

## Assoc. Prof. SIDIKA POLAT ÇAKIR

### Personal Information

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### Education Information

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

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

Under Graduate, 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

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

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

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

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

### Advising Theses

POLAT ÇAKIR S., Alfa-imino fosfonatlara organoalüminyum bileşiklerinin katılma tepkimelerinin incelenmesi, Post Graduate, B.Terlemez(Student), 2012

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

- I. **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 (Journal Indexed in SCI)
- II. **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 (Journal Indexed in SCI)
- III. **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. , Ozpinar G. A. , Nadeem S., Demir A. S.  
PHOSPHORUS SULFUR AND SILICON AND THE RELATED ELEMENTS, vol.191, no.9, pp.1262-1267, 2016 (Journal Indexed in SCI)
- IV. **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 (Journal Indexed in SCI)
- V. **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 (Journal Indexed in SCI)
- VI. **Reactions of acyl phosphonates with organoaluminum reagents: a new method for the synthesis of secondary and tertiary  $\alpha$ -hydroxy phosphonates**  
Seven O., Polat Çakır S., Hossain M. S. , Emrullahoglu M., Demir A. S.  
Tetrahedron, vol.67, no.19, pp.3464-3469, 2011 (Journal Indexed in SCI Expanded)
- VII. **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 (Journal Indexed in SCI)
- VIII. **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 (Journal Indexed in SCI)
- IX. **Reactions of N-acyl imines with dihydropyrans**  
Cakir S., Mead K. T.  
SYNTHESIS-STUTTGART, no.6, pp.871-874, 2008 (Journal Indexed in SCI)
- X. **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 (Journal Indexed in SCI)
- XI. **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 (Journal Indexed in SCI)
- XII. **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 (Journal Indexed in SCI)
- XIII. **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 (Journal Indexed in SCI)

## Refereed Congress / Symposium Publications in Proceedings

- I.  **$\beta$ -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  $\alpha$ -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 Türevi Organokatalizörlerle Organik Bileşiklerin Enantioselective 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  $\pi$ - 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., Obrien 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  $\beta$ -pyron derivatives**  
Polat Çakır S., Demir A. S. , Tarhan O.  
National 1th Chemistry Symposium, Van, Turkey, 16 June 1997, pp.1-2

## Supported Projects

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

### **Citations**

Total Citations (WOS):64

h-index (WOS):5

### **Awards**

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