# Assoc. Prof. ONUR PEKCAN

## Personal Information

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## Education Information

Doctorate, University of Illinois at Urbana-Champaign, Mühendislik Fakültesi , İnşaat ve Çevre Mühendisliği, United States
Of America 2004 - 2011

Postgraduate, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, Turkey 1999 -
2001

Undergraduate, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, Turkey 1994 -
1999

## Foreign Languages

English, C1 Advanced

## Dissertations

Postgraduate, "Cyclic behaviour of Adapazarı clayey silts", Middle East Technical University, Graduate School of Natural
and Applied Sciences, İnşaat Mühendisliği (YI) (Tezli), 2001

## Research Areas

Land Information Systems, Overhead Photogrammetry, Geodesy and Photogrammetry, Transportation Engineering,
Tunnels, Highways, Transportation Engineering, Geotechnical, Internet-GIS, 3D-Modeling, Laser Scanning

## Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, 2018 -
Continues

Assistant Professor, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, 2013 -
2018

Lecturer, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, 2011 - 2013

## Advising Theses

Pekcan O., INVESTIGATING STRENGTH AND DEFORMATION CHARACTERISTICS OF MICROBIALLY INDUCED CALCITE PRECIPITATION TREATED LOOSE SAND, Postgraduate, E.DUMAN(Student), 2020

Pekcan O., Toker N. K. , Prediction of Water Retention Curves Using Neural Networks, Postgraduate, M.TÜRKMEN(Student), 2020

Pekcan O., Metaheuristic Based Soil Parameter Identification In Deep Excavations, Postgraduate, A.AKGÜL(Student), 2019

Pekcan O., Improving Deformation Characteristics of Sand Soils Using Bio-improvement Methods, Postgraduate, M.TUNALI(Student), 2019

Pekcan O., Performance of Short Anchors Inside the Failure Wedge, Postgraduate, B.DEMİR(Student), 2019

Pekcan O., REAL-TIME SIMULATION OF SOIL–TOOL INTERACTION USING ADVANCED SOIL MODELS, Postgraduate, M.GÜRBÜZ(Student), 2019

PEKCAN O., Metaheuristic based backcalculation of rock mass parameters around tunnels, Postgraduate, G.GEDİK(Student), 2018

PEKCAN O., Integrated limit equilibrium method for slope stability analysis, Postgraduate, Y.YALÇIN(Student), 2018

PEKCAN O., Application of recent optimization algorithms on slope stability problems, Postgraduate, S.AZIZI(Student), 2018

PEKCAN O., An experimental investigation for improvement of sands using microbially induced calcium carbonate precipitation, Postgraduate, Y.EMRE(Student), 2016

PEKCAN O., Development of UAV-based pavement crack identification system using artificial intelligence, Postgraduate, A.BAHADDİN(Student), 2016

PEKCAN O., Unmanned aerial vehicle based visualization of deep excavations using game engines, Postgraduate, T.TEKE(Student), 2016

PEKCAN O., ÇOKÇA E., Estimating swelling characteristics of clays using methylene blue test - a machine learning approach /, Postgraduate, G.Didem(Student), 2014

PEKCAN O., Backcalculation of pavement layer properties using artificial neural network based gravitational search algorithm /, Postgraduate, A.ÖCAL(Student), 2014

ÇOKÇA E., PEKCAN O., Estimating swelling characteristics of clays using methylene blue test: A machine learning approach, Postgraduate, G.DİDEM(Student), 2014


## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

I. **An evaluation of seismic hazard and potential damage in Gaziantep, Turkey using site specific models for sources, velocity structure and building stock**
ARSLAN KELAM A., Karimzadeh S., Yousefibavil K., AKGÜN H., ASKAN GÜNDOĞAN A., ERBERİK M. A. , KOÇKAR M. K. , PEKCAN O., Ciftci H.
Soil Dynamics and Earthquake Engineering, vol.154, 2022 (Journal Indexed in SCI Expanded)

II. **The Making of the NEAM Tsunami Hazard Model 2018 (NEAMTHM18)**
Basili R., Brizuela B., Herrero A., Iqbal S., Lorito S., Maesano F. E. , Murphy S., Perfetti P., Romano F., Scala A., et al.
FRONTIERS IN EARTH SCIENCE, vol.8, 2021 (Journal Indexed in SCI)

III. **Nuclear Fission-Nuclear Fusion algorithm for global optimization: a modified Big Bang-Big Crunch algorithm**
YALÇIN Y., PEKCAN O.
NEURAL COMPUTING & APPLICATIONS, vol.32, no.7, pp.2751-2783, 2020 (Journal Indexed in SCI)

IV. **Comparison of microbially induced calcium carbonate precipitation eligibility using sporosarcina pasteurii and bacillus licheniformis on two different sands**
Sarıçiçek Y. E. , Gurbanov R., Pekcan O., Gözen A. G.
GEOMICROBIOLOGY JOURNAL, vol.36, pp.42-52, 2019 (Journal Indexed in SCI)

V. **An automated approach for the design of Mechanically Stabilized Earth Walls incorporating metaheuristic optimization algorithms**
YALÇIN Y., Orhon M., PEKCAN O.

APPLIED SOFT COMPUTING, vol.74, pp.547-566, 2019 (Journal Indexed in SCI)

VI. **A modified approach to cross entropy method: Elitist stepped distribution algorithm**
Altun M., Pekcan O.
APPLIED SOFT COMPUTING, vol.58, pp.756-769, 2017 (Journal Indexed in SCI)

VII. **A regional near-surface high frequency spectral attenuation (kappa) model for northwestern Turkey**
Askan A., Sisman F. N. , Pekcan O.
SOIL DYNAMICS AND EARTHQUAKE ENGINEERING, vol.65, pp.113-125, 2014 (Journal Indexed in SCI)

VIII. **A bat-inspired algorithm for structural optimization**
Hasançebi O., Teke T., Pekcan O.
COMPUTERS & STRUCTURES, vol.128, pp.77-90, 2013 (Journal Indexed in SCI)

IX. **Undrained cyclic shear and deformation behavior of silt-clay mixtures of Adapazan, Turkey**
Yilmaz M., Pekcan O., Bakir B.
SOIL DYNAMICS AND EARTHQUAKE ENGINEERING, vol.24, no.7, pp.497-507, 2004 (Journal Indexed in SCI)

## Articles Published in Other Journals

I. **Tam Derinlikli Esnek Üstyapıların Katman Özelliklerinin Tahmini İçin Lig Şampiyonası Algoritması**
PEKCAN O.
Mühendislik Bilimleri ve Tasarım Dergisi, vol.8, no.1, pp.273-284, 2020 (Other Refereed National Journals)

## Books & Book Chapters

I. **A Hybrid Cuckoo Search Algorithm for Cost Optimization of Mechanically Stabilized Earth Walls**
Altun M., Yalcin Y., Pekcan O.
in: Applications of Cuckoo Search Algorithm and its Variants, Nilanjan Dey, Editor, Springer, London/Berlin , Singapore, pp.277-306, 2020

II. **An Objective-Based Design Approach of Retaining Walls Using Cuckoo Search Algorithm**
Tutuş E. B. , Ghalandari T., Pekcan O.
in: Applications of Cuckoo Search Algorithm and its Variants, Nilanjan Dey, Editor, Springer, London/Berlin , Singapore, pp.253-275, 2020

III. **Cuckoo Search Based Backcalculation Algorithm for Estimating Layer Properties of Full-Depth Flexible Pavements**
Öcal A., Pekcan O.
in: Applications of Cuckoo Search Algorithm and its Variants, Nilanjan Dey, Editor, Springer, London/Berlin , Singapore, pp.229-252, 2020

## Refereed Congress / Symposium Publications in Proceedings

I. **A Virtual Board Game: Monosoil**
Dolma A., TÜRKEZER M., Durmaz M., DUMAN E., SARIÇİÇEK Y. E. , PEKCAN O.
2nd Geo Congress - Advances in Monitoring and Sensing, Embankments, Slopes, and Dams, Pavements, and Geo-Education, Charlottetown, Canada, 20 - 23 March 2022, vol.336, pp.497-504

II. **Visualization of Atterberg Limits Test through a Virtual Soil Laboratory**
Ozturk E., TÜRKEZER M., DUMAN E., SARIÇİÇEK Y. E. , Kaya H. D. , Arica E. U. , PEKCAN O.
2nd Geo Congress - Advances in Monitoring and Sensing, Embankments, Slopes, and Dams, Pavements, and Geo-Education, Charlottetown, Canada, 20 - 23 March 2022, vol.336, pp.505-514

III. **Development Of Direct Shear And Triaxial Test Procedures On Microbially Treated Sand Specimens**
Tunalı M., Duman E., SARIÇİÇEK Y. E. , PEKCAN O., GURBANOV R., GÖZEN A. G.

1st Mediterranean Young Geotechnical Engineers Conference, Muğla/Bodrum, Turkey, 23 - 24 September 2019, pp.73-80

IV. **Lean Project Management using Unmanned Aerial Vehicles**
ERSÖZ A. B. , PEKCAN O., TOKDEMİR O. B.
5th International Project and Construction Management Conference (IPCMC2018), 16 - 18 November 2018

V. **An Artificial Intelligence Based Approach For Investigating Slope Stability Of Earth Dams**
SARIÇİÇEK Y. E. , PEKCAN O.
5th International Symposium on Dam Safety, İstanbul, Turkey, 27 October - 01 November 2018, vol.2, pp.831-840

VI. **Tam Derinlikli Esnek Üstyapıların Destek Vektör Makineleri Yöntemiyle Sonlu Elemanlar Modellemesi**
PEKCAN O., SARIÇİÇEK Y. E.
ZEMİN MEKANİĞİ VE GEOTEKNİK MÜHENDİSLİĞİ 17. ULUSAL KONFERANSI, İstanbul, Turkey, 26 - 28 September 2018, vol.3, pp.1581-1592

VII. **Analysis of Slopes Using Elitist Differential Evolution Algorithm**
YALÇIN Y., ALTUN M., PEKCAN O.
6th International Conference on Engineering Optimization, Lizbon, Portugal, 17 - 19 September 2018

VIII. **Application of Artificial Neural Networks onBuilding Energy Estimation**
ALTUN M., ERSÖZ A. B. , TEKE T., KURT T., AKÇAMETE GÜNGÖR A., PEKCAN O.
International Conference on Engineering Technologies, Konya, Turkey, 7 - 09 December 2017

IX. **Crack identification for rigid pavements using unmanned aerial vehicles**
ERSÖZ A. B. , PEKCAN O., TEKE T.
International Conference on Building up Efficient and Sustainable Transport Infrastructure (BESTInfra), Prague, Czech Republic, 21 - 22 September 2017, vol.236

X. **Probabilistic TSUnami Hazard MAPS for the NEAM Region: TheTSUMAPS-NEAM Project**
BASILI R., BABEYKO A., HOECHNER A., BAPTISTA M. A. , ABDALLAH S. B. , CANALS M., El Mouraouah A., HARBITZ C. B. , Ibenbrahim A., LASTRAS G., et al.
General Assembly of European Geoscience Union EGU 2017, VİYANA, Austria, 23 - 28 April 2017, vol.19

XI. **Unmanned Aerial Vehicle Based Pavement Crack Identification Method Integrated with Geographic Information Systems**
ERSÖZ A. B. , PEKCAN O., TEKE T.
Transportation Research Board 96th Annual Meeting, Washington, Kiribati, 8 - 12 January 2017

XII. **Probabilistic TSUnami Hazard MAPS for the NEAM Region The TSUMAPS NEAM Project**
Basili R., Babeyko A., Baptista M. A. , Abdallah S. B. , Canals M., Mouraouah A. E. , Harbitz C. B. , Ibenbrahim A., Lastras G., Lorito S., et al.
AGU, 12 - 16 December 2016

XIII. **Damage Identification of Coastal Structures Using Image Processing Tecniques**
PEKCAN O., ERSÖZ A. B. , TEKE T., Doğan G. G. , ÖZYURT G., BAYKAL C.
ICCE' 16 - 35th International Conference on Coastal Engineering, 17 - 20 November 2016

XIV. **Visualization of Interlock Action in Granular Medium for Modeling Geogrids**
PEKCAN O., Gürbüz M.
Avrupa Geosentetik Konferansı, 25 - 28 September 2016

XV. **Pavement Crack Detection Using Unmanned Air Vehicles**
PEKCAN O., ERSÖZ A. B. , TEKE T.
Transportation Research Board 95th Annual Meeting, 10 - 14 January 2016

XVI. **Determination of Layer Properties for Full Depth Asphalt Pavements Using Artificial Neural Network Based Gravitational Search Algorithm**
ÖCAL A., PEKCAN O.
4th International Conference on Engineering Optimization - EngOpt 2014, 8 - 11 September 2014

XVII. **Connected Component Based Pavement Crack Identification Using Support Vector Machines**
GÜNGÖR O. E. , PEKCAN O.
93rd Transportation Research Board Annual(TRB) Meeting, 12 - 16 January 2014

XVIII. **Development of soil profile visualization software using game engines**

Cicekci O. C. , Turkeri M. K. , PEKCAN O.

2014 Congress on Geo-Characterization and Modeling for Sustainability, Geo-Congress 2014, Atlanta, GA, United States Of America, 23 - 26 February 2014, pp.3364-3372

XIX. **Soil Parameter Identification by Differential Evolution**

DÖRTDİVANLIOĞLU B., PEKCAN O.

IPDO, The 4th Inverse problems, design and optimization symposium, 26 - 28 June 2013

XX. **Settlement of Foundations on Soils Improved by Columns**

ŞENGÖR M., TEKİN M., PEKCAN O., ÖZTÜRK Ş., ERGUN U.

ACE, The 10th International Congress on Advances in Civil Engineering, 17 - 19 October 2012

XXI. **Parallel Computational Framework Parallel Computational Framework for the Solution of Inverse Problems in Geotechnical Engineering**

PEKCAN O., SEÇKİNER S.

EYGEC, The 22nd European Young Geotechnical Engineers Conference, 26 - 29 August 2012

XXII. **A Data Mining Approach for Modeling High-frequency Spectral Decay of Ground Motions for Northwestern Turkey**

ŞİŞMAN F. N. , PEKCAN O., ASKAN GÜNDOĞAN A.

EURO, The 22nd European Conference on Operational Research, Vilniaus, Lithuania, 8 - 11 June 2012

XXIII. **A Regional High-frequency Attenuation (Kappa) Model for Northwestern Turkey**

ŞİŞMAN F. N. , PEKCAN O., ASKAN GÜNDOĞAN A.

SSA, 2012 Seismological Society of America Annual Meeting, 17 - 19 April 2012

XXIV. **Soft computing methodology to determine pavement thickness from falling weight deflectometer testing**

Pekcan O., Tutumluer E., Ghaboussi J.

GeoFlorida 2010: Advances in Analysis, Modeling and Design Conference, West Palm Beach, FL, United States Of America, 20 - 24 February 2010, pp.2621-2630

XXV. **SOFTSYS for backcalculation of full-depth asphalt pavement layer moduli**

Pekcan O., Tutumluer E., Ghaboussi J.

8th International Conference on the Bearing Capacity of Roads, Railways and Airfields, BCR2A'09, Champaign, IL, United States Of America, 29 June - 02 July 2009, vol.1, pp.679-687

XXVI. **Quantifying effects of lime stabilize subgrade on conventional flexible pavement responses**

Pekcan O., Tutumluer E., Thompson M.

1st International Conference on Transportation Geotechnics, ICTG-1, Nottingham, United Kingdom, 25 - 27 August 2008, pp.529-534

XXVII. **Artificial Neural Network based backcalculation of conventional flexible pavements on lime stabilized soils**

Pekcan O., Tutumluer E., Thompson M.

12th International Conference on Computer Methods and Advances in Geomechanics 2008, Goa, India, 1 - 06 October 2008, vol.3, pp.1647-1654

XXVIII. **Analyzing pavements on lime-stabilized soils with artificial neural networks**

Pekcan O., Tutumluer E., Thompson M.

International Conference on Advanced Characterisation of Pavement and Soil Engineering Materials, Athens, Greece, 20 - 22 June 2007, vol.1, pp.587-596

XXIX. **Nondestructive flexible pavement evaluation using ILLI-PAVE based artificial neural network models**

Pekcan O., Tutumluer E., Thompson M.

GeoCongress 2006, Atlanta, GA, United States Of America, 26 February - 01 March 2006, vol.2006, pp.227

XXX. **Advanced Models for Predicting Aggregate Rutting Behavior**

CEYLAN H., GÜÇLÜ A., TUTUMLUER E., PEKCAN O.

BCRA05, 7th International Conference on the Bearing Capacity of Roads, Railways and Airfields, 27 - 29 June 2005

XXXI. **Cyclic behavior of Adapazari silt and clay mixtures.**

PEKCAN O., ÇETİN K. Ö. , BAKIR B. S.

11th International Conference on Soil Dynamics and Earthquake Engineering, 7 - 09 January 2004

## Supported Projects

PEKCAN O., DUMAN E., Project Supported by Higher Education Institutions, Investigation of Behavior of Microbially Induced Calcite Precipitated Sands Using Triaxial Test, 2020 - 2021

Pekcan O., TUBITAK Project, SahaGözü: İnşaat Sahaları Proje Yönetimi, 2018 - 2020

PEKCAN O., TUNALI M., YALÇIN Y., GÖZEN A. G. , Project Supported by Higher Education Institutions, ÜREOLİTİK BAKTERİLER KULLANILARAK İYİLEŞTİRİLEN KUMLU ZEMİNLERİN MÜHENDİSLİK ÖZELLİKLERİNİN İNCELENMESİ, 2017 - 2019

PEKCAN O., Project Supported by Higher Education Institutions, TSE STANDARTLARI KULLANILARAK GENETİK ALGORİTMALARLA İSTİNAT DUVARI TASARIMI, 2017 - 2017

PEKCAN O., Project Supported by Higher Education Institutions, ZEMİNLERİN DEFORMASYON ÖZELLİKLERİNİN BİYO-İYİLEŞTİRME METODLARI KULLANILARAK İYİLEŞTİRİLMESİ, 2017 - 2017

PEKCAN O., Project Supported by Higher Education Institutions, ŞEV STABİLİTE ANALİZLERİNİN OPTİMİZASYON TEKNİKLERİ KULLANILARAK DEĞERLENDİRİLMESİ, 2017 - 2017

PEKCAN O., Project Supported by Higher Education Institutions, OYUN MOTORLARI KULLANILARAK GEOGRİD-AGREGA KENETLENME MEKANIZMASININ İNCELENMESİ, 2017 - 2017

PEKCAN O., Project Supported by Higher Education Institutions, İNSANSIZ HAVA ARAÇLARI KULLANARAK YOL ÜST YAPISI ÇATLAK TESPİTİ, 2017 - 2017

PEKCAN O., Project Supported by Higher Education Institutions, ZEMİNLERİN ŞİŞME ÖZELLİKLERİNİN MİKROBİYAL ETKİLERE BAĞLI KALSİT ÇÖKELMESİ SONUCU İYİLEŞTİRİLMESİ, 2017 - 2017

Pekcan O., TUBITAK Project, İnşaat Sahası Görüntüleme ve Bilgi Sistemi Yazılımı, 2016 - 2017

Pekcan O., Yalçıner A. C. , EU Supported Other Project, TSUMAPS-NEAM Probabilistic TSUnami Hazard MAPS for the NEAM Region, 2015 - 2017

PEKCAN O., DEMİR B., Project Supported by Higher Education Institutions, KAZIKLI TEMELLERİN OPTİMUM TOPOLOJİK YERLEŞİMİ İÇİN HIZLI HESAPLAMA YÖNTEMLERİ GELİŞTİRİLMESİ, 2016 - 2016

PEKCAN O., Gedik G., SARIÇİÇEK Y. E. , YALÇIN Y., Project Supported by Higher Education Institutions, BİYOLOJİK YÖNTEMLER KULLANARAK İYİLEŞTİRİLEN ZEMİNLERİN MUKAVEMET DAVRANIŞININ İNCELENMESİ, 2014 - 2016

Pekcan O., Temizer S., Project Supported by Other Official Institutions, CANKUŞ İnsansız Hava Araçları Kullanılarak Kendi Kendine veya Uzaktan Kontrollü Olarak Hareket Edebilen Deprem Hasar Gözlem ve Kurtarma Sistemlerinin Geliştirilmesi ve Afet Kurtarma Sistemlerine Entegrasyonu, 2012 - 2016

## Citations

Total Citations (WOS):152
h-index (WOS):5

## Awards

Pekcan O., Mustafa Parlar Eğitim ve Araştırma Vakfı ODTÜ'de Yılın Eğitimcisi Ödülü, Mustafa Parlar Vakfı, December 2016

Pekcan O., YTMK En İyi Bildiri Ödülü, Yollar Türk Milli Komitesi, March 2015

Pekcan O., Mustafa Parlar Eğitim ve Araştırma Vakfı ODTÜ'de Yılın Eğitimcisi Ödülü, Mustafa Parlar Vakfı, December 2013