Dr. Öğr. Üyesi HASAN GÜLAŞIK

Kişisel Bilgiler

İş Telefonu: +90 232 301 7633
E-posta: hasan.gulasik@deu.edu.tr
Web: https://avesis.deu.edu.tr/hasan.gulasik

Uluslararası Araştırmacı ID'leri
ScholarID: dTP6s0cAAAAJ
ORCID: 0000-0001-7760-4089
Publons / Web Of Science ResearcherID: HJA-1101-2022
ScopusID: 56245750400
Yoksis Araştırmacı ID: 396198

Biyografi

PERSONAL INFORMATION

Birth Date/Place	1981/Turkey
Nationality	Turkey
ORCID / WoSID / ScopusID / YöksisID	0000-0001-7760-4089 / HJA-1101-2022 / 56245750400 / 396198
Web	https://www.linkedin.com/in/hasan-gulasik-93067b1b6 https://www.researchgate.net/profile/Hasan_Guelasik https://scholar.google.com.tr/citations?user=dTP6s0cAAAAJ&hl=en

RESEARCH INTERESTS

I. aerospace structures
II. computational/experimental mechanics of composite/metallic materials
III. multiscale (nano-micro-macro) / multiphysics (mechanical, thermal, electrical...) modelling of materials
IV. elasticity/plasticity/damage/fracture in small/finite deformations

PROFESSIONAL EXPERIENCE

2021/12/31 - 2019/04/15 — **POSTDOC RESEARCHER**

Aerospace and Mechanical Engineering Department at the University of Liège, Liège/Belgium

Project: Synthesis, Characterization and Multi-Scale Model of Smart Composite Materials

I. Modelling of finite strain thermo-mechanical behaviour of shape memory nanocomposites

II. hyperviscoelastic-plastic modelling of nanocomposites

2013/04/21- 2007/05/01 — **STRUCTURAL ANALYSIS SPECIALIST**

Turkish Aerospace Industries (TUSAS), Ankara/Turkey, https://www.tusas.com

R&D Department, Structural Design & Analysis Division, Airbus A350 Passenger Aircraft, Ailerons group

I. DFEM, F E analysis, static and buckling analysis, bolt/nut/hole analysis, full scale static and coupon test stress analysis, check stress reports, manufacturing defect studies

R&D Department, Structural Design & Analysis Division, Airbus A400M Cargo Aircraft, Rear Fuselage Upper Shell & Paratrooper Door group:

I. Design, GFEM, FE analysis, static and buckling analysis, bolt/nut/hole analysis, full-scale static test stress studies, structural stress analysis method studies, certification and documentation studies (Allowable Load Envelope-ALE, Flight Test and Structural Capability Envelope - SCE, Structure Certification Status Summary - CSS, Aircraft Certification Documentation - ACD)

2007/04/30- 2005/12/06 — **PROJECT ENGINEER**

ASKAM Truck Manufacturing and Trade Company, Kocaeli/Turkey, www.askam.com.tr

R&D Department, Chassis and Engine Projects Division

I. engine, gearbox, axle installation, chassis, traverse, leaf spring, mechanism, bracket design, manufacturing and test studies

2007/04/30- **QUALITY PERSONAL**

2005/07/01 Ece-Med Medical Electronics Systems, Istanbul/Turkey, https://www.ecemed.com.tr

Meditek Medical Electronics Systems, Ankara/Turkey, https://www.meditek.com.tr

ISO 9001 quality system conformity studies

I. creation of organization scheme, duties&responsibilities, procedures, processes, reports, forms

II. personal training

III. attending national/international audits

2005/05/30- **COMPULSORY MILITARY SERVICE**

2004/11/30

EDUCATION

2018/09/10- **PhD**

2014/02/13 Middle East Technical University, Department of Aerospace Engineering, Ankara/Turkey, http://www.ae.metu.edu.tr

Thesis: A modulus gradient elasticity model for nano-reinforced composites

studied: nonlocal/gradient elasticity, homogenization, molecular to continuum representation of nanocomposites, molecular dynamics

funded: The Scientific and Technological Research Council of Turkey (TUBITAK)

side project: Mechanical analysis program development and optimization of circular bolted joints in aircraft engines with contact and frictional effects.

2014/03/01, 2015/09/31

studied: structural analysis program development for circular bolted joints with contact and frictional effects

funded: Ministry of Science, Industry and Technology / Turkish Engine Industries (TEI) / METU

2014/01/29- **MS**

2010/02/09 Middle East Technical University, Department of Aerospace Engineering, Ankara/Turkey, http://www.ae.metu.edu.tr

Thesis: Modelling of the delamination in composite T-joints with cohesive zone modelling.

studied: crack initiation and propagation in laminated composite structures under different load cases, fracture mechanics

2004/08/13- **BS**

1999/10/15 Middle East Technical University, Department of Mechanical Engineering, Ankara/Turkey, http://www.me.metu.edu.tr

COURSES

PhD: Computational Inelasticity (CE 7018), Impulsive Loading Of Solids (ME 588), Theory Of Continuous Media (ES 525), Numerical Optimization (IAM 566), Polymer Nanocomposites (METE 560), Nonlinear Procedures In FEM (CE 522), Plasticity and Computer Aided Metal Forming (ME 541), Advanced Analysis Techniques In Structural Engineering (CE 583)

MS: Advanced Mathematics for Engineers (AEE 501 & AEE 502), Fatigue And Fracture Of Aerospace Structures (AEE 718), Composite Materials in Aerospace Structures (AEE 569), Constitutive Modelling Of Engineering Materials (AEE 720), Numerical Solution of Ordinary Differential Equations (ES 510), Finite Element Method (CE 526)

TRAINING

●**Python for Data Science Essential Training Part 2,** LinkedIn by Lillian Pierson, 27.9.2022; ●**Python for Data Science Essential Training Part 1,** LinkedIn by Lillian Pierson, 25.9.2022; ●**MySQL Advanced Topics,** LinkedIn by Bill Weinman, 19.9.2022; ●**MySQL Essential Training,** LinkedIn by Bill Weinman, 17.9.2022; ●**MySQL Installation and Configuration,** LinkedIn by Bill Weinman, 12.9.2022; ●**Access 2019 Essential Training,** LinkedIn by Adam Wilbert, 26.8.2022; ●**Tableau Essential Training (2021),** LinkedIn by Curt Frye, 12.8.2022; ●**Power BI Essential Training (2020),** LinkedIn by Gini von Courter, 4.8.2022; ●**Excel Statistics Essential Training: 1,** LinkedIn by Joseph Schmuller, 1.8.2022; ●**Learning Excel: Data Analysis (2019),** LinkedIn by Curt Frye, 29.7.2022; ●**Connecting with SSH from Linux or Mac: Introduction and advanced topics,** Juan Cabrera, (UNamur) , CECI Belgium, 19.10.2021; ●**Machine learning with Tensorflow: an introduction,** Pieter David, (UCLouvain/CISM), CECI Belgium, 10.11.2020; ●**Introduction to Python,** Jérôme de Favereau, (UCLouvain/CISM), CECI Belgium, 09.11.2020; ●**Introduction to Scripting and Interpreted Languages,** Damien Francois, (UCLouvain/CISM), CECI Belgium, 22.10.2020; ●**Introduction to Linux and the command line,** Bernard Van Renterghem, (UCLouvain/CISM), CECI Belgium, 19.10.2020; ●**Introduction to Object-Oriented Programming with C++,** Olivier Mattelaer (UCLouvain/CISM), CECI Belgium, 24.10.2019; ●**MSCA EF Master Class 2018 @ POLIMI**, Aya van den Kroonenberg, Politecnico di Milano, 11-13.06.2018; ●**Variational Approaches To Inelastic Phenomena In Continuum Mechanics**, Asst. Prof. Giovanni Lancioni, Università Politecnica delle Marche of Ancona, 14-16.02.2017; ●**Density Functional Theory (DFT)**, Assoc. Prof. Hande Toffoli, METU, 26.27.03.2016; ●**MSC Adams**, BIAS, 15-19.04.2013; ●**Project Technical Management**, TAI, 30.01.2013; ●**N D T Inspection Methods**, TAI, 19.10.2012; ●**Effective Presentation Skills**, TAI, 27.09.2012; ●**Introduction for Technical Signatories,** EADS, 17.08.2012; ●**Configuration Management, DTR, Safety, Airworthiness Awareness,** Airbus, 16.08.2012; ●**Str. Concession sup. Eng. Assessment and validation**, Airbus, 25.07.2012; ●**PHP Web Programming**, METU SEM, 25.05.2012-30.06.2012; ●**Resolving Problems and Making Decision,** Baltaş, 14.05.2012; ●**Hypermesh,** DTA, 03-04.04.2012; ●**Change management and change classification,** TAI, 10.02.2012; ●**Titanium world**, VSMPO-AVISMA, 08.02.2012; ●**Communication and Empathy,** Baltaş, 14.09.2011; ●**Product Discipline and FOD Prevention and Control,** TAI, 31.05.2011; ●**MSC Durability and Fatigue Life Estimation,** MSC, 02-03.11.2010; ●**MSC Patran-Nastran Advanced User Training**, MSC, 22-24.03.2010; ●**Fatigue and Damage Tolerance,** TAI, 22-26.12.2008; ●**Basic Composite Materials**, TAI, 10-11.03.2008; ●**DDC_DEFINITION DOSSIER (AIRBUS drawing standards)**, Airbus, 11.12.2007; ●**SAP_DQN,** Airbus, 26.09.2007; ●**Geometric Dimensioning and Tolerancing,** TAI, 28.30.06.2007; ●**Engineering Drawing**, TAI, 26-27.06.2007; ●**Material and Process Technologies,** TAI, 30.05.2007; ●**Teamcenter Engineering Basic Issues,** TAI, 10-11.05.2007; ●**Catia V5,** Cadem A.Ş., July 2006; ●**Resolving Problems and Making Decision**, MESS Eğitim Vakfı, 21-22.03.2006; ●**ISO 9001:2000 Quality Managements System**, Standart Kalite, July 2005

SKILLS & EXPERTISE

developed experience: solid mechanics, FEM, continuum mechanics, nonlocal/gradient elasticity, elasticity/plasticity/fracture/damage, linear/nonlinear analysis, molecular dynamics, multiscale/multiphysics modelling, R&D activities, aerospace structures, structural analysis, composite/metallic materials

developed experience: Catia V5, Abaqus, MSC Patran/Nastran, Matlab, C++, Python, GIT, Linux environment, ISSY/ISAMI (AIRBUS structural analysis tools), Teamcenter,

Data Science: MS Excel, PowerBI, Tableau, MS Access, MySQL, python(numpy, pandas, matplotlib, scikit-learn ML, keras/tensorflow DL)

PUBLICATIONS

Journals:

I. (submitted) **Gülaşık, H.**, Houbben, M., Sánchez, C. P., Vázquez, J. M., Vanderbemden, P., Jérôme, C., Noels, L. "A Thermo-Mechanical, Viscoelasto-Plastic Model for Semi-Crystalline Polymers Exhibiting One-Way and Two-Way Shape Memory Effects Under Phase Change". 2023

II. Toraman, G., Sert, E., **Gülaşık, H.,** Toffoli, D., Üstünel, H., Gürses, E. *"Polymer interfaces with carbon nanostructures: First principles density functional theory and molecular dynamics study of polyetheretherketone (PEEK) adsorption on graphene and nanotubes".* Computational Materials Science 191, 2021, 110320

III. **Gülaşık, H.,** Göktepe, S., Gürses, E. *"A Modulus Gradient Model for Inhomogeneous Materials with Isotropic Linear Elastic Constituents"*, European Journal of Mechanics, 2019, 78

IV. Yıldırım, A., Akay, A.A., **Gülaşık, H.,** Çöker, D., Gürses, E., Kayran, A. *"Development of Bolted Flange Design Tool Based on Artificial Neural Network"*, Journal of Pressure Vessel Technology, 2019, 141, 051203-3

V. **Gülaşık, H.,** Göktepe, S., Gürses, E. 2018. *" A Modulus Gradient Model for an Axially Loaded Inhomogeneous Elastic Rod"*, Meccanica, 53, (2018), 2573–2584

Conference Papers:

I. **Gülaşık, H.**, Göktepe, S., Gürses, E. *" A Modulus Gradient Elasticity Model for Size Effects in Nanocomposites"*, 55th Annual Technical Meeting of the Society of Engineering Science (SES2018), 10 - 12, October 2018, Leganés, Madrid, Spain

II. Koca, O., **Gülaşık, H.**, E. Gürses, *"Alternative Finite Element Based Modeling Apporaches for Carbon Nanotubes"*, 9th Ankara International Aerospace Conference, 20-22 September 2017, Ankara, Turkey

III. Yıldırım, A., Akay, A.A., **Gülaşık, H.**, Çöker, D., Gürses, E., Kayran, A. *"Development of Bolted Flange Design Tool Based On Finite Element Analysis and Artificial Neural Network"*, IMECE 2015 - ASME 2015 International Mechanical Engineering Congress & Exposition, 13-19 November 2015, Houston, Texas, USA

IV. **Gülaşık, H.**, Çöker, D. *"Delamination-Debond Behaviour of Composite T- Joints in Wind Turbine Blades"*, Journal of Physics Conference Series 524(1), (2014), 012043

V. **Gülaşık, H.**, et al. *"Structural Analysis of Composites in Flight Control Surfaces"*, 6th Ankara International Aerospace Conference, 14-16 September 2011, METU, Ankara, TURKEY

Technical Reports:

I. articles, conference papers, technical reports, presentations during MS, PhD and PostDoc

II. national /international meetings with presentations in industry and academy: Airbus, TAI, ASKAM, METU, ULiège

III. technical drawings, design, analysis and test reports for international/national companies: Airbus, TAI, ASKAM

FELLOWSHIPS

Project Researcher, Postdoc

Project : Synthesis, Characterization, and Multi-Scale Modelling of Smart Composite Materials

Funding : Federation of Wallonia

Duration : 2019/04/15 - 2021/12/31

Project Researcher, PhD

Project : Multiscale Material Modelling of CNT Reinforced Polymers

Funding : The Scientific and Technological Research Council of Turkey (TÜBİTAK) 1001 Program/ Department of Aerospace Engineering, Middle East Technical University

Duration : 2015/09/01 – 2018/08/31

Project Researcher, PhD

Project : Aircraft Engine Flanges Structural Design and Analysis Software Development

Funding : Ministry of Science, Industry and Technology of Turkey / Turkish Engine Industries (TEI) / Department of Aerospace Engineering, Middle East Technical University, SANTEZ program project

Duration : 2014/03/01 – 2015/08/31

applied for FUNDING

funded but not attended

Project : Computational Modelling of Degradation in Soft Biological Tissues

Funding : The Scientific and Technological Research Council of Turkey (TÜBİTAK) 2219 Postdoc Fellowship Program / Politecnico di Milano (POLIMI), Department of Civil and Environmental Engineering, Prof. Anna Pandolfi

Duration : 2022 – 2023 (for 1 year)

not funded

Project : Computational Modelling of Degradation in Soft Biological Tissues

Funding : H2020-MSCA-IF-2018 (Marie Skłodowska-Curie Individual Fellowships) Program / Politecnico di Milano (POLIMI), Department of Civil and Environmental Engineering, Prof. Anna Pandolfi

funded

Project : Multiscale material modelling of CNT reinforced polymers

Funding : The Scientific and Technological Research Council of Turkey (TÜBİTAK) 1001 program / Department of Aerospace Engineering, Middle East Technical University, Assoc. Prof. Dr. Ercan Gürses

Duration : 2015/09/01 – 2018/08/31

LANGUAGES

Turkish (mother tongue)

English (advanced)

French (elementary)

Eğitim Bilgileri

Doktora, Orta Doğu Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Fen Bilimleri Enstitüsü, Türkiye 2014 - 2018
Yüksek Lisans, Orta Doğu Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Fen Bilimleri Enstitüsü, Türkiye 2010 - 2014
Lisans, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Makina Mühendisliği Bölümü, Türkiye 1999 - 2004

Yabancı Diller

İngilizce, C2 Ustalık

Yaptığı Tezler

Doktora, A modulus gradient elasticity model for nano-reinforced composites, Orta Doğu Teknik Üniversitesi, Fen Bilimleri Enstitüsü, 2018

Araştırma Alanları

Makina Mühendisliği, Katı Cisimler Mekaniği, Kırılma Mekaniği, Sonlu Elemanlar Yöntemi, Biyomekanik, Mekanik Testler, Sürekli Ortam Mekaniği, Isı ve Madde Transferi, Havacılık ve Uzay Mühendisliği, Malzeme Testi ve Kontrolü, Mekanik Özellikler, Kompozitler, Polimerik Malzemeler, Nanomalzemeler, Termal Özellikler, Yapı-Özellik İlişkisi, Yapı /Mekanizma, Analiz teknikleri, Tasarım teknikleri, Deformasyon, Gerilme, Titreşim ve Gürültü Analizleri, Bağlayıcılar, Test teknikleri, Yer Testleri - Yapısal Testler (Deformasyon, Gerilme, Titreşim, Akustik, vb.), Mühendislik ve Teknoloji

Akademik Unvanlar / Görevler

Dr. Öğr. Üyesi, Dokuz Eylül Üniversitesi, Mühendislik Fakültesi, Havacılık ve Uzay Mühendisliği Bölümü, 2023 - Devam Ediyor

SCI. SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

I. **Polymer interfaces with carbon nanostructures: First principles density functional theory and molecular dynamics study of polyetheretherketone adsorption on graphene and nanotubes**
Toraman G., Sert E., Gulasik H., Toffoli D., TOFFOLİ H., GÜRSES E.
Computational Materials Science, cilt.191, 2021 (SCI-Expanded)

II. **A modulus gradient model for inhomogeneous materials with isotropic linear elastic constituents**
Gülaşık H., GÖKTEPE S., GÜRSES E.
European Journal of Mechanics, A/Solids, cilt.78, 2019 (SCI-Expanded)

III. **Development of Bolted Flange Design Tool Based on Artificial Neural Network**
Yildirim A., AKAY A. A., Gülasik H., ÇÖKER D., GÜRSES E., KAYRAN A.
Journal of Pressure Vessel Technology, Transactions of the ASME, cilt.141, sa.5, 2019 (SCI-Expanded)

IV. **A modulus gradient model for an axially loaded inhomogeneous elastic rod**
Gülaşık H., GÖKTEPE S., GÜRSES E.
Meccanica, cilt.53, sa.10, ss.2573-2584, 2018 (SCI-Expanded)

Hakemli Bilimsel Toplantılarda Yayımlanmış Bildiriler

I. **Development of bolted flange design tool based on finite element analysis and artificial neural network**
Yildirim A., AKAY A. A., Gulasik H., GÜRSES E., ÇÖKER D., KAYRAN A.
ASME 2015 International Mechanical Engineering Congress and Exposition, IMECE 2015, Texas, Amerika Birleşik Devletleri, 13 - 19 Kasım 2015, cilt.9-2015

II. **Delamination-debond behaviour of composite T-joints in wind turbine blades**
Gulasik H., ÇÖKER D.
5th Science of Making Torque from Wind Conference, TORQUE 2014, Copenhagen, Danimarka, 18 - 20 Haziran 2014, cilt.524

Metrikler

Yayın: 6
Atıf (Scopus): 25
H-İndeks (Scopus): 3

Akademi Dışı Deneyim

University of Liège, DOKTORA SONRASI ARAŞTIRMACI
TUSAŞ Havacılık ve Uzay Sanayii A.Ş., Uzman Yapısal Analiz Mühendisi
ASKAM KAMYON İMALAT VE TİCARET A.Ş., Proje Mühendisi
MEDİTEK MEDİKAL ELEKTRONİK SİS. TİC. VE SAN. LTD. ŞTİ., Kalite (Yönetim) Sistem Sorumlusu