

## Dr. Öğr. Üyesi MUHAMMET ÜNAL

### Kişisel Bilgiler

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### Eğitim Bilgileri

Doktora, Marmara Üniversitesi, Fen Bilimleri Enstitüsü, Bilgisayar-Kontrol Eğitimi (YI) (Tezli), Türkiye 2008 - 2014

Yüksek Lisans, Marmara Üniversitesi, Fen Bilimleri Enstitüsü, Elektronik Ve Bilgisayar Eğitimi (YI) (Tezli), Türkiye 2005 - 2008

Lisans, Marmara Üniversitesi, Teknik Eğitim Fakültesi, Elektronik ve Bilgisayar Eğitimi Bölümü, Türkiye 2001 - 2005

### Yaptığı Tezler

Doktora, Sinyal işleme ve genetik-yapay sinir ağları ile rulman arızalarının teşhisi, Marmara Üniversitesi, Fen Bilimleri Enstitüsü, Bilgisayar-Kontrol Eğitimi (YI) (Tezli), 2014

Yüksek Lisans, PID kontrolörün karınca kolonisi / genetik algoritma tabanlı optimizasyonu ve Gunt RT 532 basınç prosesinin kontrolü, Marmara Üniversitesi, Fen Bilimleri Enstitüsü, Elektronik Ve Bilgisayar Eğitimi (YI) (Tezli), 2008

### Akademik Unvanlar / Görevler

Yrd. Doç. Dr., Marmara Üniversitesi, Teknoloji Fakültesi, Mekatronik Mühendisliği Bölümü, 2015 - Devam Ediyor  
Araştırma Görevlisi, Marmara Üniversitesi, Teknik Eğitim Fakültesi, Elektronik ve Bilgisayar Eğitimi Bölümü, 2005 - Devam Ediyor

Araştırma Görevlisi, Marmara Üniversitesi, Teknoloji Fakültesi, Mekatronik Mühendisliği Bölümü, 2015 - 2015

### SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **Development of comprehensive heterodyne effect based inspection (CHEBI) method for inclusive monitoring of cracks**  
Baghalian A., Tashakori S., Senyurek V. Y., ÜNAL M., McDaniel D., Tansel I. N.  
MEASUREMENT, cilt.128, ss.89-95, 2018 (SCI-Expanded)
- II. **Implementation of heterodyning effect for monitoring the health of adhesively bonded and fastened composite joints**  
Tashakori S., Baghalian A., Senyurek V. Y., ÜNAL M., McDaniel D., Tansel I. N.  
APPLIED OCEAN RESEARCH, cilt.72, ss.51-59, 2018 (SCI-Expanded)
- III. **Fault Diagnosis of Rolling Bearings Using Data Mining Techniques and Boosting**  
Ünal M., Sahin Y., Onat M., Demetgul M., Küçük H.  
JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME, cilt.139, sa.2, 2017 (SCI-Expanded)
- IV. **Contact and non-contact approaches in load monitoring applications using surface response to excitation method**  
Tashakori S., Baghalian A., ÜNAL M., Fekrmandi H., Senyurek V. Y., McDaniel D., Tansel I. N.

MEASUREMENT, cilt.89, ss.197-203, 2016 (SCI-Expanded)

- V. **A novel approach for classification of loads on plate structures using artificial neural networks**  
Fekrmandi H., ÜNAL M., Neva S. R., Tansel I. N., McDaniel D.  
MEASUREMENT, cilt.82, ss.37-45, 2016 (SCI-Expanded)
- VI. **Fault diagnosis of rolling bearings using a genetic algorithm optimized neural network**  
Ünal M., Onat M., Demetgul M., Küçük H.  
MEASUREMENT, cilt.58, ss.187-196, 2014 (SCI-Expanded)
- VII. **Use of Artificial Neural Networks for Modelling of Seam Strength and Elongation at Break**  
YILDIZ Z., Dal V., ÜNAL M., YILDIZ K.  
FIBRES & TEXTILES IN EASTERN EUROPE, cilt.21, sa.5, ss.117-123, 2013 (SCI-Expanded)
- VIII. **Use of Artificial Neural Networks for Modelling of Seam Strength and Elongation at Break FIBRES TEXTILES in Eastern Europe**  
YILDIZ Z., DAL V., ÜNAL M., YILDIZ K.  
FIBRES & TEXTILES in Eastern Europe, cilt.5, ss.117-123, 2013 (SCI-Expanded)
- IX. **Genetic Algorithm**  
ÜNAL M., AK A., TOPUZ V., ERDAL H.  
OPTIMIZATION OF PID CONTROLLERS USING ANT COLONY AND GENETIC ALGORITHMS, cilt.449, ss.19-29, 2013 (SCI-Expanded)
- X. **Optimization of PID Controllers Using Ant Colony and Genetic Algorithms Introduction**  
ÜNAL M., AK A., TOPUZ V., ERDAL H.  
OPTIMIZATION OF PID CONTROLLERS USING ANT COLONY AND GENETIC ALGORITHMS, cilt.449, ss.1-3, 2013 (SCI-Expanded)
- XI. **Ant Colony Optimization (ACO)**  
ÜNAL M., AK A., TOPUZ V., ERDAL H.  
OPTIMIZATION OF PID CONTROLLERS USING ANT COLONY AND GENETIC ALGORITHMS, cilt.449, ss.31-35, 2013 (SCI-Expanded)
- XII. **An Application for Process System Control**  
ÜNAL M., AK A., TOPUZ V., ERDAL H.  
OPTIMIZATION OF PID CONTROLLERS USING ANT COLONY AND GENETIC ALGORITHMS, cilt.449, ss.37-68, 2013 (SCI-Expanded)
- XIII. **Artificial Neural Networks**  
ÜNAL M., AK A., TOPUZ V., ERDAL H.  
OPTIMIZATION OF PID CONTROLLERS USING ANT COLONY AND GENETIC ALGORITHMS, cilt.449, ss.5-17, 2013 (SCI-Expanded)
- XIV. **Optimization of PID Controllers Using Ant Colony and Genetic Algorithms Conclusion**  
ÜNAL M., AK A., TOPUZ V., ERDAL H.  
OPTIMIZATION OF PID CONTROLLERS USING ANT COLONY AND GENETIC ALGORITHMS, cilt.449, ss.69-72, 2013 (SCI-Expanded)
- XV. **Trajectory tracking performance comparison between genetic algorithm and ant colony optimization for PID controller tuning on pressure process**  
ÜNAL M., ERDAL H., TOPUZ V.  
COMPUTER APPLICATIONS IN ENGINEERING EDUCATION, cilt.20, sa.3, ss.518-528, 2012 (SCI-Expanded)
- XVI. **Trajectory Tracking Performance Comparison Between Genetic Algorithm and Ant Colony Optimization For PID Controller Tuning on Pressure Process**  
ÜNAL M., ERDAL H., TOPUZ V.  
Computer Applications in Engineering Education, cilt.1, ss.500-510, 2010 (SCI-Expanded)

## **Diğer Dergilerde Yayınlanan Makaleler**

- I. **Determination of damage length in aluminum 2024 T-3 plate by lamb wave**

ÜNAL M.

PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSITESI MUHENDISLIK BILIMLERI DERGISI, cilt.23, sa.4, ss.399-404, 2017 (ESCI)

**II. Fault Diagnosis of Rolling Bearing Based on Feature Extraction and Neural Network Algorithm**

Ünal M., Demetgül M., Onat M., Küçük H.

Recent Advances in Electrical Engineering Series, cilt.10, ss.179-185, 2013 (Hakemli Dergi)

## Kitaplar

**I. Load Monitoring Using Surface Response to Excitation Method**

Tashakori S., Baghalian A., ÜNAL M., ŞENYÜREK V. Y., Fekrmandi H., McDaniel D., Tansel İ. N.

Mechanics of Composite and Multi functional Materials Volume 7 Proceedings of the 2016 Annual Conference on Experimental and Applied Mechanics, Ralph, W. CarterSingh, RamanTandon, GyaneshwarThakre, Piyush R.Zavattieri, PabloZhu, Yong, Editör, Springer International Publishing, ss.209-214, 2017

**II. Implementation of the Surface Response to Excitation Method for Pipes**

Baghalian A., Tashakori S., Fekrmandi H., ÜNAL M., ŞENYÜREK V. Y., McDaniel D., Tansel İ. N.

Mechanics of Composite and Multi functional Materials Volume 7 Proceedings of the 2016 Annual Conference on Experimental and Applied Mechanics, Ralph, W. CarterSingh, RamanTandon, GyaneshwarThakre, Piyush R.Zavattieri, PabloZhu, Yong, Editör, Springer International Publishing, ss.261-266, 2017

**III. Optimization of PID Controllers Using Ant Colony and Genetic Algorithms**

Ünal M., Ak A., Topuz V., Erdal H.

Springer, London/Berlin , Dordrecht, 2013

## Hakemli Bilimsel Toplantılarda Yayımlanmış Bildiriler

**I. Loose Bolt Detecting Sensorless SHM System**

TANSEL İ. N., ŞENYÜREK V. Y., ÜNAL M., BAGHALIAN A., TASHAKORI S.

The 29'th Florida Conference on Recent Advances in Roboticsand Robot Showcase, MIAMI, Amerika Birleşik Devletleri, 12 - 13 Mayıs 2016, ss.258-261

**II. Implementation of Heterodyne Effect in Structural Health Monitoring SHM Systems**

TANSEL İ. N., ŞENYÜREK V. Y., ÜNAL M., BAGHALIAN A., TASHAKORI S.

The 29'th Florida Conference on Recent Advances in Roboticsand Robot Showcase, MIAMI, Amerika Birleşik Devletleri, 12 - 13 Mayıs 2016, ss.254-257

**III. Loose Bolt Detection Using Smart Washers**

TANSEL İ. N., ŞENYÜREK V. Y., ÜNAL M., AMIN B., SHERVIN T.

The 29'th Florida Conference on Recent Advances in Roboticsand Robot Showcase, MIAMI, Amerika Birleşik Devletleri, 12 - 13 Mayıs 2016, ss.220-224

**IV. Faults Diagnosis of Bearing by Sound Analysis and Artificial Neural Networks**

ÜNAL M., ONAT M., DEMETGÜL M., KÜÇÜK H.

7th International Advanced Technologies Symposium (IATS'13), 30 Eylül - 02 Ekim 2013, ss.705-710

**V. Fault Diagnosis of Rolling Bearing Based on Feature Extraction and Neural Network Algorithm**

ÜNAL M., DEMETGÜL M., ONAT M., KÜÇÜK H.

6th WSEAS International Conference on Sensors and Signals, 21 - 23 Mart 2013, cilt.169, ss.179-185

**VI. Web Based Control Simulations Environment WBCSE for Control Education with MATLAB**

ÜNAL M., SAVAŞ K., TOPUZ V., ERDAL H.

International Educational Technology Conference (IETC 2010), 01 Eylül 2010

**VII. Genetic Optimized Wavelet Denoising for FOG Signals**

ŞENYÜREK V. Y., ÜNAL M., VAROL H. S.

International Symposium on INnovations in Intelligent SysTems and Applications, 21 - 24 Haziran 2010, ss.436-440

- VIII. **Fault Diagnostics of a Small Scale Model of Industrial Temperature Control System**  
DEMETGÜL M., ÜNAL M., ONAT M., Tansel I. N.  
1 th International Symposium on Computing in Science & Engineering, 3 - 05 Haziran 2010
- IX. **Cellular Neural Network training by ant colony optimization algorithm**  
ÜNAL M., ONAT M., BAL A.  
2010 IEEE 18th Signal Processing and Communications Applications Conference, Diyarbakir, Turkey, Türkiye, 22 - 24 Nisan 2010
- X. **Reconstruction the complete image from random scattered pieces of image**  
Kement C., KAZDAL F., Yanlik S., ÜNAL M., ONAT M.  
2010 IEEE 18th Signal Processing and Communications Applications Conference, Diyarbakir, Turkey, 22 - 24 Nisan 2010
- XI. **ISAC Robot Kolunun Yörünge Takibi için PID Kontrolörün Genetik Algoritma İle Optimizasyonu**  
ÜNAL M., ERDAL H., TOPUZ V., ERGÜZEL T. T.  
Ulusal Teknik Eğitim ve Eğitim Bilimleri Genç Araştırmacılar Sempozyumu (UMES'07), Türkiye, 1 - 03 Haziran 2005

## **Metrikler**

Yayın: 33

Atf (WoS): 211

Atf (Scopus): 272

H-İndeks (WoS): 8

H-İndeks (Scopus): 7

## **Akademi Dışı Deneyim**

Florida International University, Mechanical and Material Engineering, Mechatronics Laboratory, Courtesy Assistant Professor