,431,261; issue date: July 11, 1995
- 2) **Single Mass Dual Frequency Fixed Delayed Resonators** (N. Olgac, *sole inventor*)
US patent no. 5,505,282, issue date : April 9, 1996.
- 3) **Tunable Torsional Vibration Absorber: The Centrifugal Delayed Resonator**, (M Hosek, H. Elmali and N. Olgac), US patent no. 5,934,424, issue date : August 10, 1999.
- 4) “**Rotationally Oscillating Micro-Injector**”, (N. Olgac, *sole inventor*), Non-provisional patent application filed with US Patent Office, docket no. **98121-00138**, March 2007. International application published, April 2008, # **WO 2008/046051 –A2** .
- 5) “**Chatter Prediction Methodology for Simultaneous Machining**”, (N. Olgac, *sole inventor*), Non-provisional patent application is filed with the US Patent Office, **11/439,411**, Feb.2007 .

Society memberships and activities :

- Member**, Connecticut Academy of Science and Engineering, **CASE**, 2007
Fellow, **ASME** (American Society of Mechanical Engineers).
Senior Member, **IEEE** (Institute of Electrical and Electronics Eng.), (2004-present).
Member, IFAC Technical Committee on Linear Control Systems (2006-present)
Assoc. Editor, **ASME J. of Dynamic Systems, Measurement and Control** (1997-2004)
- Executive Committee Member**, ASME, Dynamic Systems and Control Division. (2002-2007)
Executive Committee Vice Chair, ASME, Dynamic Systems and Control Division. (2004-2005)
Executive Committee Chair, ASME, Dynamic Systems and Control Division. (2005-2006)
Member, IFToMM (Int. Federation of Mechanism and Machinery) Technical Committee for Mechatronics (1995-present)
- Member - DSCD Advisory Committee**, ASME Dynamic Systems and Control Division (07-10),
Member, Conferences Committee, ASME – DSCD (2007-2010).
Elected Member, **ASME-COD** (Conference of Divisions), in charge of the Technical Publications, (2008-2011).
Program Chair, ASME-DSCC (Dynamic Systems and Control Conference) 2009 (LA, CA).
- Officer**, ASME Systems and Design Group (2008-2011),

Chair, Ad-hoc Committee for establishing a new conference for the DSCD Division of ASME, 2006.
(This very critical activity for the Division, resulted in a new conference which will start in 2008).

Chair, Steering Committee for DSCD Conference, Dynamic Systems and Control Conference (2007-8),

2009 Program Chair, ASME-DSCC (Dynamic Systems and Control Conference) LA, CA.
2006 Symposium organizer, IFAC (TDS) Workshop, L'Aquila, Italy.
2001-03 Chairman, **Noise and Vibration Control Panel**, ASME/DSCD
2001-03 Symposium organizer, ASME-IMECE 2001, Active Control of Noise and Vibration
1999 ASME-IMECE Program Chair for the DSC Division.
1996-97 Workshop Chairman, **IEEE/ASME Conference on Control Applications CCA '97**.
1991-96 **Member of Board of Directors-Founding Member**, Technical University of Istanbul
International Alumni Assoc.
1993-96 Chairman, **Instrumentation and Components Panel of DSC Division/ASME**
1994-present Member, Instrumentation and Components Panel of DSC Division/ASME
Manufacturing Systems Panel of DSC Division/ASME
Modeling and Identification Panel/ DSC Division/ASME
1991-95 Session Organizer ASME/Winter Annual Meeting, DSC Division
1985 Member, Organizing Committee of MECO 85 (Measurement and Control), Istanbul,
Turkey
1984 **Local Organizing Chairman**, AMSE Summer Conference on Modelling and
Simulation

University services (last 5 years only)

(With durations longer than 3 years)

Promotion, Tenure and Re-appointment Committee, ME Dept. (Chair and member)
Courses and Curriculum Committee (Chair of ME Dept. C&CC and member of the School's C&CC)
Faculty search committees (ME Dept., resulted in 3 hires in the last 3 years, was the chair of the
committee in one of the searches)

(Mission critical and consensus building services)

Restructuring of ME Senior Design Projects / Industry sponsored format
Reforming ME Ph.D. Qualifying Examinations
Chair of "Non-uniform Teaching Load Committee"
Department Head renewal committee

Reviewer for

The National Science Foundation
International Journal of Control
Automatica
ASME Dynamic Systems Measurement and Control
ASME J. of Vibration and Acoustics
ASME Tran. of Mechanical Design

ASME, J. of Manufacturing Science and Technology
 IEEE Transaction on Automatic Control
 IEEE Tran. Control Systems Technology
 IEEE Tran. On Systems, Man and Cybernetics
 IEE Control Systems Theory and Applications
 ASCE J. of Engineering Mechanics
 J. of Vibration and Control
 Int. J. of Machine Tools and Manufacture
 Int. J. of Vehicle Dynamics
 European Control Journal
 Univ. of Connecticut Research Foundation
 J. of Society of Experimental Mechanics

Graduated thesis students:

John Guttermuth, M.S., 1987,	A Fundamental Study for the Identification of Machine Tool Vibrations.
Marty Wood, M.S., 1987,	Optimal Strategies for Mobile Robot Motions.
Hakan Elmali, M.S., 1987,	An Optimal Energy Problem for Oscillatory Motions of Robotic Manipulators.
Jeff Chang, M.S., 1989,	An Application of Sensory Force/Path Control for ASEA IRb6/S1 Robot.
Jeh-min Chang, Ph.D., 1991,	Sliding Mode Control of Multi-Input-Multi-Output Nonlinear Systems.
Hakan Elmali, Ph.D., 1992,	Robust Output Tracking Control of MIMO Nonlinear Systems.
Brian Holm-Hansen, M.S., 1994	A New Technique for Active Dynamic Vibration Absorption: Delayed Resonator.
Prasad Iragaravarapu, Ph..D., 1994,	Robustness Features of the Sliding Mode Control for Reduced Order Systems .
Mark Renzuli, M.S. (EE) 1996	Robustness of Delayed Resonators via Autotuning Process.
Rajiv Ghosh-Roy, M.S. 1996	Moving Sliding Surfaces for Faster Tracking of Nonlinear Uncertain Systems- the nth Order Case
Jairo Moura, Ph.D., 1997	Design of Perturbation Observers and Input Shaping for Sliding Mode Control of Multi-Axes-Mechanisms”.
Martin Hosek, Ph.D. , 1997	Tunable Torsional Vibration Absorber: The Centrifugal Delayed Resonator.
Nader Jalili, Ph..D., 1998	Optimum Vibration Suppression of Flexible Structures Using Delayed Feedback
Chang Huang, M.S., 2000	An Active Vibration Absorber: Multiple Frequency Delayed Resonator
Rifat Sipahi, M.S., 2002	A Unique Treatment of Time Delay System Stability: The Direct Method
Oldrich Mikus, M.S. , 2003	The Design and Control of a Harmonic Force Generator

Kerem Ediz, M.S., 2003	The Effect of Mercury on the Micro-dynamics of the Injection Pipettes.
Rifat Sipahi, Ph.D., 2005	Cluster Treatment of Characteristic Roots, CTCR, A Unique Methodology for the Complete stability Robustness Analysis of Linear Time Invariant Multiple Time Delayed Systems Against Delay Uncertainties
Ali Fuat Ergenc, Ph.D., 2007	A Novel Method of ICSI: Rotationally Oscillating Drill, Design, Control and Monitoring.
Hassan Fazelinia, Ph.D., 2007	A Novel Stability Analysis of Systems with Multiple Time Delays and its Application to High Speed Milling Cutter, Multiple Time Delayed Systems

Presently continuing graduate research students:

Kamran Turkoglu, Ph. D., current	Synthesizing Stable Controllers for delayed Systems
Emre Cavdaroglu, M.S., current	Repetitive Control and Stability Concerns
Paul McCullough, M.S., current	SWARM dynamics and time delayed feedback