



## Curriculum Vitae

**NEJAT OLGAC**

Professor, Department of Mechanical Engineering  
University of Connecticut Storrs, CT 06269-3139  
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Date of Birth: 8/28/1950

Marital status: Married with two children

### **Education:**

- 1976 Dr. Eng. Sci. Columbia University, NYC, USA  
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:**

#### **Academic**

- 9/2013-15 **Chair, System and Mechanics Group**, Dept. of Mechanical Engineering, directing the strategic decisions with the 14-faculty-member (tenured or tenure-track).
- 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.

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#### **Industrial**

- 9/78-8/81 **COO and Member of the Board of Directors and Asst. Gn. Mgr., Elektroakustik, S.A.**, within the Transturk Holding Group, Istanbul, Turkey. Manufacturer of color TVs, audio-visual equipment under German Telefunken License. Overseeing manufacturing, product portfolio, marketing and personnel matters of an operation with **over 350 employees**.
- 1977-78 **Industrial Projects Director**. Transturk Group, Istanbul, Turkey. Responsible for new investment projects. Personally managed a **\$ 500,000 World Bank credit** for a flask-less casting facility for making machine tool beds, in Bunyan, Anatolia. Manufacturing of enamel heating units wood stoves and accessories.
- 1976-77 R&D Project Engineer, Arcelik S.A., Istanbul, Turkey. Household appliances manufacturer. Responsibilities: Mechanical design improvements of refrigerators, washing machines, vacuum cleaners. Project manager to support the local production of hermetic compressors.
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## Training

- 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: Advances in Control Systems Design (3<sup>rd</sup> Grad course in controls, 50% covers my own discoveries on Time-Delayed Systems) and Theory and Design of Automatic Control Systems (second Grad course), **Linear Systems Theory** (I introduced this course to the curriculum, and it is now a compulsory course), Introduction to Engineering, Dynamics of Mechanical Systems, Elements of Machine Design, Senior Design Project (Capstone course is industrially sponsored), Measurement Techniques, Design and Control in Robotics, Advanced Control Systems Design.

## Vocational Objective and Research Interests :

Create a scientific foot-print in the **Time-Delayed Systems** area. Our unique mathematical paradigm which is called the **Cluster Treatment of Characteristic Roots (CTCR)** has already been widely adopted by the systems community (since 2006). Vast range of applications of CTCR is progressing. They include

- Delay Scheduling Control (DS)
- Sign Inverting Control (SIC)
- Active vibration suppression (**Delayed Resonator** concept of tuning – 3 patents- 1995-1996-1999),
- Simultaneous Machining Chatter analysis – variable-pitch milling chatter and optimization (1 patent- 2011)
- New paradigm in combustor design and control method against Thermo-acoustic Instability

Other research topics:

- 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.

Extensive industrial consulting on general engineering projects (companies include Pratt and Whitney, Otis Elevators, Sikorsky, General Electric, Rogers Corp., Stanley Tools, Pall Corp.,

## Honors and Awards:

- 2013 **General Chair** , DSCC 2013, ASME Dynamic Systems and Control Conference, Stanford University, Palo Alto, CA. This was the largest DSCC to date (440 total attendees from 24 countries).
- 2012 **General Chair** – 10th IFAC Workshop on Time Delay Systems June 22-24, 2012, Boston, MA.
- 2013 **“Conference Best Paper Award, Theory”**, ASME DSCC 2013, Palo Alto, CA. (Q. Gao’s work on Sign Inverting Control)

- 2012 “Best Student Paper Award Finalist”, ASME DSCC 2012, Ft. Lauderdale, FL.  
(Q. Gao and U. Zalluhoglu, on Spectral Delay Space)
- 2008 **Research Excellence Award, Mechanical Engineering, UCONN**
- 2007 **CASE Member**, Connecticut Academy of Science and Engineering
- 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 **Senior Member, IEEE** (Institute of Electrical and Electronics Eng.).
- 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
- 1997 **Fellow, ASME** (American Society of Mechanical Engineers).
- 1997 Who is Who in Turkey, Profesyonel Ltd., 3<sup>rd</sup> 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.
- 1982 **NSF Research Initiation Award**
- 1993 **UCONN Provost’s Economic Development Research Award**
- 1989 DAAD (German Academic Exchange Assoc.) Visiting Scholar.
- 1988 “Professeur Invite”, INRIA/French Foreign Relations Ministry.
- 1972-74 Graduate Research Assistantship, Columbia University.
- 1974-76 U.S. Department of the Interiors 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** with highest honors).
- 1961-67 Honor roll throughout the high school education, Pendik HighSchool, Turkey, first in graduating class 1967.

### **Language skills :**

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

## **Plenary lectures**

**Plenary Address, CCE 2014** – Int. Conference on Electrical Engineering, Computing Science and Automatic Control, “Novel Perspectives on Stability of Time-Delayed Systems (TDS) and Practical Implications”. <http://148.247.96.3/cce.cinvestav.mx/>, Ciudad del Carmen, MX, Sept. 29-Oct. 3, **2014**.

**Plenary Address, SEM Annual Conference & Exposition** on Experimental and Applied Mechanics, “Adaptive Hybrid Control for Low Resolution Feedback Systems with Application on a Novel Micro-injector: Ros-drill”. Uncasville, CT. June 13-16, **2011**,

**Plenary Address, IFAC Time Delay Systems Workshop**, “Time Delayed Systems, Bridging Between Theory and Realistic Applications”, Prague, Czech Republic, **2010**.

**Plenary Address** – TOK (Turkish Automatic Control Society) 50<sup>th</sup> Year Symposium, “TIME DELAYED SYSTEMS , A research loop from a practical problem to a novel mathematics and back to practice”, Istanbul, Turkey, **2008**,

**Plenary Address, IFAC Time Delay Systems Workshop**, “On Delayed Resonator Vibration Absorber and Mathematical Impact”, Santa-Fe, NM., **2001**.

**Plenary Address ,MOVIC, Int. Motion and Vibration Control Conference** “On Delayed Resonator Vibration Absorber and Practical Applications” , , Chiba, Japan, **1996**.

**Keynote Lecture**, “Toward the Utilization of Computer Intelligence in Metal Machining,”, VII Brazilian Congress of Engineering Mechanics, San Jose dos Campos, Brazil, December, **1985**.

## **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. Espieau, 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)

ASML, CT (2004-2005)

Scott and Scott , Ideaz Inc. (2003-2005)

Connecticut Academy of Sciences (DOT) (2007-2009)

## **Invited lectures (last 10 years)**

CINVESTAV, Mexico City,  
Hong-Kong University  
Shanghai East China University of Science and Technology  
Shanghai Jiaotong University  
Shanghai Tongji University  
Nanjing University of Science and Technology  
Nanjing, Polytechnic University  
Beijing Tsinghua University  
Beihan University  
Middle East Technical University (Ankara)  
Lund Tech. Univ. (Sweden)  
University of Rostock (Germany)  
Univ of Rome (la Sapienza)  
University of Napoli (Federico Secondo, Italy)  
Seconda Uni. di Napoli (Italy)  
Stanford University  
Univ. of Saarbruecken (Italy)  
Tech. Univ. Clausthal (Germany)  
Yildiz Technical University, (Istanbul, Turkey)  
Technical University of Istanbul, (Turkey)  
Koc University (Istanbul, Turkey)  
Czech Technical University (Prague)  
UC San Diego  
Southern Methodist University  
Clausthal TU (Germany)  
Technische Univ. of Saarbruecken (Germany)  
UC Berkeley  
UC San Diego  
UMass- Amherst

## **Editorial responsibilities:**

- Associate Editor, **IEEE Control Systems Technology** (2013-16)
- Member of the Editorial Board, **IET, Control Theory and Applications**, (2013-2015)
- Member of the Editorial Board, **Bulletin of Applied Mechanics**, (2010-present)
- 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)
- Guest Editor (with S. Stepan, and T. Kalmar-Nagy), Special issue of **JVC / Journal of Vibration and Control on Time Delay Systems**, Volume 16, Issue 7-8, June 2010, Page 941
- 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 :

**Total citations 3317 and h-index 33** (see imprint from Google Scholar at the end of the CV)

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 Modeling 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 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.
6. "A Study on the Computer Modeling of the Lathe Cutting Mechanism," (N. Olgac, M. Devin), International Journal of Modeling and Simulation Vol. 4, No. 4 (1984), pp. 149-152.
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.
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. Iragaravarapu) 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 Robustness 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.
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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 Clustering 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, Ann Arbor, MI, CD-ROM, 2008.
111. "Full State Feedback Control Design for 'Delay Scheduling'", (E. Cavdaroglu, N. Olgac) – ASME-DSCC, Dynamic Systems and Controls Conference, Ann Arbor, MI, CD-ROM, 2008.
112. "Time Delayed Systems – A Research Loop from a Practical Problem to Novel Mathematics and Back to Practice", TOK 08, Istanbul, Turkey, Nov. 2008.
113. "Swarm Coordination Under Conflict", (D.A.Sierra, P. McCullough, E. Adams, N. Olgac), Proc. Of ACC (American Control Conference), St. Louis, pp. 1021-1026, 2009. DOI 10.1109/ACC.2009.5159901.
114. "Swarm Coordination under Conflict and Use of Enhanced Lyapunov Control", (D.A.Sierra, P. McCullough, N. Olgac, E. Adams), IDETC 2009, San Diego. pp. 1945-1954
115. "A Lyapunov Treatment of Swarm Coordination Under Conflict", (P. McCullough, M. Bacon, N. Olgac, D. Sierra, R. Gomez), ASME – DSCC, 2009, Hollywood.
116. "On the Geometric Characteristics of Cell Membrane Using Rotationally Oscillating Drill (Ros-Drill®)", (J. Diaz, M-K. Jedi, N. Olgac, T-H Fan, A.F Ergenc), ASME – DSCC, 2009, Hollywood.
117. "Full-State Feedback Control Design with Delay Scheduling for Cart-Pendulum Dynamics", E. Cavdaroglu, N. Olgac), IFAC Workshop on Time Delay Systems, TDS 09, CD-ROM, Sept. 2009, Sinaia, Romania.
118. "Stability Analysis for a Consensus System of a Group of Second Order Dynamics with Time Delays", (R. C. Gomez, N. Olgac), IFAC Workshop on Time Delay Systems, TDS 2010, CD-ROM, June 2010, Prague, Czech Rep..
119. "Stability of the Consensus of a Group of Second Order Agents with Time Delayed Communications", (R. Gomez, N. Olgac), ASME- DSCC, 2010, Boston.
120. "Automated ICSI with Rotationally Oscillating Drill (Ros-Drill®) Using Visual Feedback", (J. Diaz, M-K. Jedd, N. Olgac, T-H Fan), ASME- DSCC, 2010, Boston.
121. "Robust Region-tracking Method for Multi-agent Systems Using Sliding Mode Control, (M. Bacon, N. Olgac), ASME – DSCC 2010, Boston.

122. "Application of sliding mode control to swarms under conflict", (R.C. Gomez, N. Olgac, D.S. Bueno), ASME – DSCC 2010, Boston.
123. "Consensus of a Group of Second Order Agents with Switching Irregular Communication Topologies and Time-Delay", (R.C. Gomez, N. Olgac) , CDC 2010, Atlanta, GA.
124. "Exhaustive Stability Analysis in a Consensus System with Time Delay and Irregular Topologies", (R.C. Gomez, N. Olgac), ACC 2010, San Francisco, CA.
125. "Exact Stability Analysis of Second Order Linear Consensus Protocols with Time Delay", (R.C. Gomez, N. Olgac) , CDC 2011, Orlando, FL.
126. "Adaptive Hybrid Control for Rotationally Oscillating Drill (Ros-drill©), Using A low-resolution Sensor", (Z. Zhang, J. Diaz, N. Olgac), ASME-DSCC 2011, Arlington, VA.
127. "Stability of a Consensus Protocol for Second Order Agents WITH Multiple Time Delays", (R. Cepeda-Gomez, N. Olgac), ASME DSCC 2011, Arlington, VA.
128. "The Homicidal Chauffeur Problem with Multiple Time Delayed Feedback", (Q. Gao, R. Cepeda-Gomez, N. Olgac), IFAC Time Delay Systems Workshop, Boston, 2012.
129. "Stability of a second order Leader-Follower consensus protocol with partial access to the leader and communication and input delays", (R. Cepeda-Gomez, N. Olgac), IFAC Time Delay Systems Workshop, Boston, 2012.
130. "Formation Control Based on a Consensus Protocol under Directed Communications with Two Time Delays", (R. Cepeda-Gomez, N. Olgac), ACC 2012. Montreal.
131. Stability of a second order Leader-Follower consensus protocol with partial access to the leader and communication and input delays", (R. Cepeda-Gomez, N. Olgac), DSCC 2012, Fort Lauderdale, Oct. 2012.
132. "Exact Stability Analysis of Second-Order Leader-Follower Consensus Protocols with Multiple Time Delays", (R. Cepeda-Gomez, N. Olgac), IEEE-CDC , Maui, HI, 2012.
133. "An Adaptive Control Method with Low-resolution Encoder". (Z. Zhang, N. Olgac), ASME-DSCC 2013, Stanford, CA.
134. "Design and Stability Analysis of DELAYED Resonator with Acceleration Feedback", (T. Vyhlidal, N. Olgac, V. Kucera), ASME-DSCC 2013, Stanford, CA.
135. "Equivalency of Stability Transitions Between the SDS (Spectral Delay Space) and DS (Delay Space), (Q. Gao, U. Zalluhoglu, N. Olgac), ASME-DSCC 2013, Stanford, CA. **"Conference Best Paper Award, in Theory". "Student Best Paper Award finalist"**.
136. "Sign Inverting and Delay Scheduling Control Concepts with Multiple Rationally Independent Delays" , (Q.Gao, A. Kammer,U. Zalluhoglu, N.Olgac), ACC 2014, Portland, OR.
137. "Stability and Control of Thermoacoustic Device: the Rijke's Tube", (N. Olgac, U. Zalluhoglu, A. Kammer)., DSCC 2014, San Antonio.
138. "Stability of Blade-Casing Interference in Turbomachinery and the Design Alternatives on Damping Characteristics". (N. Olgac, U. Zalluhoglu, A. Kammer), DSCC, 2014, San Antonio.
139. Some critical properties of sign inverting control for LTI systems with multiple delays". (Q. Gao, A. Kammer, U. Zalluhoglu, N. Olgac), CDC 2014, Los Angeles.

## 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) **“Method for Facilitating Chatter Stability Mapping in a Simultaneous Machining Application”** (N. Olgac, *sole inventor*), US Patent no. 8,011,864, issue date: September 6, 2011.

## Society memberships and activities:

**Member, ASME Systems and Design Group (SDG) Operating Board**, in charge of Conference operations. (2012-2014),

**IPC Member**, 15th International Conference on System Theory, Control, Romania, 2011, 2013.

**Member at Large , ASME Systems and Design Group OpCom.** (2008-2014),

**Director AACC BOD** (2013-15), **Alternate Director** (2011-2013),

**Program Chair**, DSCC 2009, ASME Dynamic Systems and Control Conference, This is the second round of the conference I helped initiate.

**Elected Member, ASME-COD** (Conference of Divisions), in charge of the Technical Publications, (2008-2011).

**Member - DSCD Advisory Committee**, ASME Dynamic Systems and Control Division (07-10),

**Member, Conferences Committee**, ASME – DSCD (2007-2010).

**Member**, IFAC Technical Committee on *Linear Control Systems*, **TC 2.2**, (2006-present)

**Member**, IFAC Technical Committee on *Distributed Parameter Systems*, **TC 2.6**, (2012-present)

**Member**, IFToMM (Int. Federation of Mechanism and Machinery) Technical Committee for Mechatronics (1995-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)

Key achievements during this period:

- Introduced and obtained consensus support for society-wide elections of ExCom members- This election process is in practice today. Two-tier election operation brings forward the candidates that are favored by the peers.
- Started a new tradition, Nyquist lecture, which is repeated annually. It recognizes distinguished researchers by providing an annual lecturing forum to all the attendees of ASME Dynamic Systems and Controls Conference.
- Spearheaded the new DSCD Conference (now called the Dynamic Systems and Controls Conference-DSCC) initiative. This is all-volunteer activity, and the first one took place in Fall 2008). I was the General Chair for the sixth of DSCC series in 2013 ) at Stanford Univ.

**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 (2007-08),

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 **IEEE/ASME Conference on Control Applications CCA '97**, Workshop Chairman.

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**

1994-2001 Member, Vibration and Noise Technical Committee I of DSC Division/ASME

2002-present Member, Mechatronics Technical Committee of DSC Division/ASME

2002-present Vibration Control of Smart Structures Technical Committee/ DSC Division/ASME

1991-99 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 Modeling and Simulation

### ***University services at UCONN (last 5 years only)***

Vice President's Research Integrity Committee (2010)

President's Technology Transfer and Commercialization Committee (UCONN)

Dean's Council on Promotion, Tenure and Reappointment (2009-2010)

Promotion, Tenure and Re-appointment Committee, ME Dept. (Chair and member) (2011-2013)

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 4 hires in the last 3 years, was the chair of the committee in one of the searches)

### ***Mission critical and consensus building services in UCONN- ME Department:***

**Chair – Systems and Mechanics Group, UCONN Mechanical Engineering Dept.** (entails 12 tenured and 2 tenure track faculty members in the Department)

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

## ***Workshops Organized (for local industry)***

### **Automation for Manufacturing (1984-88) twice yearly**

Activity was arranged especially for United Technologies Corporation engineers (Pratt and Whitney, Otis, Hamilton, Sikorsky etc.). 1-week long on-campus, hands-on practice for variety of aspects from Programmable Logic Controllers (PLC), Milling CNC programming, Servomotor design. 30-40 participants. State-of-the-art advances in automation. Completely discretionary fund raising activity.

## ***Frequent Reviewer for***

ASCE J. of Engineering Mechanics

ASME Dynamic Systems Measurement and Control

ASME J. of Vibration and Acoustics

ASME Tran. of Mechanical Design

ASME, J. of Manufacturing Science and Technology

Automatica

Czech Science Foundation Proposal Reviewer

DoD – Army Research Office

European Control Journal

European Journal of Control

IEE Control Systems Theory and Applications

IEEE Tran. Control Systems Technology

IEEE Tran. On Systems, Man and Cybernetics

IEEE Transaction on Automatic Control

Int. J. of Machine Tools and Manufacture

Int. J. of Vehicle Dynamics

International Journal of Control

J. of Society of Experimental Mechanics

J. of Vibration and Control

King Faisal University

Louisiana Board of Regents

National Science Foundation

SIAM Optimization and Control

Systems and Control Letters

Univ. of Connecticut Research Foundation

Hong Kong Research Council



**Graduate students (Completed):** Blue underlined are faculty members

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 Auto-tuning 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.
<u>Nader Jalili</u> , Ph.D., 1998	Optimum Vibration Suppression of Flexible Structures Using Delayed Feedback ( <a href="#">Northeastern Univ. Boston</a> )
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.
<u>Rifat Sipahi</u> , 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. ( <a href="#">Northeastern Univ. Boston</a> )
<u>Ali Fuat Ergenc</u> , Ph.D., 2007	A Novel Method of ICSI: Rotationally Oscillating Drill, Design, Control and Monitoring. ( <a href="#">Technical Univ. of Istanbul, Turkey</a> )

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
Emre Cavdaroglu, M.S., 2008	Control of Time-Delayed Systems with Utilization of "Delay Scheduling" Technique
Paul McCullough, M.S., 2009	A Lyapunov Treatment of Swarm Coordination Under Conflict
Mark Bacon, M.S., 2010	Robust Region Tracking in Multi-Agent Systems Utilizing Sliding Mode Control: Theory and Applications
John Diaz, M.S., 2011	Visual Feedback Control and Rotational Motion Tracking
<a href="#">Rudy Cepeda Gomez</a> , Ph. D., 2012	Exact and Exhaustive Stability Analysis of Linear Consensus Protocols with Time-Delay (Univ. Industrial de Santander, Bucharamanga, Colombia)
Zhenyu Zhang, Ph.D., 2012	Control Design and Analysis for Rotationally Oscillating Drill (Ros-Drill), with Low-Resolution Feedback

***Graduate students (present):***

Qingbin Gao, Ph.D. (2015)	Sign Inverting Control (SIC) for Multiple delay Systems
Umut Zalluhoglu, Ph.D. (2016)	Thermoacoustic Instability and Time-Delayed Systems Perspective
Ayhan Kammer, Ph.D. (2016)	Rotating Blades' Interference Dynamics with Casing in Gas Turbines

## CITATIONS LIST FROM GOOGLE SCHOLAR (Dec. 2014)

(Top 8 articles)



### Nejat Olgac

Prof. of Mechanical Engineering,  
University of  
Controls, Dynamics, Time Delayed  
Systems, Vibration, Thermoacoustic  
Instability

#### Google Scholar

Citation indices	All	Since 2010
Citations	3317	1534
h-index	33	21
i10-index	68	44

Title	1–20	Cited by	Year
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N Olgac, R Sipahi Automatic Control, IEEE Transactions on 47 (5), 793-797			
<a href="#">A novel active vibration absorption technique: delayed resonator</a>		176	1994
N Olgac, BT Holm-Hansen Journal of Sound and Vibration 176 (1), 93-104			
<a href="#">Robust output tracking control of nonlinear MIMO systems via sliding mode technique</a>		135	1992
H Elmali, N Olgac Automatica 28 (1), 145-151			
<a href="#">Complete stability robustness of third-order LTI multiple time-delay systems</a>		132	2005
R Sipahi, N Olgac Automatica 41 (8), 1413-1422			
<a href="#">Sliding mode control with perturbation estimation (SMCPE): a new approach</a>		126	1992
H ELMALI, N OLGAC International Journal of control 56 (4), 923-941			
<a href="#">Implementation of sliding mode control with perturbation estimation (SMCPE)</a>		102	1996
H Elmali, N Olgac Control Systems Technology, IEEE Transactions on 4 (1), 79-85			
<a href="#">Active vibration control of distributed systems using delayed resonator with acceleration feedback</a>		93	1997
N Olgac, H Elmali, M Hosek, M Renzulli Journal of dynamic systems, measurement, and control 119 (3), 380-389			
<a href="#">Stability robustness analysis of multiple time-delayed systems using "building block" concept</a>		84	2007
H Fazelinia, R Sipahi, N Olgac Automatic Control, IEEE Transactions on 52 (5), 799-810			