

Prof. SIDIKA POLAT ÇAKIR

Personal Information

Email: spcakir@comu.edu.tr

Web: <https://avesis.comu.edu.tr/spcakir>

Address: Çanakkale Onsekiz Mart Üniversitesi, Mühendislik Fakültesi-Ek Bina, Kimya Mühendisliği, Terzioğlu kampusu 17100 Çanakkale Merkez

International Researcher IDs

ORCID: 0000-0003-3639-2539

Yoksis Researcher ID: 124013

Education Information

Doctorate, Mississippi State University, -----, Kimya Bölümü, United States Of America 2000 - 2005

Postgraduate, Middle East Technical University, Fen Edebiyat Fakültesi, Kimya Bölümü, Turkey 1995 - 1997

Undergraduate, Middle East Technical University, Fen Edebiyat Fakültesi, Kimya Bölümü, Turkey 1990 - 1995

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Studies related to the total synthesis of Blepharocalyxin E (Advisor: Prof. Dr. Keith T. Mead), Mississippi State University, Fen Edebiyat Fakültesi, Kimya, 2005

Postgraduate, New synthesis of alpha-pyron derivatives (Advisor: Prof.Dr. Okan Tarhan and Co-advisor:Ayhan S. Demir), Canakkale Onsekiz Mart University, Fen Fakültesi, Kimya, 1997

Research Areas

Chemistry, Organic Chemistry, Chemistry of Asymmetric Synthesis, Chemistry of Natural Products, Chemistry of Heterocyclic Compounds, Natural Sciences

Academic Titles / Tasks

Professor, Canakkale Onsekiz Mart University, Mühendislik Fakültesi, Kimya Mühendisliği, 2021 - Continues

Associate Professor, Canakkale Onsekiz Mart University, Mühendislik Fakültesi, Kimya Mühendisliği, 2013 - 2021

Associate Professor, Nevşehir Üniversitesi, Fen Edebiyat Fakültesi, Kimya, 2012 - 2013

Assistant Professor, Nevşehir Üniversitesi, Fen Edebiyat Fakültesi, Kimya, 2008 - 2012

Advising Theses

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **FAM-Ag-catalyzed asymmetric synthesis of heteroaryl-substituted pyrrolidines**
Beksultanova N., Gozukara Z., Araz M., Bulut M., POLAT ÇAKIR S., AYGÜN M., DOĞAN Ö.
CHIRALITY, vol.33, no.8, pp.465-478, 2021 (SCI-Expanded)
- II. **1,3-Dipolar cycloaddition reactions of acyl phosphonates with nitrile oxides: synthesis of phosphonate-containing dioxazole derivatives**
Polat Çakır S.
PHOSPHORUS SULFUR AND SILICON AND THE RELATED ELEMENTS, vol.196, no.5, pp.461-467, 2020 (SCI-Expanded)
- III. **Synthesis of Functionalized Novel alpha-Amino-beta-alkoxyphosphonates through Regioselective Ring Opening of Aziridine-2-phosphonates**
POLAT ÇAKIR S., Beksultanova N., DOĞAN Ö.
HELVETICA CHIMICA ACTA, vol.102, no.11, 2019 (SCI-Expanded)
- IV. **Synthesis of beta-chloro-alpha-aminophosphonate derivatives via the regioselective ring opening of unactivated aziridine-2-phosphonates**
POLAT ÇAKIR S., Beksultanova N., DOĞAN Ö.
PHOSPHORUS SULFUR AND SILICON AND THE RELATED ELEMENTS, vol.193, no.12, pp.858-864, 2018 (SCI-Expanded)
- V. **Recent progress in asymmetric synthesis of aziridine derivatives (microreview)**
DOĞAN Ö., POLAT ÇAKIR S.
CHEMISTRY OF HETEROCYCLIC COMPOUNDS, vol.54, no.4, pp.397-399, 2018 (SCI-Expanded)
- VI. **Enantioselective synthesis of new chiral 2-aziridinyl phosphonates and studies of their biological activities**
DOĞAN Ö., Cakir S. P., Beksultanova N., ALTANLAR N., Simsek D., KARABIYIK H.
TETRAHEDRON-ASYMMETRY, vol.28, no.2, pp.324-329, 2017 (SCI-Expanded)
- VII. **Synthesis of (3,6-dihydro-2H-pyran-2-yl)phosphonate derivatives and investigation of catalyst effect on frontier molecular orbitals using DFT method**
Hossain M. S., Cakir S. P., Ozpınar G. A., Nadeem S., Demir A. S.
PHOSPHORUS SULFUR AND SILICON AND THE RELATED ELEMENTS, vol.191, no.9, pp.1262-1267, 2016 (SCI-Expanded)
- VIII. **Synthesis of tertiary propargylic phosphonates by addition of trialkynylaluminum reagents to acyl phosphonates and investigation of their antimicrobial activities**
Hossain M. S., Cakir S., Karaduman A. B., Yamac M., Demir A. S.
TURKISH JOURNAL OF CHEMISTRY, vol.38, no.5, pp.880-893, 2014 (SCI-Expanded)
- IX. **Indium triflate-catalyzed coupling of indoles with acyl phosphonates: synthesis of bis(indolyl)methane phosphonates**
Dasbası T., Polat Çakır S., Abdullah M., Demir A. S.
Tetrahedron, vol.67, no.19, pp.3355-3359, 2011 (SCI-Expanded)
- X. **Reactions of acyl phosphonates with organoaluminum reagents: a new method for the synthesis of secondary and tertiary α -hydroxy phosphonates**
Seven O., Polat Çakır S., Hossain M. S., Emrullahoglu M., Demir A. S.
Tetrahedron, vol.67, no.19, pp.3464-3469, 2011 (SCI-Expanded)
- XI. **Hetero Diels-Alder reactions of acyl phosphonates: synthesis of glycosyl type phosphonates**
Polat Çakır S., Demir A. S.
Tetrahedron, vol.67, no.13, pp.2396-2401, 2011 (SCI-Expanded)
- XII. **Evidence for pi-Stacking as a Source of Stereocontrol in the Synthesis of the Core Pyranochromene**

Ring System common to Calyxin I, Calyxin J, and Epicalyxin J

Cakir S., Stokes S., Sygula A., Mead K. T.

JOURNAL OF ORGANIC CHEMISTRY, vol.74, no.19, pp.7529-7532, 2009 (SCI-Expanded)

- XIII. **Reactions of N-acyl imines with dihydropyrans**
Cakir S., Mead K. T.
SYNTHESIS-STUTT GART, no.6, pp.871-874, 2008 (SCI-Expanded)
- XIV. **Suzuki coupling reactions of 2,4,6-trialkoxyphenylboronic acids with enol triflates: asymmetric synthesis of a lactone template for calyxin assemblage**
Cakir S., MEAD K.
TETRAHEDRON LETTERS, vol.47, no.14, pp.2451-2454, 2006 (SCI-Expanded)
- XV. **Synthesis and ring cleavage of a sterically hindered tetrahydro-4H-furo [2,3-b]pyran-2-one. A model for the total synthesis of blepharocalyxin E**
Cakir S., MEAD K.
HETEROCYCLIC COMMUNICATIONS, vol.11, no.6, pp.471-474, 2005 (SCI-Expanded)
- XVI. **Stereoselective approach to C-aryl pyranoside synthesis which addresses the problem of C7-substitution in blepharocalyxin E**
Cakir S., MEAD K.
JOURNAL OF ORGANIC CHEMISTRY, vol.69, no.6, pp.2203-2205, 2004 (SCI-Expanded)
- XVII. **Studies towards diarylheptanoid synthesis. Part 2: Synthesis and ring cleavage reactions of tetrahydro-4H-furo[2,3-b]pyran-2-ones**
Cakir S., MEAD K., SMITH L.
TETRAHEDRON LETTERS, vol.44, no.33, pp.6355-6358, 2003 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **β -Fonksiyonel alfa-amino fosfonat türevlerinin sentezlenmesi**
Polat Çakır S., Doğan Ö., Beksultanova N.
31. Ulusal Kimya Kongresi, İstanbul, Turkey, 10 - 13 September 2019, pp.1-2
- II. **Metal catalyzed asymmetric synthesis of heteroaryl substituted pyrrolidines**
Doğan Ö., Bulut M., Gözükara Z., Araz M., Polat Çakır S.
18th, Blue Danube Symposium on Heterocyclic Chemistry (BDSHC), İstanbul, Turkey, 18 - 21 September 2019
- III. **Yeni Aziridin Ana İskeletine Sahip Kiral Fosfonik Asit Türevi Bileşiklerin Sentezi Ve Organokatalizör Olarak Etkileri**
Beksultanova N., Doğan Ö., Polat Çakır S.
3. Ulusal Organik Kimya Kongresi, Trabzon, Turkey, 5 - 08 September 2016
- IV. **The addition of selected organoaluminum and organozinc reagents to the protected imino and alfa-keto phosphonates**
POLAT ÇAKIR S.
International Natural Science, Engineering and Materials Technology Conference, İstanbul, Turkey, 9 - 10 September 2019, pp.119-128
- V. **Investigation of ring-opening reactions of nonactivated aziridinyl-2-phosphonates with nucleophiles**
Beksultanova N., Polat Çakır S., Doğan Ö.
4th Organic Chemistry Congress with International Participation, Antalya, Turkey, 04 October 2018, pp.1-2
- VI. **Synthesis and the biological activity of hydroxydiarylmethyl phosphonates**
Polat Çakır S., Sopacı Ş. B.
4th Organic Chemistry Congress with International Participation, Antalya, Turkey, 04 October 2018, pp.1-2
- VII. **Aziridine based new phosphonic acid derivatives as potential organocatalysts for the enantioselective synthesis of organic compounds**
Doğan Ö., Polat Çakır S., Beksultanova N.
6th EuChemMS Chemistry Congress, Sevilla, Spain, 11 - 15 September 2016

- VIII. **Kiral Aziridin 2-Fosfonat Türevlerinin Sentezi Ve Regioselektif Halka Açılım Tepkimeleri**
Polat Çakır S., Beksultanova N., Doğan Ö.
29. Ulusal Kimya Kongresi, Ankara, Turkey, 10 - 14 September 2017
- IX. **Yeni Kiral α -Amino Fosfonik Asitlerin ve Aziridinil Fosfonik Asitlerin Sentezi**
Beksultanova N., Doğan Ö., Polat Çakır S., Khan R.
29. Ulusal Kimya Kongresi, Ankara, Turkey, 10 - 14 September 2017
- X. **Organocatalytic enantioselective indole and pyrrole addition to N benzoylimines**
Doğan Ö., Polat Çakır S., Beksultanova N.
Anatolian Conference on Synthetic Organic Chemistry, Antalya, Turkey, 21 - 24 March 2016, pp.0-1
- XI. **Enantioselective synthesis of 2 aziridinyl phosphonates and studies of their biological activities**
Doğan Ö., Polat Çakır S., Beksultanova N., Altanlar N., Şimşek D.
252nd ACS National Meeting, Pennsylvania, United States Of America, 13 - 17 March 2016
- XII. **Enantioselective Indole Addition To Nitroalkenes Using Aziridinyl Phosphonic Acids As Organocatalyst**
POLAT ÇAKIR S., DOĞAN Ö., Beksultanova N.
8th Trans Mediterranean Colloquium on Heterocyclic Chemistry (TRAMEC), 11 - 15 November 2015
- XIII. **Yeni Fosforik Asit Turevi Organokatalizörlerle Organik Bileşiklerin Enantiosecici Sentezi**
Doğan Ö., Polat Çakır S., Nurzhan B.
27. ULUSAL KİMYA KONGRESİ, Çanakkale, Turkey, 23 - 28 August 2015
- XIV. **Açıl Fosfonatların 2,3-Dimetil 1,3-Bütadien ile olan Hetero Diels Alder Tepkimelerinin İncelenmesi**
Hossain M. S., Polat Çakır S., Ayhan S D.
27. Ulusal Kimya Kongresi, Çanakkale, Turkey, 23 - 28 August 2015
- XV. **Oxo-Diels Alder and Wittig reactions of acyl phosphonate**
Nadeem S., Demir A. S., Hossain M. S., Polat Çakır S.
Anatolian Conference on Synthetic Organic Chemistry (ACSOC I), Antalya, Turkey, 16 - 19 March 2015, pp.1
- XVI. **Alfa-iminofosfonat türevlerine organoalüminyum reaktiflerinin katılması**
Terlemez B., Polat Çakır S., Demir A. S.
I. Ulusal Organik Kimya Kongresi, Sakarya, Turkey, 25 - 29 October 2013, pp.1-2
- XVII. **Açıl fosfonatların 2,3-dimetil 1,3-bütadien ile olan hetero-diels alder tepkimelerinin incelenmesi**
Hossain M. S., Polat Çakır S., Demir A. S.
I. Ulusal Organik Kimya Kongresi, Sakarya, Turkey, 25 - 29 October 2013, pp.1-2
- XVIII. **Açıl fosfonatlara trialkilalüminyum reaktiflerinin katılması: ikincil ve üçüncül alfa-hidroksi fosfonatların sentezlenmesi**
Seven Ö., Polat Çakır S., Hossain M. S., Emrullahoglu M., Demir A. S.
I. Ulusal Organik Kimya Kongresi, Sakarya, Turkey, 25 October 2013, pp.1-2
- XIX. **Açıl fosfonatların hetero Diels-Alder reaksiyonları**
Polat Çakır S., Demir A. S.
XXIV. Ulusal Kimya Kongresi, Zonguldak, Turkey, 29 June 2010, pp.1-2
- XX. **The influence of π -stacking on the stereochemistry of phenolic constituents of alpinia blepharocalyx**
Stokes S. L., Polat Çakır S., Mead K. T.
60th ACS Southeastern Regional Meeting (SERMACS), Tennessee, United States Of America, 12 - 15 November 2008, pp.1-2
- XXI. **Synthesis and theoretical calculations of tetrahydropyranochromene framework**
Polat Çakır S., Mead K. T., Syagula A.
XXII. Ulusal Kimya Kongresi, Gazimagusa, Cyprus (Kkct), 06 October 2008, pp.1-2
- XXII. **Synthesis of naturally occurring polyphenols with antitumor potential**
Polat Çakır S., O'Brien M. S., Mead K. T.
Mississippi Academy of Science (MAS), 71th Annual Meeting, Mississippi, United States Of America, 21 February 2007, pp.1-2
- XXIII. **Synthetic efforts towards the construction of Blepharocalyxin E**
Polat Çakır S., Mead K. T.

- 60th ACS Southwest Regional Meeting, Texas, United States Of America, 29 September 2004, pp.1-2
- XXIV. **Synthetic studies towards the total synthesis of Blepharocalyxin E: Lewis acid mediated ring cleavages of bicyclic lactone derivatives**
Polat Çakır S., Mead K. T.
2nd Annual Graduate Student Research Symposium, Mississippi, United States Of America, 01 April 2004, pp.1-2
- XXV. **Ring-opening reactions of tetrahydro-4H-furo[2,3-b]pyran-2-ones**
Polat Çakır S., Mead K. T.
225th ACS National Meeting, Louisiana, United States Of America, 23 March 2003, pp.1-2
- XXVI. **Studies towards new synthesis of β -pyron derivatives**
Polat Çakır S., Demir A. S., Tarhan O.
National 1th Chemistry Symposium, Van, Turkey, 16 June 1997, pp.1-2

Supported Projects

Polat Çakır S., Doğan Ö., TUBITAK Project, 1. Piperazin Türevlerinin Asimetrik Sentezi için Yeni Bir Yöntem Geliştirilmesi, 2022 - 2025

Polat Çakır S., Doğan Ö., TUBITAK Project, Yeni Bir Skueramit Yapısının Sentezi Ve 1,3-Diketonların Nitroolefinlere Enantioseçici Michael Katılma Tepkimesinde Organokatalitik Etkisinin Araştırılması, 2021 - 2022

POLAT ÇAKIR S., Project Supported by Higher Education Institutions, Yapısında Fosfonat İçeren Yeni Dioxazol Türevlerinin 1,3-Dipolar Halkasal Katılma Tepkimesiyle Sentezlenmesi, 2020 - 2021

Polat Çakır S., Doğan Ö., TUBITAK Project, Heteroaril sübstitite pirolidin türevlerinin asimetrik sentezi için yeni kiral katalizörler geliştirilmesi, 2018 - 2020

POLAT ÇAKIR S., SOPACI Ş. B., Project Supported by Higher Education Institutions, Yeni bir yöntemle dördüncül merkezli hidroksifosfonatların sentezlenmesi ve biyolojik aktivitelerinin araştırılması, 2016 - 2017

Polat Çakır S., Doğan Ö., TUBITAK Project, Yeni fosfonik asit türevi organokatalizörlerin geliştirilmesi ve organik bileşiklerin enantioseçici sentezinde uygulamaları, 2014 - 2017

GONCA E., POLAT ÇAKIR S., KOYUNCU S., CENGİZ U., Project Supported by Higher Education Institutions, Mühendislik Fakültesi Kimya Mühendisliği Bölümü öğrencileri için Kimya Laboratuvarının altyapısının oluşturulması, 2014 - 2014

Polat Çakır S., Demir A. S., EU Supported Other Project, Üre yapısında ve sulu sistemlerde çözünebilir organokatalizörlerin sentezi ve asimetrik strecker reaksiyonunda uygulamaları, 2010 - 2012

Scientific Refereeing

Turkish Journal of Chemistry, National Scientific Refreed Journal, July 2012

Turkish Journal of Chemistry, National Scientific Refreed Journal, May 2012

Turkish Journal of Chemistry, National Scientific Refreed Journal, March 2012

Scientific Consultations

ATATÜRK ÜNİVERSİTESİ- BAP Koordinasyon Birimi, Project Consultancy, Canakkale Onsekiz Mart University, Mühendislik Fakültesi, Kimya Mühendisliği, Turkey, 2017 - 2017

TÜBİTAK, Project Consultancy, Nevşehir Üniversitesi, Fen Edebiyat Fakültesi, Kimya, Turkey, 2013 - 2015

TÜBİTAK, Project Consultancy, Canakkale Onsekiz Mart University, Mühendislik Fakültesi, Kimya Mühendisliği, Turkey, 2014 - 2014

TÜBİTAK, Project Consultancy, Canakkale Onsekiz Mart University, Mühendislik Fakültesi, Kimya Mühendisliği, Turkey, 2014 - 2014

TÜBİTAK, Project Consultancy, Nevşehir Üniversitesi, Fen Edebiyat Fakültesi, Kimya, Turkey, 2013 - 2013

Metrics

Publication: 43

Citation (WoS): 87

Citation (Scopus): 91

H-Index (WoS): 5

H-Index (Scopus): 6

Awards

POLAT ÇAKIR S., En iyi Lisansüstü Araştırmacı Öğrenci Ödülü Sahibi, College of Arts & Sciences, Mississippi State University, January 2006