

## Doç.Dr. Mesut Kırca

### Kişisel Bilgiler

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### Eğitim Bilgileri

Doktora, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, Türkiye 2007 - 2013

Yüksek Lisans, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, Türkiye 2004 - 2006

Lisans, İstanbul Teknik Üniversitesi, Uçak Ve Uzay Bilimleri Fakültesi, Uçak Mühendisliği Bölümü, Türkiye 1999 - 2004

### Yabancı Diller

İngilizce

### Yaptığı Tezler

Doktora, Mechanics of nanomaterials consisted of random networks, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, 2013

Yüksek Lisans, Mikro hücreli karbon köpüklerin istatistiksel ve sayısal olarak modellenmesi, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, 2006

### Araştırma Alanları

Teknik Bilimler, Makina Mühendisliği, Mekanik, Katı Cisimler Mekaniği , Kırılma Mekaniği , Sonlu Elemanlar Yöntemi , Sürekli Ortam Mekaniği, Havacılık ve Uzay Mühendisliği, Havacılık Mühendisliği, Yapısal Teknolojiler, Malzeme Teknolojileri, Metalik malzemeler

### Akademik Unvanlar / Görevler

Doç.Dr., İstanbul Teknik Üniversitesi, Makina, Makina Mühendisliği, 2013 - Devam Ediyor

Araştırma Görevlisi, University Of Pittsburgh, İnşaat Fakültesi, İnşaat Mühendisliği, 2009 - 2010

### Verdiği Dersler

KATI CİSİMLER MEKANİĞİNİN TEMELLERİ, Yüksek Lisans, 2014 - 2015, 2016 - 2017

FİNİTE ELEMENT ANALYSIS İN ENGINEERING, Lisans, 2016 - 2017

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

- I. **Tensile behavior of nanoporous polyethylene reinforced with carbon-based nanostructures**  
Degirmenci U., Erturk A. S. , Yurtalan M. B. , Kirca M.  
COMPUTATIONAL MATERIALS SCIENCE, cilt.186, 2021 (SCI İndekslerine Giren Dergi)
- II. **Strain rate effects on tensile and compression behavior of nano-crystalline nanoporous gold: A molecular dynamic study**  
Yıldız Y. O. , Ahadi A., Kirca M.  
MECHANICS OF MATERIALS, cilt.143, 2020 (SCI İndekslerine Giren Dergi)
- III. **'Explicit' and 'implicit' non-local continuous descriptions for a plate with circular inclusion in tension**  
Tuna M., Leonetti L., Trovalusci P., Kirca M.  
MECCANICA, cilt.55, sa.4, ss.927-944, 2020 (SCI İndekslerine Giren Dergi)
- IV. **Reverse non-equilibrium molecular dynamics simulations on the thermal conductivity of three-dimensional graphene nano-ribbon foams**  
Değirmenci Ü., Kirca M.  
JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS, cilt.136, 2020 (SCI İndekslerine Giren Dergi)
- V. **Energy dissipation characteristics of covalently-bonded stochastic carbon nanotube networks under compressive loading**  
Kırkayak L., Bilgili D., Kirca M.  
COMPOSITES PART B-ENGINEERING, cilt.172, ss.195-205, 2019 (SCI İndekslerine Giren Dergi)
- VI. **Unification of Eringen's nonlocal parameter through an optimization-based approach**  
Tuna Eroğlu M., Kirca M.  
MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, 2019 (SCI İndekslerine Giren Dergi)
- VII. **Deformation of atomic models and their equivalent continuum counterparts using Eringen's two-phase local/nonlocal model**  
Tuna Eroğlu M., Kirca M., Trovalusci P.  
MECHANICS RESEARCH COMMUNICATIONS, cilt.97, ss.26-32, 2019 (SCI İndekslerine Giren Dergi)
- VIII. **Mechanical performance and morphological evolution of heat-treated nanoporous gold: A molecular dynamics study**  
Erturk A. S. , Yildi Y. O. , Kirca M.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, cilt.108, ss.15-21, 2019 (SCI İndekslerine Giren Dergi)
- IX. **Compression and shear behavior of ultrathin coated nanoporous gold: A molecular dynamics study**  
Yıldız Y. O. , Kirca M.  
JOURNAL OF APPLIED PHYSICS, cilt.124, sa.18, 2018 (SCI İndekslerine Giren Dergi)
- X. **Design and mechanical characterization of a novel carbon-based hybrid foam: A molecular dynamics study**  
Değirmenci Ü., Kirca M.  
COMPUTATIONAL MATERIALS SCIENCE, cilt.154, ss.122-131, 2018 (SCI İndekslerine Giren Dergi)
- XI. **Nanoporous gold reinforced with carbon based nanomaterials: A molecular dynamics study**  
Gülmez D. E. , Yıldız Y. O. , Kirca M.  
COMPOSITES PART B-ENGINEERING, cilt.151, ss.62-70, 2018 (SCI İndekslerine Giren Dergi)
- XII. **Mechanical enhancement of an aluminum layer by graphene coating**  
ERTURK A. S. , Kirca M., Kırkayak L.  
JOURNAL OF MATERIALS RESEARCH, cilt.33, sa.18, ss.2741-2751, 2018 (SCI İndekslerine Giren Dergi)
- XIII. **Mechanical behavior of a novel carbon-based nanostructured aluminum material**  
ERTURK A. S. , Yıldız Y. O. , Kirca M.  
COMPUTATIONAL MATERIALS SCIENCE, cilt.144, ss.193-209, 2018 (SCI İndekslerine Giren Dergi)
- XIV. **Bending, buckling and free vibration analysis of Euler-Bernoulli nanobeams using Eringen's nonlocal integral model via finite element method**  
Tuna M., Kirca M.  
COMPOSITE STRUCTURES, cilt.179, ss.269-284, 2017 (SCI İndekslerine Giren Dergi)

- XV. **Effects of ultrathin coating on the tensile behavior of nanoporous gold**  
Yıldız Y. O. , Kirca M.  
JOURNAL OF APPLIED PHYSICS, cilt.122, sa.8, 2017 (SCI İndekslerine Giren Dergi)
- XVI. **Respond to the comment letter by Romano and Barretta on the paper “Exact solution of Eringen's nonlocal integral model for bending of Euler–Bernoulli and Timoshenko beams”**  
TUNA M., Kirca M.  
International Journal of Engineering Science, cilt.116, ss.141-144, 2017 (SCI Expanded İndekslerine Giren Dergi)
- XVII. **The effects of intertube bridging through graphene nanoribbons on the mechanical properties of pillared graphene**  
Bilgili D., Kırkayak L., Kirca M.  
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- XVIII. **Atomistic simulation of Voronoi-based coated nanoporous metals**  
Yıldız Y. O. , Kirca M.  
MODELLING AND SIMULATION IN MATERIALS SCIENCE AND ENGINEERING, cilt.25, sa.2, 2017 (SCI İndekslerine Giren Dergi)
- XIX. **Homogenization of additive manufactured polymeric foams with spherical cells**  
Zeinalabedini H., Yıldız Y. O. , Zhang P., Laux K., Kirca M., To A. C.  
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- XX. **Exact solution of Eringen's nonlocal integral model for vibration and buckling of Euler-Bernoulli beam**  
Tuna M., Kirca M.  
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- XXI. **Exact solution of Eringen's nonlocal integral model for bending of Euler-Bernoulli and Timoshenko beams**  
Tuna M., Kirca M.  
INTERNATIONAL JOURNAL OF ENGINEERING SCIENCE, cilt.105, ss.80-92, 2016 (SCI İndekslerine Giren Dergi)
- XXII. **Effects of lithium doping on hydrogen storage properties of heat welded random CNT network structures**  
Baykasoglu C., Ozturk Z., Kirca M., Celebi A. T. , MUGAN A., TO A. C.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.41, sa.19, ss.8246-8255, 2016 (SCI İndekslerine Giren Dergi)
- XXIII. **Sandwiched graphene-fullerene composite: A novel 3-D nanostructured material for hydrogen storage**  
Ozturk Z., Baykasoglu C., Kirca M.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.41, sa.15, ss.6403-6411, 2016 (SCI İndekslerine Giren Dergi)
- XXIV. **Design and analysis of sandwiched fullerene-graphene composites using molecular dynamics simulations**  
Kirca M.  
COMPOSITES PART B-ENGINEERING, cilt.79, ss.513-520, 2015 (SCI İndekslerine Giren Dergi)
- XXV. **Efficient Design-Optimization of Variable-Density Hexagonal Cellular Structure by Additive Manufacturing: Theory and Validation**  
Zhang P., TOMAN J., YU Y., BIYIKLI E., Kirca M., CHMIELUS M., TO A. C.  
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- XXVII. **Tensile behavior of heat welded CNT network structures**  
Celebi A. T. , KIRCA M., Baykasoglu C., Muğan A., TO A. C.  
COMPUTATIONAL MATERIALS SCIENCE, cilt.88, ss.14-21, 2014 (SCI İndekslerine Giren Dergi)

- XXVIII. **Nonlinear failure analysis of carbon nanotubes by using molecular-mechanics based models**  
Baykasoglu C., Kirca M., MUGAN A.  
COMPOSITES PART B-ENGINEERING, cilt.50, ss.150-157, 2013 (SCI İndekslerine Giren Dergi)
- XXIX. **A stochastic algorithm for modeling heat welded random carbon nanotube network**  
Kirca M., YANG X., To A. C.  
COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING, cilt.259, ss.1-9, 2013 (SCI İndekslerine Giren Dergi)
- XXX. **Thermal conductivity of periodic array of intermolecular junctions of silicon nanowires**  
Yang X., TO A. C. , Kirca M.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, cilt.44, sa.1, ss.141-145, 2011 (SCI İndekslerine Giren Dergi)
- XXXI. **On determining the thermal state of individual atoms in molecular dynamics simulations of nonequilibrium processes in solids**  
Fu Y., Kirca M., To A. C.  
CHEMICAL PHYSICS LETTERS, cilt.506, ss.290-297, 2011 (SCI İndekslerine Giren Dergi)
- XXXII. **Surface structure and properties of functionalized nanodiamonds: a first-principles study**  
Datta A., Kirca M., FU Y., To A. C.  
NANOTECHNOLOGY, cilt.22, sa.6, 2011 (SCI İndekslerine Giren Dergi)
- XXXIII. **Ligament and joint sizes govern softening in nanoporous aluminum**  
To A. C. , TAO J., Kirca M., SCHALK L.  
APPLIED PHYSICS LETTERS, cilt.98, sa.5, 2011 (SCI İndekslerine Giren Dergi)
- XXXIV. **Computational modeling of micro-cellular carbon foams**  
Kirca M., GUL A., EKINCI E., Yardim F., MUGAN A.  
FINITE ELEMENTS IN ANALYSIS AND DESIGN, cilt.44, ss.45-52, 2007 (SCI İndekslerine Giren Dergi)

## Diğer Dergilerde Yayınlanan Makaleler

- I. **Compressive behavior and deformation mechanism of nanoporous open-cell foam with ultrathin ligaments**  
GIRI A., TAO J., WANG L., Kirca M., To A. C.  
Journal of Nanomechanics and Micromechanics, cilt.4, sa.2, 2014 (Diğer Kurumların Hakemli Dergileri)
- II. **Mechanical properties of SWNT X-Junctions through molecular dynamics simulation**  
Stormer B., Piper N., Yang X., TAO J., FU Y., Kirca M., To A.  
International Journal of Smart and Nano Materials, cilt.3, sa.1, ss.33-46, 2012 (Diğer Kurumların Hakemli Dergileri)

## Kitap & Kitap Bölümleri

- I. **Mechanics of CNT Network Materials**  
KIRCA M., TO A. C.  
Advanced Computational Nanomechanics, Nuno Silvestre, Editör, WILEY, 2016

## Atıflar

Toplam Atıf Sayısı (WOS):688

h-indeksi (WOS):13