

## Assoc. Prof. ÖZGÜL PERSİL ÇETİNKOL

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: AAZ-6526-2020

ScopusID: 25722721800

Yoksis Researcher ID: 188365

### Education Information

Doctorate, Georgia Institute of Technology, College of Sciences, School Of Chemistry and Biochemistry, United States Of America 2002 - 2008

Undergraduate, Koc University, Faculty Of Science, Department Of Chemistry, Turkey 1997 - 2002

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, SMALL MOLECULE RECOGNITION OF HOMOPURINE NUCLEIC ACID STRUCTURES, Georgia Institute Of Technology, School Of Chemistry And Biochemistry, 2008

### Research Areas

Chemistry, Biochemistry, Natural Sciences

### Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, 2018 - Continues

Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, 2015 - 2018

Assistant Professor, Dogus University, Faculty Of Arts And Sciences, Department Of Chemistry, 2010 - 2012

Research Assistant, Lawrence Berkeley National Laboratory, Physical Biosciences Division, Joint Bioenergy Institute,

2008 - 2010

Research Assistant, Georgia Institute of Technology, College Of Sciences, School Of Chemistry And Biochemistry, 2002 - 2008

## Academic and Administrative Experience

Deputy Head of Department, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, 2018 - 2021

## Courses

General Chemistry II, Undergraduate, 2020 - 2021

BIOCHEMISTRY, Undergraduate, 2019 - 2020, 2018 - 2019

ADVANCED CHEMICAL PERSECTIVES IN BIOCHEMISTRY, Postgraduate, 2019 - 2020

GENERAL CHEMISTRY I, Undergraduate, 2019 - 2020

CHEMISTRY OF METABOLIC PATHWAYS, Undergraduate, 2017 - 2018

General Chemistry, Undergraduate, 2016 - 2017

## Advising Theses

PERSİL ÇETİNKOL Ö., Investigating the interactions of poly(A)-coralyne in crowded environments and the effect of DNA methylation on DDD-lysine and DDD-arginine interactions, Postgraduate, Z.SUVACI(Student), 2022

PERSİL ÇETİNKOL Ö., Affinity and selectivity of azacyanines to G-quadruplex forming promoter regions, Postgraduate, F.NUR(Student), 2022

PERSİL ÇETİNKOL Ö., Electrochemical detection of oxaliplatin induced DNA damage in G-quadruplex structures, Postgraduate, S.CAN(Student), 2022

PERSİL ÇETİNKOL Ö., Synthesis of highly fluorescent N, S co-doped carbon quantum dots and their application in fluorometric detection of G-quadruplex forming HER2 promoter region, Postgraduate, Z.İREM(Student), 2022

PERSİL ÇETİNKOL Ö., G-quadruplexes: Targeting with azacyanines and application to hydroxychloroquine detection, Postgraduate, K.DOĞAN(Student), 2022

PERSİL ÇETİNKOL Ö., A new method for hydroxychloroquine detection, Postgraduate, D.ÜNAL(Student), 2022

PERSİL ÇETİNKOL Ö., Investigating the interactions of azacyanines with triplex nucleic acids, Postgraduate, S.Tütüncü(Student), 2020

Persil Çetinkol Ö., Targeting human telomeric DNA with azacyanines, Postgraduate, A.DOĞU(Student), 2019

PERSİL ÇETİNKOL Ö., INSIGHTS INTO THE ACTION MECHANISM OF AZACYANINES: THEIR TOPOISOMERASE II $\alpha$  INHIBITION POTENTIAL AND NUCLEIC ACID SELECTIVITY, Postgraduate, S.Güloğlu(Student), 2018

Persil Çetinkol Ö., Insights into the action mechanism of azacyanines: Their topoisomerase ii $\alpha$  inhibition potential and nucleic acid selectivity, Postgraduate, S.GÜLOĞLU(Student), 2018

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

### I. Fluorometric and colorimetric platforms for rapid and sensitive hydroxychloroquine detection in aqueous samples

Doğan K., Ünal Taş D., Persil Çetinkol Ö., Forough M.  
TALANTA, vol.270, 2024 (SCI-Expanded)

### II. Electrochemical detection of Oxaliplatin induced DNA damage in G-quadruplex structures

Osmanoğulları S. C., FOROUGH M., PERSİL ÇETİNKOL Ö., UDUM Y., Toppare L.  
ANALYTICAL BIOCHEMISTRY, vol.671, 2023 (SCI-Expanded)

- III. **Coumarin 6H-fused fluorescent probe for highly sensitive detection of coralyne using oligonucleotide-modified silver nanoparticles.**  
Usta H. M., Forough M., Persil Çetinkol Ö.  
Analytical and bioanalytical chemistry, vol.414, no.24, pp.7299-7313, 2022 (SCI-Expanded)
- IV. **A CpG island promoter drives the CXXC5 gene expression**  
Yasar P., Kars G., Yavuz K., Ayaz G., Oguztuzun C., Bilgen E., Suvaci Z., Cetinkol Ö., CAN T., MUYAN M.  
SCIENTIFIC REPORTS, vol.11, no.1, 2021 (SCI-Expanded)
- V. **Highly-sensitive and fast detection of human telomeric G-Quadruplex DNA based on a hemin-conjugated fluorescent metal-organic framework platform**  
Javan Kouzegaran V., Farhadi K., Forough M., Bahram M., Persil Çetinkol Ö.  
Biosensors and Bioelectronics, vol.178, 2021 (SCI-Expanded)
- VI. **Doxorubicin exhibits strong and selective association with VEGF Pu22 G-quadruplex**  
Bilgen E., Persil Çetinkol Ö.  
Biochimica et Biophysica Acta - General Subjects, vol.1864, 2020 (SCI-Expanded)
- VII. **Construction of amperometric biosensor modified with conducting polymer/carbon dots for the analysis of catechol**  
Yasa M., Deniz A., Forough M., YILDIRIM E., PERSİL ÇETİNKOL Ö., Udum Y. A., TOPPARE L. K.  
Journal of Polymer Science, vol.58, no.23, pp.3336-3348, 2020 (SCI-Expanded)
- VIII. **Novel fluorescent azacyanine compounds: Improved synthesis and optical properties**  
Doğan K., Gülkaya A., Forough M., Persil Ç.  
ACS Omega, vol.5, no.36, pp.22874-22882, 2020 (SCI-Expanded)
- IX. **A conjugated gold nanoparticle-azacyanine off-on-off fluorescence probe for sensitive and selective detection of G-quadruplexes**  
Bilgen E., Forough M., PERSİL ÇETİNKOL Ö.  
Talanta, vol.217, 2020 (SCI-Expanded)
- X. **Azacyanines as novel topoisomerase II alpha inhibitors**  
Guloglu S., Kirmaci F. N., PERSİL ÇETİNKOL Ö., Forough M., Gulkaya A.  
Letters in Drug Design and Discovery, vol.17, no.5, pp.664-669, 2020 (SCI-Expanded)
- XI. **A DNA-free colorimetric probe based on citrate-capped silver nanoparticles for sensitive and rapid detection of coralyne**  
Usta H. M., Forough M., Cetinkol Ö.  
Sensors and Actuators, B: Chemical, vol.298, 2019 (SCI-Expanded)
- XII. **Targeting human telomeric DNA with azacyanines**  
Kucukakdag Dogu A., Persil Çetinkol Ö.  
TURKISH JOURNAL OF CHEMISTRY, vol.43, pp.1040-1051, 2019 (SCI-Expanded)
- XIII. **Selective High Binding Affinity of Azacyanines to polyd(A) center dot polyd(T) center dot polyd(T) Triplex: The Effect of Chain Length and Branching on Stabilization, Selectivity and Affinity**  
Tutuncu S., Guloglu S., Kucukakdag A., Persil Çetinkol Ö.  
CHEMISTRYSELECT, vol.3, no.45, pp.12878-12887, 2018 (SCI-Expanded)
- XIV. **How Alkyl Chain Length of Alcohols Affects Lignin Fractionation and Ionic Liquid Recycle During Lignocellulose Pretreatment**  
SATHITSUKSANO N., Sawant M., TRUONG Q., Tan J., Canlas C. G., Sun N., Zhang W., Renneckar S., Prasomsri T., Shi J., et al.  
BIOENERGY RESEARCH, vol.8, no.3, pp.973-981, 2015 (SCI-Expanded)
- XV. **Structural and Chemical Characterization of Hardwood from Tree Species with Applications as Bioenergy Feedstocks**  
PERSİL ÇETİNKOL Ö., SMITHMORITZ A., CHENG G., LAO J., GEORGE A., HONG K., HENRY R., HEAZLEWOOD J., SIMMONS B., HOLMES B.  
PLOS ONE, vol.7, no.12, 2012 (SCI-Expanded)
- XVI. **Biosynthesis and incorporation of side-chain-truncated lignin monomers to reduce lignin polymerization and enhance saccharification**

- EUDES A., GEORGE A., MUKERJEE P., KIM J., POLLET B., BENKE P., YANG F., MITRA P., SUN L., PERSİL ÇETİNKOL Ö., et al.  
PLANT BIOTECHNOLOGY JOURNAL, vol.10, no.5, pp.609-620, 2012 (SCI-Expanded)
- XVII. **The impact of ionic liquid pretreatment on the chemistry and enzymatic digestibility of Pinus radiata compression wood**  
TORR K., LOVE K., PERSİL ÇETİNKOL Ö., DONALDSON L., GEORGE A., HOLMES B., SIMMONS B.  
GREEN CHEMISTRY, vol.14, no.3, pp.778-787, 2012 (SCI-Expanded)
- XVIII. **A facile method for the recovery of ionic liquid and lignin from biomass pretreatment**  
DIBBLE D., LI C., LAN S., GEORGE A., CHENG A., PERSİL ÇETİNKOL Ö., BENKE P., HOLMES B., SINGH S., SIMMONS B.  
GREEN CHEMISTRY, vol.13, no.11, pp.3255-3264, 2011 (SCI-Expanded)
- XIX. **Molecular dynamics simulations and coupled nucleotide substitution experiments indicate the nature of A center dot A base pairing and a putative structure of the coralyne-induced homo-adenine duplex**  
Joung I. S., Cetinkol O. P., HUD N. V., Cheatham T. E.  
NUCLEIC ACIDS RESEARCH, vol.37, no.22, pp.7715-7727, 2009 (SCI-Expanded)
- XX. **Molecular recognition of poly(A) by small ligands: an alternative method of analysis reveals nanomolar, cooperative and shape-selective binding**  
Cetinkol O. P., Hud N. V.  
NUCLEIC ACIDS RESEARCH, vol.37, no.2, pp.611-621, 2009 (SCI-Expanded)
- XXI. **Submicromolar, selective G-quadruplex ligands from one pot: Thermodynamic and structural studies of human telomeric DNA binding by azacyanines**  
Cetinkol O. P., ENGELHART A. E., Nanjunda R. K., Wilson W. D., HUD N. V.  
CHEMBIOCHEM, vol.9, no.12, pp.1889-1892, 2008 (SCI-Expanded)
- XXII. **Harnessing DNA intercalation**  
Persil O., HUD N. V.  
TRENDS IN BIOTECHNOLOGY, vol.25, no.10, pp.433-436, 2007 (SCI-Expanded)
- XXIII. **Assembly of an antiparallel homo-adenine DNA duplex by small-molecule binding**  
Persil O., SANTAI C., JAIN S., HUD N.  
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol.126, no.28, pp.8644-8645, 2004 (SCI-Expanded)
- XXIV. **Na<sub>12</sub>Ge<sub>17</sub>: A compound with the zintl anions [Ge-4](4-) and [Ge-9](4-) - Synthesis, crystal structure, and Raman spectrum**  
CARRILLO-CABRERA W., GIL R., SOMER M., Persil O., VON SCHNERING H.  
ZEITSCHRIFT FUR ANORGANISCHE UND ALLGEMEINE CHEMIE, vol.629, no.4, pp.601-608, 2003 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Understanding the impact of ionic liquid pretreatment on eucalyptus**  
PERSİL ÇETİNKOL Ö., DIBBLE D., CHENG G., KENT M., KNIERIM B., AUER M., WEMMER D., PELTON J., SIMMONS B., MELNICHENKO Y., et al.  
Biofuels, vol.1, pp.33-46, 2010 (Scopus)

## Books & Book Chapters

- I. **Biosensors for Nucleic Acid Detection**  
Persil Çetinkol Ö.  
in: Advanced Sensor Technology Biomedical, Environmental, and Construction Applications, Ahmed Barhoum, Zeynep Altintas, Editor, Elsevier Science, Oxford/Amsterdam, New York, pp.173-233, 2022
- II. **Small molecule recognition of poly(A)**  
PERSİL ÇETİNKOL Ö.

in: Polyadenylation Methods and Protocols, Rorbach Joanna, Bobrowicz Agnieszka J., Editor, Springer, New-York, pp.81-108, 2014

III. **Metal Ion Interactions with G-Quadruplex Structures**

AARON E., PLAVEC J., PERSİL ÇETİNKOL Ö., HUD N.

in: Nucleic Acid Metal Ion Interactions, Hud, Nicholas, Editor, RSC Publishing, Cambridge, pp.118-153, 2009

## **Refereed Congress / Symposium Publications in Proceedings**

- I. **DNA Metilasyonunun DNA Yapısı ve DNA-Doksorubisin Etkileşimleri Üzerindeki Etkileri**  
ÇAVDAR G., PERSİL ÇETİNKOL Ö.  
Uluslararası Katılımlı 20. Biyoteknoloji Kongresi, Turkey, 10 - 12 October 2019
- II. **Benzimidazol Türevi Azasiyaninlerin Seçiciliği**  
TUTUNCU S., KUCUKAKDAG A., GULOGLU S., PERSİL ÇETİNKOL Ö.  
Uluslararası Katılımlı 6. İlaç Kimyası: İlaç Etkin Maddesi Tasarımı, Sentezi, Üretimi ve Standardizasyonu Kongresi, 22 - 25 March 2018
- III. **G Dörtlü Sarmal Yapısına Sahip Telomerik Dna Dizinleri ile Azasiyaninlerin Etkileşimleri**  
PERSİL ÇETİNKOL Ö.  
4. İlaç Kimyası Kongresi: İlaç Etkin Maddesi Tasarımı, Sentezi, Üretimi ve Standardizasyonu KONGresi, Turkey, 17 - 20 March 2016
- IV. **Structural characterization of Eucalyptus species**  
PERSİL ÇETİNKOL Ö., SMITH M., GEORGE A., CHENG G., BRENNAN T., HENRY R., SIMMONS B., HOLMES B.  
ACS Spring 2010 National Meeting & Exposition, 21 - 25 March 2010
- V. **Harnessing the effect of ionic liquid pretreatment on Eucalyptus**  
PERSİL ÇETİNKOL Ö.  
ACS Spring 2010 National Meeting & Exposition, 21 - 25 March 2010
- VI. **Selective High Affinity Synthetically Accessible Ligands for G Quadruplex DNA Thermodynamic and Structural Studies of Azacyanines**  
ENGELHART A., PERSİL ÇETİNKOL Ö., NANJUNDA R., WILSON D., HUD N.  
Albany 2009: The 16th Conversation, 16 - 20 June 2009
- VII. **Small molecules that enhance GAA TTC fragility**  
LOBACHEV K., KIM H., NARAYANAN V., PERSİL ÇETİNKOL Ö., HUD N.  
Albany 2009: The 16th Conversation, 16 - 20 June 2009
- VIII. **2 D NMR Investigation of Ionic Liquid Pretreatment on Eucalyptus**  
PERSİL ÇETİNKOL Ö., DIBBLE D., PELTON J., WEMMER D., SIMMONS B., HOLMES B., RALPH J.  
31st Symposium on Biotechnology for Fuels&Chemicals, 3 - 06 May 2009
- IX. **Identification of Genes Involved in Acetylation of Cell Wall Polysaccharides in Arabidopsis thaliana**  
MANABE Y., SMITH M., ORFILA C., MANISSERI C., PERSİL ÇETİNKOL Ö., HOLMES B., HEAZLEWOOD J., SCHELLER H.  
Genomics of Energy and Environment; Fourth Annual DOE Joint Genome Institute User Meeting, 25 - 27 March 2009
- X. **Nanomolar Selective G Quadruplex Ligands from One Pot Thermodynamic and Structural Studies of Azacyanines**  
ENGELHART A., PERSİL ÇETİNKOL Ö., NANJUNDA R., WILSON D., HUD N.  
Southeast Regional Meeting of the ACS, 12 - 15 November 2008
- XI. **Exploring small molecules that promote the poly rA self structure**  
PERSİL ÇETİNKOL Ö., HUD N.  
Southeast Regional Meeting of the ACS, 1 - 04 November 2006
- XII. **Controlling nucleic acid assembly by small molecule binding Formation of antiparallel dA n dA n duplexes in the presence of coralyne**  
PERSİL ÇETİNKOL Ö., SANTAI C., JAIN S., HUD N.  
Albany 2005: The 14th Conversation, 14 - 18 June 2005

## Supported Projects

- PERSİL ÇETİNKOL Ö., BULUT Z. İ., OSMANOĞULLARI S. C., Project Supported by Higher Education Institutions, Oksaliplatinin yarattığı DNA hasarının diferansiyal puls voltmetri yöntemi ile tespiti, 2021 - 2022
- PERSİL ÇETİNKOL Ö., DOĞAN K., Project Supported by Higher Education Institutions, Benzotiyazol Türevlerinin Farklı Nükleik Asit Yapılarına Karşı Seçiciliklerinin Belirlenmesi, 2021 - 2022
- PERSİL ÇETİNKOL Ö., KÜÇÜKAKDAĞ A., Project Supported by Higher Education Institutions, BENZİMİDAZOL TÜREVİ İLAÇ ADAYI BİLEŞİĞİNİN İNSAN TELEMORİK DNA'SI İLE ETKİLEŞİMLERİNİN İNCELENMESİ, 2018 - 2019
- YILMAZ A., AKMAN P., GÖKAĞAÇ ARSLAN G., ÇORUH N., NALBANT ESENTÜRK E., KAYRAN İŞÇİ C., PERSİL ÇETİNKOL Ö., Project Supported by Higher Education Institutions, Lüminesan MCM-41 Mezogözenekli Silika Nanoparçacıklarına Selekoksib Yükleme Çalışmaları: İlaç Yükleme ve Bırakma Özellikleri, 2018 - 2019
- PERSİL ÇETİNKOL Ö., Project Supported by Higher Education Institutions, AZA3 MOLEKÜLÜNÜN TOPOİZOMERAZ I ENZİMİ İLE OLAN ETKİLEŞİMLERİNİN İNCELENMESİ, 2017 - 2017
- GÖKAĞAÇ ARSLAN G., YILMAZ A., ÇORUH N., NALBANT ESENTÜRK E., KAYRAN İŞÇİ C., PERSİL ÇETİNKOL Ö., Project Supported by Higher Education Institutions, Değişik destek maddeleri kullanılarak yeni katalizörlerin hazırlanması, 2017 - 2017
- PERSİL ÇETİNKOL Ö., Project Supported by Higher Education Institutions, AZASİYANIN 3 BİLEŞİĞİNİN NÜKLEİK ASİTLER İLE ETKİLEŞİMLERİNİN İNCELENMESİ, 2017 - 2017
- PERSİL ÇETİNKOL Ö., Project Supported by Higher Education Institutions, AZA3 TÜREVİ İLAÇ ADAYI BİLEŞİĞİNİN İNSAN TELEMORİK DNA'SI İLE ETKİLEŞİMLERİNİN İNCELENMESİ, 2017 - 2017
- PERSİL ÇETİNKOL Ö., Project Supported by Higher Education Institutions, Üç Yeni İlaç Adayı Bileşiğin Sentezi, Karakterizasyonu ve İnsan Telemorik DNA'sı İle Etkileşimlerinin İncelenmesi, 2016 - 2017
- ESENTÜRK O., ÖNAL A. M., DOĞAN Ö., DANIŞMAN M. F., ASİL ALPTEKİN D., AYTEKİN Y. S., HACALOĞLU J., PERSİL ÇETİNKOL Ö., Project Supported by Higher Education Institutions, ŞARAP KALİTE TAYİNİ İÇİN YÖNTEM GELİŞTİRME ÇALIŞMALARI, 2016 - 2016

## Scientific Refereeing

- ANALYST, THE, SCI Journal, October 2023
- BIOSENSORS AND BIOELECTRONICS, SCI Journal, January 2023
- INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, SCI Journal, November 2022
- CHEMISTRYSELECT, SCI Journal, August 2022
- TALANTA, SCI Journal, February 2022
- TURKISH JOURNAL OF BIOLOGY, National Scientific Refreed Journal, September 2021
- ACS APPLIED NANO MATERIALS, SCI Journal, June 2021
- ACS APPLIED MATERIALS & INTERFACES, SCI Journal, May 2021
- BIOSENSORS AND BIOELECTRONICS, SCI Journal, May 2021
- BIOMETALS, SCI Journal, January 2021

## Metrics

- Publication: 41
- Citation (WoS): 777
- Citation (Scopus): 786
- H-Index (WoS): 14
- H-Index (Scopus): 13

## Awards

## **Non Academic Experience**

Zentiva Sağlık Ürünleri Sanayi ve Ticaret Anonim Şirketi

Lawrence Berkeley National Laboratory - Joint BioEnergy Institute

Lawrence Berkeley National Laboratory - Joint BioEnergy Institute

Georgia Institute of Technology

Koç Üniversitesi

Max Planck Institute-Solid State Chemistry Division

Evonik Industries AG (Formerly- Degussa AG)