

CURRICULUM VITAE

1. **Name Surname:** Vasfi Eldem

2. **Date of Birth:** 11.11.1947

3. **Affiliation:** Okan University

4. **Education:**

Degree	Department	University	Year
Bachelor		ITUMMF	1972
Master		Bosphorus University	1974
Ph.D.		Brown University	1979

5. **Academic Titles:**

Title	Discipline	University	Year
Assistant Professor		.	
Associate Professor			
Professor	Applied Mathematics	Gebze Institute of Technology	2004

6. **Supervised Master and Ph.D. Thesis**

PhD Thesis supervised

1. *Structural properties of linear matrix inequalities*, PhD student Şeyhan Şahin, **Gebze Institute of Technology**, 2006- 2011.
2. *Stability of bimodal systems*, PhD student Gökhan Şahan, **Gebze Institute of Technology**, 2007-2013
3. *Stability of bimodal Systems with discontinuous vector fields*, PhD student Işıl Öner, **Gebze Institute of Technology**, 2008- 2014.

6.1 **The Subject of the Master Thesis**

Optimization of Wool Blending

6.2 **The Subject of the Ph.D. Thesis**

Parameter Insensitive Pole Placement

7) **Publications**

7.1 International Publications

Refereed Journal Articles

1. G. Şahan, V. Eldem, Well posedness conditions for planar conewise linear systems, **Transactions of The Institute of Measurement and Control**, Vol.35/4, pp. 2093 - 2099, May 2019.
2. Öner, I. V. Eldem, The necessary and sufficient conditions for global asymptotic stability of a class of bimodal systems, **IMA Journal of Control and Information**, Vol.35/4, pp. 1129-1155, December, 2018.
3. Eldem, V. and G. Şahan, The effect of coupling conditions on the stability of bimodal systems in R3, **System and Control Letters**, Vol. 96, pp. 141 - 150, October 2016.
4. G. Şahan, V. Eldem, Well posedness conditions for bimodal piecewise affine systems, **System and Control Letters**, Vol.83, pp. 9 - 18, September 2015.
5. Eldem, V., I. Öner, A note on the stability of bimodal systems in R3 with discontinuous vector fields, **International Journal of Control**, Vol.88, No:4, pp. 729-744, 2015.
6. Eldem, V., G. Şahan, Structure and stability of bimodal systems in R3 : Part 1, **Applied and Computational Mathematics**, Vol.13, No:2, pp. 206-229, 2014.
7. Eldem, V., Ş. Şahin, On the feasibility problem of linear matrix inequalities, **Applied and Computational Mathematics**, Vol.10, No:3, pp.514-528, 2011.
8. Başer, U., V. Eldem, Almost diagonalization by dynamic output feedback with internal stability, **International Journal of Control Control**, vol. 70, No. 1, sf. 51-70, 1998.
9. Eldem, V., H. Özbay, H. Selbuz, K. Özçaldıran, Partial disturbance rejection with internal stability and H-infinity norm bound, **SIAM J. Contr. and Optimization**, vol. 36, No. 1, sf. 180-192, 1998.
10. Özçaldıran, K., V. Eldem, A complete classification of minimal realizations of nonsingular and strictly proper transfers under similarity transformations, **Automatica**, vol. 33, No. 5, sf. 835-850, 1997.
11. Eldem, V., Decoupling through specified input-output channels with internal stability, **Automatica**, vol. 32, No. 3, sf. 379-384, 1996.
12. Ruiz, J., P. Zagalak, V. Eldem, On the Morgan Problem with stability, **Kybernetika**, vol. 32, No. 5, sf. 425-441, 1996.
13. Eldem, V., The solution of diagonal decoupling problem by dynamic output feedback and constant precompensator: The general case, **IEEE Trans. Auto. Contr.**, vol. AC-39, sf. 503-511, March, 1994.
14. Eldem, V., H. Selbuz, On the general solution of the state deadbeat control problem, **IEEE Trans. Auto. Contr.**, vol. AC-39, sf. 1002-1006, May, 1994.
15. Duyar, A., V. Eldem, W. C. Merrill, T.-H. Guo, A simplified dynamic model of the Space Shuttle Main Engine, **ASME J. Dynamic Systems, Measurement and Control**, vol. 116, No. 4, sf. 815-819, December, 1994.
16. Duyar, A., V. Eldem, W. C. Merrill, T.-H. Guo, Fault detection and diagnosis in propulsion systems: A fault parameter estimation approach, **AIAA Journal of Guidance, Control and Dynamics**, vol. 17, No. 1, sf. 104-108, 1994.
17. Eldem, V. Feedback realization of open loop diagonalizers, **Kybernetika**, vol. 29, sf. 406-416, 1993.
18. Eldem, V., A. Duyar, Parametrization of multivariable systems using output injections: Alpha-canonical forms, **Automatica**, vol. 29, sf. 1127-1131, 1993.
19. Duyar, A., V. Eldem, W.C. Merrill, T.-H. Guo, State space representation of the open loop dynamics of the Space Shuttle Main Engine, **ASME J. Dynamic Systems, Measurement and Control**, vol. 113, No. 4, sf. 684-690, 1991.
20. Eldem, V., A. B. Özgüler, A solution to diagonalization problem by constant precompensator and dynamic output feedback, **IEEE Trans. Automat. Contr.**, vol. AC-34, No. 10, sf. 1061-1067, 1989.

21. Özgüler, A. B., V. Eldem, Set of open-loop block-diagonalizers of transfer matrices, **International Journal of Control**, vol. 49, No. 1, sf. 161-168, 1989.
22. Özgüler, A. B., V. Eldem, On diagonalization by dynamic output feedback, **Kybernetika**, vol. 25, No. 1, sf. 35-40, 1989.
23. Eldem, V., A. B. Özgüler, Disturbance decoupling problems by measurement feedback: A characterization of all solutions and fixed modes, **SIAM J. Contr. and Optimization**, vol. 26, No. 1, sf. 168-185, 1988.
24. Eldem, V., N. Yıldızbayrak, Parameter and structure identification of linear multivariable systems, **Automatica**, vol. 24, No.3, sf. 365-373, 1988.
25. Selbuz, H., V. Eldem, Kleinman's controller: A further stabilizing property, **International Journal of Control**, vol. 48, No. 6, sf. 2297-2301, 1988.
26. Selbuz, H., V. Eldem, Stabilizing and dead-beat properties of receding-horizon controllers, **International Journal of Control**, vol. 45, No. 6, sf. 1931-1939, 1987.
27. Özgüler, A. B., V. Eldem, Disturbance decoupling problems via dynamic output feedback, , **IEEE Trans. Automat. Contr.**, vol. AC-30, No. 8, sf. 756-764, 1985.
28. Başer, U., V. Eldem, A new set of necessary and sufficient conditions for a system to be prime, , **IEEE Trans. Automat. Contr.**, vol. AC-29, No. 12, sf. 1091-1095, 1984.
29. Eldem, V., W. A. Wolovich, Parameter insensitive pole assignment for scalar input systems, , **IEEE Trans. Automat. Contr.**, vol. AC-28, No. 2, sf. 218-220, 1983.

7.2 International Oral Presentations & Written Bulletins

Conference Papers

1. Eldem, V. and I. Oner, *Classification of the trajectories of bimodal systems in R_3* , **Abstracts of 4th International Conference on Control and Optimization with Industrial Applications**, pp.37, Borovets, Bulgaria, 10-12 July, 2013.
2. Eldem, V. and Ş. Şahin, *Structural Properties of Linear Matrix Inequalities*, **Abstracts of the IV Congress of the Turkic World Mathematical Society**, pp.37, Bakü, Azerbeycan, July 1-3 , 2011.
3. Eldem, V. and G. Şahan, *On the Stability of Bimodal Systems in R_3* , **Proceedings of 48th IEEE Conference on Decision and Control**, pp.2492-2496, Şangay, Republic of China, December 16-18 , 2009.
4. Eldem, V. and K. Özçaldıran, *A reduction algorithm for LMI*, **European Control Conference Proceedings** , pp. 2492-2496, Kos, Grece, July 2-5, 2007.
5. Albaş, E., V. Eldem, and F. Atay, *Identification of compressor faults through model based fault detection approach*, **Proceedings of the ICEC'2000, International Compressor Engineering Conference**, pp. 539-546, Purdue University, West Lafayette, IN, USA, July 25-28, 2000.
6. Atay, F. M., Albaş, E. and V. Eldem, *Modelling and identification of saturation in electrical machinery*, **Proceedings of the DYMAC'99, Integrating Dynam-**

ics, Condition Monitoring and Control for the 21st Century, Conference Proceedings 1-3, pp. 343-347, Manchester, UK, September 1999.

7. Eldem, V., A. J. Wetherilt, S. Parmaksız, E. Albaş, H. Çeçen and A. Duyar, *On the identification of three phase induction motors*, **European Control Conference**, Paper F1056-1, Karlsruhe, Germany, August 31-September 3, 1999.

8. Javier, R., P. Zagalak and V. Eldem, *On the problem of decoupling*, **Proceedings of IFAC Conference on System Structure and Control**, Nantes, France, pp. 611-616, 5-7 July, 1995.

9. Başer, U. and V. Eldem, *Diagonal decoupling problem with internal stability : A solution by dynamic output feedback and constant precompensator*, **Proceedings of IFAC Conference on System Structure and Control**, Nantes, France, pp. 605-610, 5-7 July, 1995.

10. Özçaldıran, K. and V. Eldem, *A canonical form under similarity of a class of minimal realizations*, **Proceedings of IFAC Conference on System Structure and Control**, Nantes, France, pp. 584-589, 5-7 July, 1995.

11. Özçaldıran, K., V. Eldem and E. Tatar, *A structural result on static output feedback*, **Proceedings of 34th IEEE Conference on Decision and Control**, pp. 1346-1351, New Orleans, Louisiana, USA, December, 1995.

12. Eldem, V., *On partial disturbance rejection by measurement feedback with internal stability*, **Proceedings of the 33rd IEEE Conference on Decision and Control**, Orlando, USA, pp. 853-854, December 14-16, 1994.

13. Eldem, V., *Feedback realization of open loop diagonalizers*, **Proceedings of the Second IFAC Workshop on System Structure and Control**, pp. 16-19, Prague, Czechoslovakia, September 3-5, 1992.

14. Duyar, A., V. Eldem and R. Saravanan, *A system identification approach for failure detection and diagnosis*, **Proceedings of the IEEE Workshop on Intelligent Motion Control**, pp. 61-64, Istanbul, Turkey, August 1990.

15. Eldem, V. and A. Duyar, *On the identification of piece-wise linear and bilinear Systems*, **Proceedings of the ASME Winter Annual Meeting**, Dallas, Texas, November, 1990.

16. Eldem, V. and A. B. Özgüler, *On the role of constant precompensators in decoupling problems*, **Preprints of IMACS International Symposium on System Modeling and Simulation**, pp. 168-173, Cetraro, Italy, September 18-21, 1988.

17. Eldem, V., A. B. Özgüler, and U. Başer, *On the minimal Mc Millan Degree solutions of disturbance decoupling problems via measurement feedback*, **Proceedings of Proceedings of IFAC/IMACS International Symposium on Simulation of Control Systems**, pp. 209-212, Vienna, Austria, September 22-26, 1986.

18. Eldem, V. and A. B. Özgüler, *A characterization result for disturbance decoupling*, **Proceedings of the 25th IEEE Conference on Decision and Control**, pp. 1312-1316, Athens, Greece, 1986.

7

19. Selbuz, H. and V. Eldem, *A further stabilizing property of receding-horizon controllers*, **Proceedings of the 25th IEEE Conference on Decision and Control**, pp. 705-706, Athens, Greece, 1986.

7.3 International Books / Chapters of Books

7.4 National Journal Publications

7.5 National Oral Presentations & Written Bulletins

1. Eldem, V., A. B. Özgüler, *Decoupling problem with specified input-output channels*, **Proceedings of National Conference on Mechanics**, pp. 89-93, Magosa, Turkish Republic of Northern Cyprus, 8-12 Eylül, 1993.

2. Gökmen, B., V. Eldem, A. J. Wetherilt and A. Duyar , *MCM : A new technology in predictive maintenance*, **Proceedings of the National Automatic Control Conference**, pp. 841-847, ODT• U, Ankara, Turkey, September 9-11 , 2002.

3. Eldem, V. and U. Başer, *Regulation and disturbance rejection*, **Proceedings of the 4th National Automatic Control Conference**, pp. 145-155, Istanbul, Turkey, November 11-13, 1987.

4. Eldem, V. and N. Yıldızbayrak, *Structure and parameter identification for multivariable systems*, **Proceedings of the National Conference on Electrical Engineering**, pp.841-846, Adana, Turkey, 1985.

5. Selbuz, H. and V. Eldem, *The dead-beat properties of receding-horizon controller in linear systems*, **Proceedings of the National Conference on Electrical Engineering**, pp.836-840, Adana, Turkey, 1985.

6. Başer, U. and V. Eldem, *The necessary and sufficient conditions for a system to be prime*, **Proceedings of the Second National Automatic Control Conference**, pp.169-177, Istanbul, Turkey, December, 1983.

7. Eldem, V., Ö. Hortaçsu, *Optimization of wool blending*, **Proceedings of the Second National Operations Research Conference**, Ankara, Turkey, 1976.

7.6 National Books / Chapters of Books

7.7 Other Publications

Reports

1. Eldem, V., H. Selbuz, A. H. Bilge, *Bearings-Only Target Tracking* , **Tübitak, MAM, Internal Report**, November 1993.

2. Duyar, A., V. Eldem, M. Kurtkaya, *Development of a fault detection and diagnostic system for rocket engines*, **Final Report to Pratt and Whitney Inc.**, 1991.
3. Duyar, A., V. Eldem, *Development of a parameter and structure estimation technique for system identification of the Space Shuttle Main Engine dynamics*, **NASA Contractor Report**, NASA Lewis Research Center, 1990.
4. Eldem, V., H. Selbuz, *Price estimation by input-output tables*, **Technical Report to State Ministry of Republic of Turkey**, 1987.

8. Projects

- **Optimization of Plastic Injection Moulding, 2013-2014**, In collaboration with Okan University and Ecoplas Company, **Senior Research Scientist**
- **Motor Quality Monitor (MQM) 1997-1999**, **Senior Research Scientist**. MQM received **Tüsiad-Tübitak-TTGV Grand Technology Award in 1999**.
- **Motor Condition Monitor (MCM) 1999-2004**, **Research Director**, MCM is chosen among the best 40 products in the year 2000 by **Control Engineering Journal**.
- **Development of a parameter and structure estimation technique for system identification of the Space Shuttle Main Engine Dynamics**, **Research Director**.

9. Administrative Tasks:

Vice Rector of Gebze Institute of Technology, 2005-2010

Department Head, Department of Mathematics, Gebze Institute of Technology, 2010-2011.

10. Occupational Memberships:

11. Awards

- **Sedat Simavi Science Award, 1994**
- **Tübitak, Marmara Research Center Prize for Merit, 1994**