

Asst. Prof. Ayşe Özge Kürkcüoğlu Levitas

Personal Information

Email: olevitas@itu.edu.tr

Education Information

Doctorate, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Turkey 2003 - 2008

Postgraduate, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Turkey 2001 - 2003

Undergraduate, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Turkey 1996 - 2001

Foreign Languages

English

Dissertations

Doctorate, Mixed-resolution elastic network models for biological supramolecules, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2008

Postgraduate, Mixed Coarse-Graining of Large Proteins Using Elastic Network Model , Boğaziçi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2003

Research Areas

Simulation and Modelling, Chemical Engineering and Technology

Academic Titles / Tasks

Associate Professor, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2021 - Continues

Assistant Professor, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2018 - 2021

Assistant Professor, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2013 - 2018

Lecturer PhD, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2010 - 2013

Research Assistant, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2001 - 2008

Courses

Mathematical Modeling in Chemical Engineering, Undergraduate, 2016 - 2017

Kimya Mühendisliği Tasarım I, Undergraduate, 2016 - 2017

INTRODUCTION TO SCIENTIFIC AND ENGINEERING COMPUTING, Undergraduate, 2015 - 2016

Jury Memberships

Doctorate, Tez Savunma Jürisi, Boğaziçi Üniversitesi, May, 2016

Post Graduate, Tez Savunma Jürisi, İstanbul Teknik Üniversitesi, May, 2016

Post Graduate, Tez Savunma Jürisi, Boğaziçi Üniversitesi, June, 2014

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

- I. **Monte Carlo and Molecular Dynamics Simulations suggest controlled release of corticosteroids from mesoporous host MIL-101 (Cr)**
Koroglu M. A. , Kurkcuoglu O., Sungur F. A.
MOLECULAR SIMULATION, vol.47, no.18, pp.1530-1539, 2021 (Journal Indexed in SCI)
- II. **Repurposing of FDA-approved drugs against active site and potential allosteric drug-binding sites of COVID-19 main protease**
Yüce M., Çiçek E., Inan T., Dag A. B. , Kurkcuoglu O., Sungur F. A.
PROTEINS-STRUCTURE FUNCTION AND BIOINFORMATICS, vol.89, no.11, pp.1425-1441, 2021 (Journal Indexed in SCI)
- III. **Elucidating doxycycline loading and release performance of imprinted hydrogels with different cross-linker concentrations: a computational and experimental study**
Inan T., Dalgakıran D., Kurkcuoglu O., Güner F. S.
JOURNAL OF POLYMER RESEARCH, vol.28, no.11, 2021 (Journal Indexed in SCI)
- IV. **2-Thiobarbituric acid addition improves structural integrity and controlled drug delivery of biocompatible pectin hydrogels**
Guner O. Z. , Kocaaga B., Batirel S., Kurkcuoglu O., Guner F. S.
INTERNATIONAL JOURNAL OF POLYMERIC MATERIALS AND POLYMERIC BIOMATERIALS, vol.70, no.10, pp.703-711, 2021 (Journal Indexed in SCI)
- V. **Fmoc-PEG Coated Single-Wall Carbon Nanotube Carriers by Non-covalent Functionalization: An Experimental and Molecular Dynamics Study**
Yeniyurt Y., Kilic S., Guner-Yilmaz O. Z. , Bozoglu S., Meran M., Baysak E., Kurkcuoglu O., Hızal G., Karatepe N., Batirel S., et al.
FRONTIERS IN BIOENGINEERING AND BIOTECHNOLOGY, vol.9, 2021 (Journal Indexed in SCI)
- VI. **Computational assessment of thermostability in miRNA:CNT system using molecular dynamics simulations**
Güvensoy Morkoyun A., Kurkcuoglu O.
BIOCHIMICA ET BIOPHYSICA ACTA-GENERAL SUBJECTS, vol.1865, no.2, 2021 (Journal Indexed in SCI)
- VII. **Local and Global Motions Underlying Antibiotic Binding in Bacterial Ribosome**
Kurkcuoglu O., Gunes M. U. , Haliloğlu T.
JOURNAL OF CHEMICAL INFORMATION AND MODELING, vol.60, no.12, pp.6447-6461, 2020 (Journal Indexed in SCI)
- VIII. **Exploring Allosteric Signaling in the Exit Tunnel of the Bacterial Ribosome by Molecular Dynamics Simulations and Residue Network Model**
Güzel P., Yildirim H. Z. , Yüce M., Kurkcuoglu O.
FRONTIERS IN MOLECULAR BIOSCIENCES, vol.7, 2020 (Journal Indexed in SCI)
- IX. **Low-methoxyl pectin-zeolite hydrogels controlling drug release promote in vitro wound healing**
Kocaaga B., Kurkcuoglu O., Tatlıer M., BATIREL S., Güner F. S.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.136, no.24, 2019 (Journal Indexed in SCI)
- X. **Molecular dynamics simulations of adsorption of long pyrene-PEG chains on a thin carbon nanotube**
Akkus P. D. , Kürkçüoğlu Levitas A. Ö.
TURKISH JOURNAL OF CHEMISTRY, vol.43, no.4, pp.1159-1169, 2019 (Journal Indexed in SCI)
- XI. **A computational and experimental approach to develop minocycline-imprinted hydrogels and determination of their drug delivery performances**
Eroglu B., Dalgakıran D., Inan T., Kurkcuoglu O., Güner F. S.

JOURNAL OF POLYMER RESEARCH, vol.25, no.12, 2018 (Journal Indexed in SCI)

- XII. **Exploring allosteric communication in multiple states of the bacterial ribosome using residue network analysis**
Kurkcuoglu O.
TURKISH JOURNAL OF BIOLOGY, vol.42, no.5, pp.392-404, 2018 (Journal Indexed in SCI)
- XIII. **Identification of potential allosteric communication pathways between functional sites of the bacterial ribosome by graph and elastic network models**
Guzel P., Kürkçüoğlu Levitas A. Ö.
Biochimica Et Biophysica Acta-General Subjects, vol.1861, pp.3131-3141, 2017 (Journal Indexed in SCI Expanded)
- XIV. **A multiscale investigation on controlling bovine serum albumin adsorption onto polyurethane films**
Kurkcuoglu S. S. , Kürkçüoğlu Levitas A. Ö. , Güner F. S.
JOURNAL OF APPLIED POLYMER SCIENCE, pp.1-14, 2017 (Journal Indexed in SCI Expanded)
- XV. **Conformational dynamics of bacterial trigger factor in apo and ribosome-bound states**
Can M. T. , Kurkcuoglu Z., Ezeroglu G., Uyar A., Kurkcuoglu O., Doruker P.
PLOS ONE, vol.12, no.4, 2017 (Journal Indexed in SCI)
- XVI. **The elastic network model reveals a consistent picture on intrinsic functional dynamics of type II restriction endonucleases**
Uyar A. Ö. , Kurkcuoglu O., Nilsson L., Doruker P.
PHYSICAL BIOLOGY, vol.8, no.5, 2011 (Journal Indexed in SCI)
- XVII. **Mechanism of Cohesin Loading onto Chromosomes: A Conformational Dynamics Study**
Kurkcuoglu O., BATES P. A.
BIOPHYSICAL JOURNAL, vol.99, no.4, pp.1212-1220, 2010 (Journal Indexed in SCI)
- XVIII. **Focused Functional Dynamics of Supramolecules by Use of a Mixed-Resolution Elastic Network Model**
Kurkcuoglu O., Turgut O. T. , Cansu S., Jernigan R. L. , Doruker P.
BIOPHYSICAL JOURNAL, vol.97, no.4, pp.1178-1187, 2009 (Journal Indexed in SCI)
- XIX. **Collective dynamics of the ribosomal tunnel revealed by elastic network modeling**
Kurkcuoglu O., Kurkcuoglu Z., Doruker P., Jernigan R. L.
PROTEINS-STRUCTURE FUNCTION AND BIOINFORMATICS, vol.75, no.4, pp.837-845, 2009 (Journal Indexed in SCI)
- XX. **The ribosome structure controls and directs mRNA entry, translocation and exit dynamics**
Kurkcuoglu O., Doruker P., SEN T. Z. , Kloczkowski A., Jernigan R. L.
PHYSICAL BIOLOGY, vol.5, no.4, 2008 (Journal Indexed in SCI)
- XXI. **Loop motions of triosephosphate isomerase observed with elastic networks**
Kurkcuoglu O., JERNIGAN R., DORUKER P.
BIOCHEMISTRY, vol.45, no.4, pp.1173-1182, 2006 (Journal Indexed in SCI)
- XXII. **Collective dynamics of large proteins from mixed coarse-grained elastic network model**
Kurkcuoglu O., JERNIGAN R., DORUKER P.
QSAR & COMBINATORIAL SCIENCE, vol.24, no.4, pp.443-448, 2005 (Journal Indexed in SCI)
- XXIII. **Mixed levels of coarse-graining of large proteins using elastic network model succeeds in extracting the slowest motions**
Kurkcuoglu O., JERNIGAN R., DORUKER P.
POLYMER, vol.45, no.2, pp.649-657, 2004 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Preparation and Determination of In Vivo and In Vitro Performance of Doxycycline Imprinted Contact Lenses for Corneal Neovascularization Treatment.**
ERKAL İLHAN S., KÜRKÇÜOĞLU LEVİTAS A. Ö. , İNAN T., güner ö. z. , DALGAKIRAN D., okutan b., torun köse g., okçu heper a., gürses ö., GÜNER F. S.
Journal of the Turkish Chemical Society, Section A: Chemistry, vol.5, no.3, pp.1185-1192, 2018 (Other Refereed)

Books & Book Chapters

- I. **Kaba Ölçekli Elastik Ağyapı Modelleri ve Bakteriyel Ribozomun Yapı-İşlev İlişkisi**
Güzel P., Kürkçüoğlu Levitas A. Ö.
in: Protein: Yapısı, Mühendisliği, Etkileşimleri, Dinamiği ve İlaç Tasarımındaki Yeri, Saliha Ece Acuner, Editor, Ankara Nobel Tıp Yayınevi, Ankara, pp.259-271, 2021
- II. **Polyurethanes: Surface Protein Adsorption**
Kürkçüoğlu Levitas A. Ö. , Güner F. S.
in: Encyclopedia of Biomedical Polymers and Polymeric Biomaterials, Munmaya Mishra, Editor, Taylor And Francis Group Publishing, Park Drive, pp.6724-6742, 2015
- III. **Coarse-graining the nano-machine ribosome to elucidate its functional dynamics**
Kürkçüoğlu Levitas A. Ö. , DORUKER P.
in: Ribosomes: Molecular Structure, Role in Biological Functions and Implications for Genetic Diseases, Zhou Lin, Wang Liu, Editor, Nova Science Specialty Technical Publishers, Inc. (Stp), Hauppauge, pp.119-132, 2013
- IV. **Elastic network models of coarse-grained proteins are effective for studying the structural control exerted over their dynamics**
Song G., DORUKER P., JERNIGAN R. L. , Kürkçüoğlu Levitas A. Ö. , Yang L.
in: Coarse-Graining of Condensed Phase and Biomolecular Systems, Voth G., Editor, Taylor & Francis Group, Llc, Boca Raton, pp.237-254, 2008

Supported Projects

- Kürkçüoğlu Levitas A. Ö. , Güner F. S. , Kocaağa A. B. , Project Supported by Higher Education Institutions, Kontrollü İlaç Salımı için Zeolit-Pektin Kompozitlerin Hesaplamalı ve Deneysel Yöntemlerle Geliştirilmesi, 2018 - 2019
- Kürkçüoğlu Levitas A. Ö. , Project Supported by Higher Education Institutions, Serum Proteinlerinde Dinamik, Esneklik ve Yüze Özelliğlerinin Protein Adsorpsiyonuna Etkilerinin Araştırılması, 2015 - 2018
- Kürkçüoğlu Levitas A. Ö. , Project Supported by Higher Education Institutions, Bakteriyel Ribozomun İşlevsel Bölgeleri Arasındaki Alternatif Haberleşme Yolları, 2013 - 2018
- Kürkçüoğlu Levitas A. Ö. , Project Supported by Higher Education Institutions, Protein Yapılarında İşlevsel Bölgelerin Arasındaki Haberleşme Yollarının Elastik Ağyapı Yaklaşımıyla Belirlenmesi, 2012 - 2017

Edit Congress and Symposium Activities

- 5th International BAU Drug Design Congress, Attendee, Turkey, 2017
- International Symposium on Chemistry Via Computation, Attendee, İstanbul, Turkey, 2017
- 4th International BAU Drug Design Congress, Attendee, Turkey, 2016
- Ulusal Kimya Mühendisliği Kongresi, Attendee, İzmir, Turkey, 2016
- BAU 3rd Drug Design Congress, Attendee, Turkey, 2015
- Molecular Chemistry, Attendee, Turkey, 2014
- 2nd International BAU Drug Design Congress, Attendee, Turkey, 2014
- Biophysical Society Thematic Meeting, Attendee, Turkey, 2014
- 2nd International Congress of the Molecular Biology Association of Turkey, Attendee, Turkey, 2013
- EMBO Conference on Allosteric Interactions in Cell Signalling and Regulation, Attendee, Paris, France, 2013

Citations

Total Citations (WOS):274

h-index (WOS):8