

Prof. Müjde Güzelkaya

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: ABB-1041-2020

ScopusID: 6602406428

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Education Information

Doctorate, İstanbul Technical University, Elektrik-Elektronik Fakültesi, Elektrik Mühendisliği Bölümü, Turkey 1985 - 1990

Undergraduate, İstanbul Technical University, Elektrik-Elektronik Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, Turkey 1978 - 1982

Foreign Languages

English

Dissertations

Doctorate, Çok girişli sistemlerde sınırlı sonlu zaman kontrolü, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Elektrik Mühendisliği Bölümü, 1990

Research Areas

Technical Sciences, Information Systems, Communication and Control Engineering, Control and System Engineering, Mathematical Techniques, Optimal Control

Academic Titles / Tasks

Professor, İstanbul Technical University, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 2003

- Continues

Associate Professor, İstanbul Technical University, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 1996 - 2003

Assistant Professor, İstanbul Technical University, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 1990 - 1996

Research Assistant, İstanbul Technical University, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 1983 - 1990

Published journal articles indexed by SCI, SSCI, and AHCI

- I. A robust fractional-order controller design with gain and phase margin specifications based on delayed Bode's ideal transfer function
Yumuk E., Güzelkaya M., Eksin İ.
Journal of the Franklin Institute, vol.359, no.11, pp.5341-5353, 2022 (SCI-Expanded)
- II. Optimal fractional-order controller design using direct synthesis method
Yumuk E., Güzelkaya M., Eksin İ.
IET CONTROL THEORY AND APPLICATIONS, vol.14, no.18, pp.2960-2967, 2020 (SCI-Expanded)
- III. Fusion of inverse optimal and model predictive control strategies
Ulusoy L., Güzelkaya M., Eksin İ.
TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.42, no.6, pp.1122-1134, 2020 (SCI-Expanded)
- IV. Analytical fractional PID controller design based on Bode's ideal transfer function plus time delay
Yumuk E., Güzelkaya M., Eksin İ.
ISA Transactions, vol.91, pp.196-206, 2019 (SCI-Expanded)
- V. Design of an integer order proportional-integral/proportional-integral-derivative controller based on model parameters of a certain class of fractional order systems
Yumuk E., Güzelkaya M., Eksin İ.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL ENGINEERING, vol.233, no.3, pp.320-334, 2019 (SCI-Expanded)
- VI. Inverse optimal controller based on extended Kalman filter for discrete-time nonlinear systems
Almobaied M., Eksin İ., Güzelkaya M.
OPTIMAL CONTROL APPLICATIONS & METHODS, vol.39, no.1, pp.19-34, 2018 (SCI-Expanded)
- VII. An inverse controller design method for interval type-2 fuzzy models
Kumbasar T., EKSİN İ., GÜZELKAYA M., Yesil E.
SOFT COMPUTING, vol.21, no.10, pp.2665-2686, 2017 (SCI-Expanded)
- VIII. Improved cascade controller design methodology based on outer-loop decomposition
Cakiroglu O., Güzelkaya M., EKSIN İ.
TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.37, no.5, pp.623-635, 2015 (SCI-Expanded)
- IX. General derivation and analysis for input-output relations in interval type-2 fuzzy logic systems
Aliasghary M., EKSİN İ., Güzelkaya M., KUMBASAR T.
SOFT COMPUTING, vol.19, no.5, pp.1283-1293, 2015 (SCI-Expanded)
- X. An active fault tolerant control method based on support vector machines
Ortac-Kabaoglu R., EKSİN İ., YESIL E., Güzelkaya M.
JOURNAL OF INTELLIGENT & FUZZY SYSTEMS, vol.29, no.5, pp.1761-1768, 2015 (SCI-Expanded)
- XI. Exact analytical inversion of TSK fuzzy systems with singleton and linear consequents
Ulu C., Güzelkaya M., EKSIN İ.
INTERNATIONAL JOURNAL OF APPROXIMATE REASONING, vol.55, no.6, pp.1357-1368, 2014 (SCI-Expanded)
- XII. A closed form type reduction method for piecewise linear interval type-2 fuzzy sets
Ulu C., Güzelkaya M., EKSIN İ.
INTERNATIONAL JOURNAL OF APPROXIMATE REASONING, vol.54, no.9, pp.1421-1433, 2013 (SCI-Expanded)
- XIII. Granular type-2 membership functions: A new approach to formation of footprint of uncertainty in type-2 fuzzy sets
Ulu C., Güzelkaya M., EKSIN İ.
APPLIED SOFT COMPUTING, vol.13, no.8, pp.3713-3728, 2013 (SCI-Expanded)
- XIV. Exact inversion of decomposable interval type-2 fuzzy logic systems
Kumbasar T., EKSİN İ., Güzelkaya M., YESIL E.
INTERNATIONAL JOURNAL OF APPROXIMATE REASONING, vol.54, no.2, pp.253-272, 2013 (SCI-Expanded)
- XV. Online tuning of fuzzy PID controllers via rule weighing based on normalized acceleration
Karasakal O., Güzelkaya M., EKSİN İ., YESIL E., KUMBASAR T.

- ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.26, no.1, pp.184-197, 2013 (SCI-Expanded)
- XVI. **Type-2 fuzzy model based controller design for neutralization processes**
 Kumbasar T., EKSİN İ., Güzelkaya M., YESİL E.
 ISA TRANSACTIONS, vol.51, no.2, pp.277-287, 2012 (SCI-Expanded)
- XVII. **Adaptive fuzzy model based inverse controller design using BB-BC optimization algorithm**
 Kumbasar T., EKSİN İ., Güzelkaya M., YESİL E.
 EXPERT SYSTEMS WITH APPLICATIONS, vol.38, no.10, pp.12356-12364, 2011 (SCI-Expanded)
- XVIII. **Interval type-2 fuzzy inverse controller design in nonlinear IMC structure**
 Kumbasar T., EKSİN İ., Güzelkaya M., YESİL E.
 ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.24, no.6, pp.996-1005, 2011 (SCI-Expanded)
- XIX. **An error-based on-line rule weight adjustment method for fuzzy PID controllers**
 Karasakal O., Güzelkaya M., EKSİN İ., YESİL E.
 EXPERT SYSTEMS WITH APPLICATIONS, vol.38, no.8, pp.10124-10132, 2011 (SCI-Expanded)
- XX. **A rule base modification scheme in fuzzy controllers for time-delay systems**
 Genc H. M., YESİL E., EKSİN İ., Güzelkaya M., TEKİN O. A.
 EXPERT SYSTEMS WITH APPLICATIONS, vol.36, no.4, pp.8476-8486, 2009 (SCI-Expanded)
- XXI. **Linear time-varying sliding surface design based on co-ordinate transformation for high-order systems**
 Tokat S., Eksin İ., Güzelkaya M.
 TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.31, no.1, pp.51-70, 2009 (SCI-Expanded)
- XXII. **Big Bang Big Crunch Optimization Method Based Fuzzy Model Inversion**
 KUMBASAR T., GÜZELKAYA M.
 Lecture Notes in Computer Science, pp.732-740, 2008 (SCI-Expanded)
- XXIII. **Sliding mode control of high order systems using a constant nonlinear sliding surface on a transformed coordinate axis**
 Tokat S., Eksin İ., Güzelkaya M.
 JOURNAL OF VIBRATION AND CONTROL, vol.14, no.6, pp.909-927, 2008 (SCI-Expanded)
- XXIV. **Set-point regulator with blending mechanism**
 Yesil E., Güzelkaya M., EKSİN İ., TEKİN O. A.
 INSTRUMENTATION SCIENCE & TECHNOLOGY, vol.36, no.1, pp.1-17, 2008 (SCI-Expanded)
- XXV. **Online tuning of set point regulator with a blending mechanism using PI controller**
 YEŞİL E., Güzelkaya M., EKSİN İ., TEKİN Ö. A.
 Turkish Journal of Electrical Engineering and Computer Sciences, Elektrik, vol.16, no.2, pp.143-157, 2008 (SCI-Expanded)
- XXVI. **Cross-coupled ratio control structure**
 Yesil E., Guzelkaya M., EKSİN İ., TEKİN O. A.
 INSTRUMENTATION SCIENCE & TECHNOLOGY, vol.35, no.5, pp.523-536, 2007 (SCI-Expanded)
- XXVII. **Implementation of a New Self Tuning Fuzzy PIDController on PLC**
 KARASAKAL O., YEŞİL E., GÜZELKAYA M., Eksin İ.
 Turkish Journal of Electrical engineering, vol.13, no.2, pp.277-286, 2005 (SCI-Expanded)
- XXVIII. **Self tuning fuzzy PID type load and frequency controller**
 Yesil E., Guzelkaya M., Eksin I.
 ENERGY CONVERSION AND MANAGEMENT, vol.45, no.3, pp.377-390, 2004 (SCI-Expanded)
- XXIX. **Self-tuning of PID-type fuzzy logic controller coefficients via relative rate observer**
 Guzelkaya M., Eksin I., YESİL E.
 ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.16, no.3, pp.227-236, 2003 (SCI-Expanded)
- XXX. **Design of a sliding mode controller with a nonlinear time-varying sliding surface**
 Tokat S., Eksin I., GUZELKAYA M., Soylemez M. T.
 TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.25, no.2, pp.145-162, 2003 (SCI-Expanded)

- XXXI. **A new design method for sliding mode controllers using a linear time-varying sliding surface**
Tokat S., Eksin I., Guzelkaya M.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL
ENGINEERING, vol.216, pp.455-466, 2002 (SCI-Expanded)
- XXXII. **A new methodology for deriving the rule-base of a fuzzy logic controller with a new internal structure**
Eksin I., Guzelkaya M., GURLEYEN F.
ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, vol.14, no.5, pp.617-628, 2001 (SCI-Expanded)
- XXXIII. **A new methodology for designing a fuzzy logic controller and PI PD blending mechanism**
Guzelkaya M., EKSİN İ., GÜRLEYEN F.
JOURNAL OF INTELLIGENT & FUZZY SYSTEMS, vol.11, no.1, pp.85-98, 2001 (SCI-Expanded)
- XXXIV. **Decoupling in singular systems A polynomial equation approach**
GÖREN A. L., Guzelkaya M.
KYBERNETIKA, vol.32, no.2, pp.185-198, 1996 (SCI-Expanded)

Articles Published in Other Journals

- I. **A Design Methodology and Analysis for Interval Type 2 Fuzzy PI PD Controllers**
MORTAZA A., EKSİN İ., GÜZELKAYA M., KUMBASAR T.
International Journal Of Innovative Computing Information And Control, vol.10, pp.4215-4230, 2013 (Scopus)
- II. **Type-2 fuzzy model inverse controller design based on BB-BC optimization method**
Kumbasar T., Eksin İ., Guzelkaya M., Yesil E.
IFAC Proceedings Volumes (IFAC-PapersOnline), vol.44, pp.5308-5313, 2011 (Scopus)

Supported Projects

- Guzelkaya M., Project Supported by Higher Education Institutions, Lineer Ardıllara Sahip Takagi Sugeno Kang Bulanık Sistemlerin Birebir Tersinin Alınması, 2013 - 2018
- Guzelkaya M., Project Supported by Higher Education Institutions, ENVANTÖR KONTROL SİSTEMLERİNDE ORAN KONTROL PROBLEMİ, 2009 - 2018

Metrics

- Publication: 85
Citation (WoS): 713
Citation (Scopus): 1055
H-Index (WoS): 14
H-Index (Scopus): 15

Non Academic Experience

- İstanbul Teknik Üniversitesi
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İstanbul Teknik Üniversitesi