

## Asst. Prof. Ayşe Çağıl Kandemir

### Personal Information

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### International Researcher IDs

ORCID: 0000-0001-7378-0202

Publons / Web Of Science ResearcherID: G-6870-2018

Yoksis Researcher ID: 164417

### Biography

Dr. Ayşe Çağıl Kandemir received her bachelor's (2004-2008) and master's degrees (2008-2011) from METU Metallurgical and Materials Engineering Department. She started her academic career as a research assistant in the same department. She completed her doctoral studies in the Materials Science Department of ETH Zürich between 2011-2016. She worked as a research assistant in ETH Zürich for four years.

Her research interests include composite and nanocomposite materials, surface science/thin films, atomic force microscopy/lithography. Since June 2018, she has been a faculty member at TEDU Mechanical Engineering Department.

### Education Information

Doctorate, ETH Zurich, Switzerland 2011 - 2016

Postgraduate, Middle East Technical University, Turkey 2008 - 2011

Undergraduate, Middle East Technical University, Turkey 2003 - 2008

### Academic Titles / Tasks

Assistant Professor, TED University, Faculty of Engineering, Department of Mechanical Engineering, 2018 - Continues

### Academic and Administrative Experience

Head of Department, TED University, Graduate School, Mechatronics Engineering, 2022 - Continues

Library, 2020 - Continues

Assistant Director of the Institute, TED University, Graduate School, 2023 - 2024

### Courses

Fundamentals of Composite Materials, Undergraduate, 2023 - 2024, 2022 - 2023, 2019 - 2020, 2018 - 2019

Materials Science, Undergraduate, 2023 - 2024, 2022 - 2023, 2020 - 2021, 2019 - 2020, 2018 - 2019

Nanomaterials and Nanotechnology, Undergraduate, 2023 - 2024, 2021 - 2022, 2019 - 2020, 2018 - 2019

Numerical Methods in Engineering, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Composite Materials, Postgraduate, 2021 - 2022  
Transducer Materials and Technology, Postgraduate, 2019 - 2020, 2018 - 2019

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Assessment of compatibility of dextran/PEMA blends by thermal, topologic and viscoelastic analysis**  
KAVLAK S., Kandemir A. Ç., Can H. K.  
Carbohydrate Polymers, vol.348, 2025 (SCI-Expanded)
- II. **Comparative fracture surface analysis of adhesively bonded dissimilar lap joints: Nanosilica effect**  
Dizeci Ş., Khabaz-Aghdam A., Kandemir A. Ç.  
Polymer Composites, vol.45, no.15, pp.13676-13687, 2024 (SCI-Expanded)
- III. **Biocompatible organic coating fabrication via polymer/clay nanocomposites: Evaluation of mechanical improvements**  
Kandemir A. Ç., Donmez F., Can H. K.  
Polymer Composites, vol.45, no.3, pp.2352-2366, 2024 (SCI-Expanded)
- IV. **Design and fabrication of polymer micro/nano composites with two-level mechanical reinforcing procedure**  
Kandemir A. Ç., Donmez F., Davut K., Can H. K.  
Polymer Composites, vol.43, no.7, pp.4609-4625, 2022 (SCI-Expanded)
- V. **Biocompatible nanocomposite production via nanoclays with diverse morphology**  
Donmez F., Kandemir A. Ç., Can H. K.  
International Journal of Polymer Analysis and Characterization, vol.27, no.3, pp.158-179, 2022 (SCI-Expanded)
- VI. **Gradient nanocomposite printing by dip pen nanolithography**  
Kandemir A. Ç., Ramakrishna S. N., Erdem D., Courty D., Spolenak R.  
Composites Science and Technology, vol.138, pp.186-200, 2017 (SCI-Expanded)
- VII. **Polymer nanocomposite patterning by dip-pen nanolithography**  
Kandemir A. Ç., Erdem D., Ma H., Reiser A., Spolenak R.  
Nanotechnology, vol.27, no.13, 2016 (SCI-Expanded)
- VIII. **Liquid-phase deposition of ferroelectrically switchable nanoparticle-based BaTiO<sub>3</sub> films of macroscopically controlled thickness**  
Erdem D., Shi Y., Heiligtag F., Kandemir A. Ç., Tervoort E., Rupp J., Niederberger M.  
Journal of Materials Chemistry C, vol.3, no.38, pp.9833-9841, 2015 (SCI-Expanded)
- IX. **Use of zinc borate as the third component of a traditional brominated flame retardant system in acrylonitrile butadiene styrene**  
KAYNAK C., Kandemir A. Ç.  
Fire and Materials, vol.37, no.7, pp.491-502, 2013 (SCI-Expanded)
- X. **Contribution of nanoclays to the performance of traditional flame retardants in ABS**  
Kandemir A. Ç., KAYNAK C.  
Polymer Composites, vol.33, no.3, pp.420-429, 2012 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Effects of Silica/Clay Nanoparticles on Microstructural and Mechanical Properties of Epoxy Based Adhesives**  
Dizeci Ş., Kandemir A. Ç.  
Hacettepe Journal of Biology and Chemistry, vol.2, no.51, pp.153-161, 2023 (Peer-Reviewed Journal)
- II. **CONTRIBUTION OF MICRO-SILICA AND NANO-MONTMORILLONITE REINFORCEMENTS ON THE MECHANICAL PROPERTIES OF UV-CURABLE THERMOSET RESIN**

## Refereed Congress / Symposium Publications in Proceedings

- I. **Multi-Scaled Polymer Nanocomposite Fabrication**  
Kandemir A. Ç.  
8th International Conference on MATERIALS SCIENCE & ENGINEERING, Paris, France, 21 - 22 September 2023, pp.1
- II. **Bioinspired Hierarchical Composite: Balancing Toughness and Strength through Multi-Scale Design**  
Kandemir A. Ç., Dizeci Ş., Music O., Donmez F., Kaplan Can H.  
MecaNano 2nd General Meeting , Vienna, Austria, 1 - 03 May 2024, pp.19
- III. **Machine Learning-Driven Prediction of Elastic Modulus in Clay-Reinforced Polymer Nanocomposites**  
Nur Yılmaz G., Kandemir A. Ç.  
MecaNano 2nd General Meeting , Vienna, Austria, 1 - 03 May 2024, pp.78
- IV. **Design and Fabrication of Green Nanocomposites of Poly(N-vinyl pyrrolidone)**  
Kandemir A. Ç., Dönmez F., Kaplan Can H.  
3rd International Conference on Polymer Science and Composite Materials, Rome, Italy, 3 - 05 October 2022, pp.13
- V. **Biocompatible Polymer Micro/Nano Composite Fabrication via two-level Mechanical Reinforcement**  
Kandemir A. Ç., Dönmez F., Kaplan Can H.  
5th Edition of Conference on Nanotechnology, Massachusetts, United States Of America, 12 September 2022, pp.1
- VI. **Fabrication and Nanomechanical Analysis of Organic Coatings**  
Özkan A. G., Ayadenk G., Boydaş S., Kandemir A. Ç.  
16th Nanoscience and Nanotechnology Conference, Ankara, Turkey, 5 - 08 September 2022, pp.303
- VII. **Poly(N-vinyl pyrrolidone) and Tubular/Layered Clay Green Nanocomposites: Synthesis and Characterization**  
donmez f., Kandemir A. Ç., Kaplan Can H.
- VIII. **Polivinil pirolidon (PVP)/Halloysit Nanokompozitlerin Sentezi ve Karakterizasyonu**  
Dönmez F., Kaplan Can H., Kandemir A. Ç.
- IX. **Polymer Patterning by Dip Pen Nanolithography**  
Kandemir A. Ç., Spolenak R.
- X. **Polymer and Polymer Nanocomposite Patterning by Dip Pen Nanolithography**  
Kandemir A. Ç., Erdem D., Niederberger M., Spolenak R.
- XI. **USING MICRO AND NANO COMPOSITE APPROACHES TO IMPROVE FLAME RETARDANCY OF ABS**  
Kaynak C., Ozkaraca A. C., Kandemir A. Ç.
- XII. **Using micro-and nano-composite approaches to improve flame retardancy of ABS**  
KAYNAK C., Kandemir A. Ç.  
15th European Conference on Composite Materials: Composites at Venice, ECCM 2012, Venice, Italy, 24 - 28 June 2012
- XIII. **Use of Montmorillonite with Traditional Flame Retardants in Acrylonitrile Butadiene Styrene by Nanocomposite Approach**  
Kandemir A. Ç., Kaynak C.
- XIV. **Flammability of Recycled Polyethylene Terephthalate with Boron Compounds and Two Traditional Flame Retardants,**  
Kandemir A. Ç., Kaynak C.

## Supported Projects

Kandemir (Working Group Member) A. Ç., TÜBİTAK - AB COST Project, European Materials Acceleration Center for Energy (EU-MACE), 2023 - 2027

Çakır Hatır (Management Committee) P., Hanay (Management Committee) M. S., Kandemir (Working Groups) A. Ç., Nur Yılmaz Working Group Member) G., TÜBİTAK - AB COST Project, European Network for the Mechanics of Matter at the Nano-Scale (MecaNano), 2022 - 2026

Numanoğlu Genç A., Kökpınar M. A., Baş O., Kandemir A. Ç., Nur Yılmaz G., Kaplan Can H., Gögüş M., TUBITAK Project, Düzenli Ve Düzensiz Şekilli Mikroplastik Parçacıkların Çökelme Hızlarının Deneysel, Sayısal Ve Derin Öğrenmeye Dayanan Yöntemlerle Araştırılması, 2023 - 2025

Kandemir A. Ç., Sajid A., Rafiq T., Khan M. A., Project Supported by Higher Education Institutions, Multi-scaled Bio-Composite Fabrication via Spatially Graded Particles, 2023 - 2024

Dızeci Ş., Kandemir A. Ç., TUBITAK Project, "Farklı Malzemelerin Yapıştırılmasında Kapsayıcı Hasar Tespit Modelinin Geliştirilmesi", 2022 - 2024

Kandemir A. Ç., Project Supported by Higher Education Institutions, Nacre-Mimetic Biofilm Production, 2020 - 2022

Kandemir A. Ç., Dızeci Ş., TUBITAK Project, Biyolojik Sistemlerden Esinlenmiş Hiyerarşik Ölçekli ve Parçacık Yoğunluğuna göre Değişen Polimer Kompozit Üretimi, 2019 - 2022

Demiral O. A., KANDEMİR A. Ç., Project Supported by Higher Education Institutions, Green Nanocomposite Production, 2020 - 2021

Baytaroglu S. A., KANDEMİR A. Ç., Project Supported by Higher Education Institutions, Bioinspired Hierarchical Composites, 2019 - 2020

## **Scientific Research / Working Group Memberships**

Ca22123 - European Materials Acceleration Center For Energy (Eu-Mace), Belgium, <https://eu-mace.eu/>, 2023 - Continues

Ca21121 - European Network For The Mechanics Of Matter At The Nano-Scale (Mecanano), Belgium, <https://www.cost.eu/actions/CA21121/>, 2023 - Continues