Asst. Prof. MEHMET ONUR DOĞAN

Personal Information

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Address: ODTÜ - Department of Petroleum and Natural Gas Engineering

International Researcher IDs
ScholarID: rEnfesQAAAAJ
ORCID: 0000-0002-9043-6187
Publons / Web Of Science ResearcherID: L-7937-2017
ScopusID: 35758531300
Yoksis Researcher ID: 252588

Biography

KİŞİSEL BİLGİLER

Uyruk : T.C.

Doğum tarihi : 01 Ocak, 1980

Askerlik durumu : Tamamlandı

Medeni durumu : Evli , 2 çocuk babası

KİŞİSEL PROFİL

Gözenekli yapıda çok fazlı akışkanların sayısal modellenmesinde uzman, Dr. Mühendis

EĞİTİM BİLGİLERİ

Mart 2007 - Aralık 2010 :Doktora, Stuttgart Üniversitesi İnşaat ve Çevre Mühendisliği, Doktora Tezi: Gözenekli ortam akımıyla boru akımını eşleştirmek için simulasyon modeli geliştirilmesi (Alman Araştırma Birliği DFG destekli), Derecesi: çok iyi.

Auğ. 2005 - Şubat 2007 :Araştırma Görevlisi, **Stuttgart Üniversitesi İnşaat ve Çevre Mühendisliği,** CO_2-TRAP Projesi: Terkedilmiş kömür yataklarına karbondioksit depolanması işleminin sayısal analizi (Federal Almanya Eğitim ve Araştırma Bakanlığı(BMBF) ve Alman Araştırma Birliği DFG destekli).

Ocak 2005 - Mayıs 2005 :Araştırma Görevlisi, **Stuttgart Üniversitesi İnşaat ve Çevre Mühendisliği**, Tez Sonrası Proje: Jeolojik formasyonlarda gaz akışının sayısal modellenmesi (Deutsche Montan Technologie destekli)

Eylül 2002 - Aralık 2004 :Hidrolik Mühendisliği Yüksek Lisansı, Stuttgart Üniversitesi, Yüksek Lisans Tezi: Madenlerdeki gaz akışının sayısal modellenmesi (IPSWAT bursu destekli), Derecesi: 1.3 (maks 1.0).

Eylül 1997 - Haziran 2002 : İnşaat Mühendisliği Lisans Eğitimi, ODTÜ, Derecesi: 3.6 (maks. 4.0).

Eylül 1990 - Ocak 1997 : Ankara Anadolu Lisesi (Almanca), Derecesi: 4.7 (maks. 5.0).

Education Information

Doctorate, Universitaet Stuttgart, Civil and Environmental Engineering, Department of Hydromechanics and Modelling of Hydrosystems, Germany 2005 - 2010
Postgraduate, Universitaet Stuttgart, Civil and Environmental Engineering, Department of Hydromechanics and Modelling of Hydrosystems , Germany 2002 - 2004
Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, Turkey 1997 - 2002

Foreign Languages

English, C2 Mastery
German, C1 Advanced

Dissertations

Doctorate, Coupling of Porous Media Flow with Pipe Flow, Universitaet Stuttgart, Civil and Environmental, Department of Hydromechanics and Modelling of Hydrosystems, 2010
Postgraduate, Modeling of mine gas repositories, Universitaet Stuttgart, Civil and Environmental Engineering, Department of Hydromechanics and Modelling of Hydrosystems, 2004

Research Areas

Engineering and Technology

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Petroleum and Natural Gas Engineering, 2019 - Continues
Research Assistant, Universitaet Stuttgart, Civil and Environmental Engineering, 2007 - 2010
Research Assistant, Universitaet Stuttgart, Civil and Environmental Engineering, Department of Hydromechanics and Modelling of Hydrosystems, 2005 - 2007
Researcher, Universitaet Stuttgart, Civil and Environmental Engineering, Department of Hydromechanics and Modelling of Hydrosystems, 2005 - 2005

Academic and Administrative Experience

Engineering Faculty Transfer Committee, Middle East Technical University, Faculty Of Engineering, Department Of Petroleum And Natural Gas Engineering, 2024 - Continues
Department Education Committee, Middle East Technical University, Faculty Of Engineering, Department Of Petroleum And Natural Gas Engineering, 2024 - Continues
Performans Değerlendirme Komisyonu Üyesi, Middle East Technical University, Faculty of Engineering, Department of Petroleum and Natural Gas Engineering, 2021 - Continues
Remote Education Coordinator, Middle East Technical University, Faculty of Engineering, Department of Petroleum and Natural Gas Engineering, 2020 - Continues
Kalite/Açık Erişim Koordinatörü, Middle East Technical University, Faculty of Engineering, Department of Petroleum and Natural Gas Engineering, 2020 - Continues

Deputy Head of Department, Middle East Technical University, Faculty of Engineering, Department of Petroleum and Natural Gas Engineering, 2020 - Continues
Bölüm Stratejik Plan Komisyonu Üyesi, Middle East Technical University, Faculty of Engineering, Department of Petroleum and Natural Gas Engineering, 2020 - Continues
Member of Department Promotion and Alumni Relations Commission, Middle East Technical University, Faculty Of Engineering, Department Of Petroleum And Natural Gas Engineering, 2021 - 2021

Courses

Natural Gas Engineering, Undergraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021
Transport Phenomena in Geosystems, Undergraduate, 2024 - 2025, 2023 - 2024, 2022 - 2023, 2020 - 2021, 2019 - 2020, 2017 - 2018
Numerical Reservoir Simulation I, Postgraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2017 - 2018
Introduction to Fluid Mechanics, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2017 - 2018, 2016 - 2017
Fluid Mechanics, Undergraduate, 2015 - 2016

Advising Theses

Doğan M. O., DEVELOPMENT OF A MACHINE LEARNING MODEL FOR PREDICTING MDT POINTS AND FLUID TYPES USING CONVENTIONAL LOGS AND HIGH-RESOLUTION RESISTIVITY DATA, Postgraduate, M.BEDİRHAN(Student), Continues
Doğan M. O., IMPROVING DRILLING TRAJECTORY CALCULATION BY DEVELOPING KALMAN FILTER ALGORITHM, Postgraduate, E.KARATAŞ(Student), Continues
Doğan M. O., COMPARISON OF CONFORMING AND NON-CONFORMING DFN MODELS WITH DUAL/CONTINUUM MODELS, Postgraduate, O.TÖREN(Student), Continues
Doğan M. O., THE EFFECT OF SCREENING PARAMETERS ON MISCIBLE AND IMMISCIBLE CO2 EOR APPLICATIONS, Postgraduate, U.EFE(Student), Continues
Doğan M. O., Comparison Between Empirical Correlations and Deterministic Models of Two-Phase Free Flow, Postgraduate, A.EGE(Student), Continues
Doğan M. O., MODELING OF FLOW AND TRANSPORT PROCESSES IN GAS CONDENSATE RESERVOIRS USING PHYSICS-INFORMED NEURAL NETWORKS, Doctorate, T.JAMALBAYLİ(Student), Continues
Doğan M. O., UNDERSTANDING AND MODELING MULTI-PHASE FLOW IN FRACTURED MEDIA USING MINC (MULTIPLE INTERACTING CONINUA) PROXIMITY FUNCTION, Doctorate, E.BERNA(Student), Continues
Doğan M. O., EFFECT OF GRAVITY DRAINAGE, MISCIBILITY, AND RELATIVE PERMEABILITY ON TIGHT MATRIX RESERVOIR WITH LOW-QUALITY NATURAL FRACTURES ON CARBON-DIOXIDE INJECTION, Postgraduate, M.Can(Student), 2024
Doğan M. O., ASSESSING THE EFFECT OF COUPLED GEOMECHANICAL AND FLUID-FLOW PROBLEMS IN GEOTHERMAL RESERVOIRS VIA NUMERICAL MODELING, Postgraduate, Y.MUSTAPHA(Student), 2024
Doğan M. O., Comparison and optimization of multiple interacting continua (MINC) model parameters , Postgraduate, E.BERNA(Student), 2023
Doğan M. O., Comparison of reservoir simulation techniques for gas reservoirs: semi-analytical tankflow model approach versus finite volume solutions, Postgraduate, T.Jamalbayli(Student), 2023

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Extended Multiple Interacting Continua (E-MINC) Model Improvement with a K-Means Clustering**

Algorithm Based on an Equi-dimensional Discrete Fracture Matrix (ED-DFM) Model
DOĞAN M. O.
MATHEMATICAL GEOSCIENCES, vol.56, no.4, pp.751-782, 2024 (SCI-Expanded)

II. **Different concepts for the coupling of porous-media flow with lower-dimensional pipe flow**
Dogan M. O., Class H., Helmig R.
CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES, vol.53, no.3, pp.207-233, 2009 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

I. **New Definition and Numerical Analysis of Local Thermal Non-Equilibrium (LTNE) Conditions in Porous Media: Considering Convection and Conduction Processes for Darcy Scale Problems**
Doğan M. O., Tavakkoli Osgouei Y.
VI International Workshop «Thermal Methods for Enhanced Oil Recovery: Laboratory Testing, Simulation and Oilfields Applications» ThEOR2023, Ankara, Turkey, 20 - 22 November 2023, pp.48-49

II. **Comparison of Reservoir Simulation Techniques for Gas Reservoirs: Semi-Analytical Tank Flow Model Approach versus Finite Volume Solutions**
Doğan M. O., Jamalbayli T., Jamalbayov M.
VI International Workshop «Thermal Methods for Enhanced Oil Recovery: Laboratory Testing, Simulation and Oilfields Applications» ThEOR2023, Ankara, Turkey, 20 - 22 November 2023, pp.21

III. **TÜRKİYE'DEKİ İKLİM DEĞİŞİKLİĞİ VE KARBON YAKALAMA-DEPOLAMA UYGULAMALARI İLE İLİŞKİLİ MEVZUATIN İNCELENMESİ**
Bülbül S., Sinayuç Ç., Doğan M. O.
21st International Petroleum and Natural Gas Congress and Exhibition of Türkiye, Ankara, Turkey, 27 - 29 September 2023, pp.305-311

IV. **A Numerical Study on the Effect of Flue Gas Composition on Oil Recovery in Low-Permeability Formations**
Tavakkoli Osgouei Y., Doğan M. O., Sinayuç Ç.
21st International Petroleum and Natural Gas Congress and Exibition of Türkiye, Ankara, Turkey, 27 - 29 September 2023, pp.325-328

V. **A numerical study on decreasing CO2 emission by flue gas injection into heavy oil reservoirs**
Tavakkoli Osgouei Y., Doğan M. O., Sinayuç Ç.
Interpore 2023, Edinburgh, England, 22 - 25 May 2023, pp.51

VI. **Heat Extraction at High Flow Rates by Fracture Plugging in Geothermal Reservoirs from Pore to Darcy Scale Considering Local Thermal Non-Equilibrium (LTNE) Conditions**
Tavakkoli Y., Doğan M. O., Akın S.
Interpore 2023, Edinburgh, England, 22 - 25 May 2023, pp.333-334

VII. **Model Development for Thermal Management of Li-Ion Batteries from Cell Level to Total System Level**
Doğan M. O.
Interpore 2023, Edinburgh, England, 22 - 25 May 2023, pp.465-466

VIII. **Dynamic Simulation of the Filtration Process Based on the Streamline Technology, Monitoring and Prediction of EOR and Stimulation Methods**
Jamalbayov M. A., Hasanov I. R., Valiyev N. A., Doğan M. O., Jamalbayli T. M.
ThEOR2022 - Thermal Methods for Enhanced Oil Recovery: Laboratory Testing, Simulation and Oilfields Applications , Baku, Azerbaijan, 3 - 05 November 2022, pp.42

IX. **HEPPs Foreseeing Upcoming Energy Market Conditions**
Doğan M. O.
3rd International Conference on Civil and Environmental Engineering (ICOCEE) , İzmir, Turkey, 24 - 27 April 2018, pp.573-581

X. **Gelişen enerji piyasasında denge bacasının önemi**

Doğan M. O.
DSI 2. Barajlar Kongresi, İstanbul, Turkey, 13 - 15 February 2014

XI. **Coupling of Porous Media Flow with Pipe Flow via Dual-Continuum Strategy**
Doğan M. O.
DFG FG 581 Natural Slopes: Coupling of Flow and Deformation Processes for Modeling the Movement of Natural Slopes, Karlsruhe, Germany, 27 - 28 March 2008, pp.12

XII. **Coupling of porous media flow with free flow**
Doğan M. O., Helmig R., Class H.
4th IAHR International Groundwater Symposium: Flow and Transport in Heterogeneous Subsurface Formations, Theory, Modeling and Applications. Modelling of Coupled Surface-Subsurface Processes, İstanbul, Turkey, 18 - 20 June 2008, pp.65

XIII. **Sorptive storage of CO2 in abandoned coal mines- Numerical Ad-/desorption Model**
Doğan M. O., Class H.
Geotechnologien - Status Seminar - Development and Evaluation of Innovative Strategies for Sequestration and Permanent Immobilisation of CO2 in Geological Formations (CO2Trap) , Freiburg, Germany, 21 - 22 September 2006, pp.22

Metrics

Publication: 17
Citation (WoS): 4
Citation (Scopus): 4
H-Index (WoS): 1
H-Index (Scopus): 1

Non Academic Experience

Company, Aspilsan Energy Cooperation, Research and Development
Company, ENERJISA Energy Generation Company, Engineering Design