

## Prof. MEHMET SAYIM KARACAN

### Personal Information

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### Education Information

Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Kimya (Dr), Turkey 1992 - 1997

Post Graduate, Gazi University, Fen Bilimleri Enstitüsü, Kimya (YI) (Tezli), Turkey 1987 - 1991

Under Graduate, Selcuk University, Mühendislik-Mimarlık Fakültesi, Kimya Mühendisliği Pr., Turkey 1982 - 1987

### Dissertations

Doctorate, Ispanağın mangan klastırı çıkarılmış fotosistem II alt biriminin sentetik mangan kompleksleri ile yeniden yapılandırılması, Gazi University, Fen Bilimleri Enstitüsü, Kimya (Dr), 1997

Post Graduate, Bakırla selenyum arasındaki intermetalik bileşiğin dönüşümlü voltametri (CV) tekniğiyle araştırılması, Gazi University, Fen Bilimleri Enstitüsü, Kimya (YI) (Tezli), 1991

### Research Areas

Chemistry

### Academic Titles / Tasks

Professor, Gazi University, Fen Fakültesi, Kimya Bölümü, 2014 - Continues

Associate Professor, Gazi University, Fen Fakültesi, Kimya Bölümü, 2008 - Continues

Assistant Professor, Gazi University, Fen Fakültesi, Kimya Bölümü, 2000 - 2008

Research Assistant, Gazi University, Fen Fakültesi, Kimya Bölümü, 1987 - 2000

### Courses

Aletli Analiz, Under Graduate, 2020 - 2021

Araştırma Projesi I , Under Graduate, 2016 - 2017

Genel Kimya I, Under Graduate, 2016 - 2017

ANALİTİK KİMYA I, Under Graduate, 2016 - 2017

İLERİ ÇEVRE KİMYASI, Post Graduate, 2016 - 2017

BİLİMİN DOĞASI, Under Graduate, 2016 - 2017

### Advising Theses

KARACAN M. S. , Some sulfonyl urea groups are used as a herbicide active substance of material which is to investigate

the electrochemical properties and mechanism of enzyme inhibition is determined by square wave voltammetry and fluorescence spectroscopy techniques, S.Sel(Student), 2014

KARACAN M. S. , Bazı sülfonil üre grubu herbisit etken maddelerinin elektrokimyasal özelliklerinin incelenmesi ve enzim inhibisyon mekanizmasının kare dalga voltametri ve floresans spektroskopisiyle belirlenmesi, Post Graduate, S.SEL(Student), 2014

KARACAN M. S. , Some sulfonyl hydrazones, sulfonamides, Schiff bases and investigation of electrochemical properties of their some metal complexes, Doctorate, S.MAMAŞ(Student), 2013

KARACAN M. S. , Bazı sülfonil hidrazonların elektrokimyasal özelliklerinin incelenmesi ve kare dalga anodik sıyırma voltametri ile kalayla kurşunun birlikte tayininde kullanılması, Post Graduate, M.GÜNGÖR(Student), 2012

KARACAN M. S. , Investigation of electrochemical properties of some Sb(III) complexes and studying of inhibition effects to glutathione reductase by square wave voltammetry, Post Graduate, H.ORUÇ(Student), 2012

KARACAN M. S. , Oleuropeine determination in some folk medicinal plants by square wave cathodic stripping voltammetry, Post Graduate, S.TAŞDELEN(Student), 2011

KARACAN M. S. , METHOD DEVELOPMENT OF DETERMINATION OF Pb(II) AND Sn(II) BY SQUARE WAVE ANODIC STRIPPING VOLTAMMETRY, Post Graduate, M.CEYLAN(Student), 2008

KARACAN M. S. , INVESTIGATION OF USABILITY OF BUXUS SEMPERVIRENS L. AS BIOMONITOR FOR MONITORING OF TRACE ELEMENT CAUSED AIR POLLUTION, Post Graduate, F.DAŞDEMİR(Student), 2008

KARACAN M. S. , PRECONCENTRATION AND REMOVAL OF IRON, COPPER, CHROMIUM, NICKEL AND STRONTIUM ON ACTIVATED CARBON IN AQUEOUS SOLUTION AND DETERMINATION BY ICP-OES, Post Graduate, N.ASLANTAŞ(Student), 2007

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

- I. **Is carbonic anhydrase activity of photosystem II required for its maximum electron transport rate?**  
Shitov A., Terentyev V. V. , Zharmukhamedov S. K. , Rodionova M., Karacan M. S. , KARACAN N., Klimov V. V. , Allakhverdiev S.  
BIOCHIMICA ET BIOPHYSICA ACTA-BIOENERGETICS, vol.1859, no.4, pp.292-299, 2018 (Journal Indexed in SCI)
- II. **Evaluation of new Cu(II) complexes as a novel class of inhibitors against plant carbonic anhydrase, glutathione reductase, and photosynthetic activity in photosystem II**  
Rodionova M. V. , Zharmukhamedov S. K. , KARACAN M. S. , Venedik K. B. , Shitov A. V. , TUNÇ T., Mamas S., Kreslavski V. D. , KARACAN N., Klimov V. V. , et al.  
PHOTOSYNTHESIS RESEARCH, vol.133, pp.139-153, 2017 (Journal Indexed in SCI)
- III. **Characterization of nineteen antimony(III) complexes as potent inhibitors of photosystem II, carbonic anhydrase, and glutathione reductase**  
KARACAN M. S. , Rodionova M. V. , TUNÇ T., Venedik K. B. , Mamas S., Shitov A. V. , Zharmukhamedov S. K. , Klimov V. V. , KARACAN N., Allakhverdiev S. I.  
PHOTOSYNTHESIS RESEARCH, vol.130, pp.167-182, 2016 (Journal Indexed in SCI)
- IV. **Antimony(III) complexes with 2-amino-4,6-dimethoxypyrimidines: Synthesis, characterization and biological evaluation**  
TUNÇ T., KARACAN M. S. , Ertabaklar H., SARI M., KARACAN N., Buyukgungor O.  
JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY B-BIOLOGY, vol.153, pp.206-214, 2015 (Journal Indexed in SCI)
- V. **DNA cleavage, antimicrobial studies and a DFT-based QSAR study of new antimony(III) complexes as glutathione reductase inhibitor**  
TUNÇ T., Koc Y., AÇIK L., KARACAN M. S. , KARACAN N.  
SPECTROCHIMICA ACTA PART A-MOLECULAR AND BIOMOLECULAR SPECTROSCOPY, vol.136, pp.1418-1427, 2015 (Journal Indexed in SCI)
- VI. **A new method for screening glutathione reductase inhibitors using square wave voltammetry**  
KARACAN M. S. , TUNÇ T., Oruc H., Mamas S., KARACAN N.  
ANALYTICAL METHODS, vol.7, no.12, pp.5142-5148, 2015 (Journal Indexed in SCI)

- VII. **Screening of novel chemical compounds as possible inhibitors of carbonic anhydrase and photosynthetic activity of photosystem II**  
 KARACAN M. S. , Zharmukhamedov S. K. , Mamas S., Kupriyanova E. V. , Shitov A. V. , Klimov V. V. , ÖZBEK N., ÖZDEMİR ÖZMEN Ü., BALABAN GÜNDÜZALP A., Schmitt F., et al.  
 JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY B-BIOLOGY, vol.137, pp.156-167, 2014 (Journal Indexed in SCI)
- VIII. **Quantitative structure-activity relationship analysis of perfluoroiso-propyldinitrobenzene derivatives known as photosystem II electron transfer inhibitors**  
 KARACAN M. S. , Yakan C., Yakan M., KARACAN N., Zharmukhamedov S. K. , Shitov A., Los D. A. , Klimov V. V. , Allakhverdiev S. I.  
 BIOCHIMICA ET BIOPHYSICA ACTA-BIOENERGETICS, vol.1817, no.8, pp.1229-1236, 2012 (Journal Indexed in SCI)
- IX. **ENRICHMENT AND REMOVAL OF IRON (II), COPPER (II) AND STRONTIUM (II) IONS WITH SULFONAMIDES ON ACTIVATED CARBON IN ENVIRONMENTAL SAMPLES AND DETERMINATION BY ICP-OES ANALYSIS**  
 KARACAN M. S. , Aslantas N., ASLAN H. G.  
 FRESENIUS ENVIRONMENTAL BULLETIN, vol.20, no.5, pp.1167-1173, 2011 (Journal Indexed in SCI)
- X. **Multielement determination in fruit, soaps, and gummy extract of Pistacia terebinthus L. by ICP OES**  
 KARACAN M. S. , Cagran F.  
 TURKISH JOURNAL OF BIOLOGY, vol.33, no.4, pp.311-318, 2009 (Journal Indexed in SCI)
- XI. **SIMULTANEOUS ARSENIC AND CHROMIUM REMEDIATION FROM WATER BY FENTON AND DICHROMATE OXIDATION USING ZERO-VALENT IRON MEDIA**  
 KARACAN M. S. , Ugurlu G.  
 FRESENIUS ENVIRONMENTAL BULLETIN, vol.18, no.10, pp.1816-1822, 2009 (Journal Indexed in SCI)
- XII. **Simultaneous preconcentration and removal of iron, chromium, nickel with N,N '-ethylenebis-(ethane sulfonamide) ligand on activated carbon in aqueous solution and determination by ICP-OES**  
 KARACAN M. S. , Aslantas N.  
 JOURNAL OF HAZARDOUS MATERIALS, vol.155, no.3, pp.551-557, 2008 (Journal Indexed in SCI)
- XIII. **Semiempirical studies of the electronic structure of iron-sulfur proteins model compounds**  
 Karacan M. S.  
 CANADIAN JOURNAL OF ANALYTICAL SCIENCES AND SPECTROSCOPY, vol.52, no.1, pp.25-31, 2007 (Journal Indexed in SCI)
- XIV. **Reconstitution of the Mn-depleted photosystem 2 by using some manganese complexes**  
 Karacan M. S. , Somer G.  
 PHOTOSYNTHEICA, vol.43, no.2, pp.317-320, 2005 (Journal Indexed in SCI)
- XV. **Reconstruction of the water-oxidizing complex in manganese-depleted Photosystem II by using Schiff base manganese complexes**  
 Karacan M. S. , Somer G.  
 JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY A-CHEMISTRY, vol.163, no.3, pp.307-310, 2004 (Journal Indexed in SCI)
- XVI. **Direct determination of selenium in whole blood by anodic stripping voltammetry**  
 Karacan M. S. , Somer G., Kalayci S.  
 MIKROCHIMICA ACTA, vol.127, pp.67-70, 1997 (Journal Indexed in SCI)
- XVII. **Spectrophotometric determination of the stability constants of Cu(II) and Fe(III) complexes with some aryl Schiff bases**  
 Karacan N., Karacan M. S. , Baran Y.  
 JOURNAL OF THE CHEMICAL SOCIETY OF PAKISTAN, vol.18, no.4, pp.273-276, 1996 (Journal Indexed in SCI)
- XVIII. **RECONSTITUTION OF THE WATER-OXIDIZING COMPLEX IN MANGANESE-DEPLETED PHOTOSYSTEM-II COMPLEXES BY USING SYNTHETIC BINUCLEAR MANGANESE COMPLEXES**  
 ALLAKHVERDIEV S., KARACAN M. S. , SOMER G., KARACAN N., KHAN E., RANE S., PADHYE S., KLIMOV V., RENGER G.  
 BIOCHEMISTRY, vol.33, no.40, pp.12210-12214, 1994 (Journal Indexed in SCI)

- XIX. **BINUCLEAR MANGANESE(III) COMPLEXES AS ELECTRON-DONORS IN D1/D2/CYTOCHROME B559 PREPARATIONS ISOLATED FROM SPINACH PHOTOSYSTEM-II MEMBRANE-FRAGMENTS**  
ALLAKHVERDIEV S., KARACAN M. S. , SOMER G., KARACAN N., KHAN E., RANE S., PADHYE S., KLIMOV V., RENGER G.  
ZEITSCHRIFT FUR NATURFORSCHUNG C-A JOURNAL OF BIOSCIENCES, vol.49, pp.587-592, 1994 (Journal Indexed in SCI)

### Articles Published in Other Journals

- I. **The Inhibitory Effect of New Antimony(III)-Based Organometallic Complexes on the Photochemical Activity of Photosystem II and the Activity of Chloroplast Carbonic Anhydrase and Glutathione Reductase**  
Khalilova L., Rodionova M. V. , KARACAN M. S. , Karacan N., Alwasel S., Kreslavski V. D. , Zharmukhamedov S. K. , Allakhverdiev S. I.  
NANOTECHNOLOGIES IN RUSSIA, vol.15, no.1, pp.90-95, 2020 (Journal Indexed in ESCI)

### Books & Book Chapters

- I. **Kimyasal Ölçmeler**  
KARACAN M. S. , KENAR A., ÖZCAN A., UYANIK A., SOLAK A. O. , DEMİR C., ARPA ŞAHİN Ç., KENDÜZLER E., AYRANCI E., ÇELİKKAN H., et al.  
in: Nicel Kimyasal Analiz, Ali Rehber TÜRKER, Editor, Palme, Ankara, pp.13-50, 2015

### Refereed Congress / Symposium Publications in Proceedings

- I. **Formation of an intermetallic compound between selenium and copper**  
KARACAN M. S. , SOMER G.  
33 th IUPAC CONGRESS, Budapest, Hungary, 17 - 21 August 1991, pp.120
- II. **New antimony III complexes as potent inhibitors of photosystem II carbonic anhydrase and glutathione reductase**  
Rodionova M., KARACAN M. S. , TUNÇ T., Venedik K. B. , Mamaş S., KARACAN N., Shitov A., Zharmukhamedov S., Klimov V., Allakhverdiev S. I.  
Photosynthesis Research for Sustainability, Puschino, Russia, 19 - 25 June 2016
- III. **Quantitative structure-activity relationship analysis of perfluoroisopropylidinitrobenzene derivatives known as photosystem II electron transfer inhibitors**  
KARACAN M. S. , KARACAN N., Kılıçer Ç., YAKAN M., Allakhverdiev S.  
Photosynthesis Research for Sustainability” Baku, Azerbaijan, 9 - 11 August 2011
- IV. **Inhibition of photosystem II carbonic anhydrase activity by some sulphonamides and their metal complexes**  
KARACAN M. S. , Shitov A., Kupriyanova E., Zharmukhamedov S., KARACAN N., Mamaş S., ÖZBEK N., ÖZDEMİR ÖZMEN Ü., BALABAN GÜNDÜZALP A., Klimov V., et al.  
Photosynthesis Research for Sustainability” Baku/ Azarbaycan, 24 - 30 July 2011
- V. **Method development of determination of Pb(II) and Sn(II) by square wave anodic stripping voltammetry**  
Ceylan M., KARACAN M. S. , Mamaş S., Kılıçer Ç., ÖZDEMİR ÖZMEN Ü.  
8th International electrochemistry meeting Antalya, Türkiye, 8 - 11 October 2009
- VI. **Atmosferdeki bazı organik kirleticilerin etkisinin hesaplama yolu ile incelenmesi**  
MUHAMMET S. M. , KARACAN M. S.

Uluslararası V.Ulusal Meslek Yüksek okullar Sempozyumu kONYA, 27 - 29 May 2009

**VII. Reconstitution of the Water-Oxidizing Complex in Manganese-Depleted Photosystem II Complexes by Using Synthetic Binuclear Manganese Complexes**

KARACAN M. S. , KARACAN N., Allakhverdiev S., SOMER G., Klimov V.

Proceedings of the X th International Photosynthesis Congress, Montpellier, France, 20 - 25 August 1995, pp.247-250

**VIII. Reconstitution of the water-oxidizing complex in Mn-depleted photosystem II complexes by using synthetic binuclear Mn-complexes**

Allakhverdiev S., Karacan M. S. , Somer G., Karacan N., Khan E., Rane S., Padhye S., Klimov V., Renger G.

Xth International Photosynthesis Congress, Montpellier, France, 20 - 25 August 1995, pp.247-250

**IX. Bakırlı ortamda selenit iyonunun CV tekniği ile incelenmesi**

SOMER G., KARACAN M. S.

VII. Kimya ve Kimya Mühendisliği Simpozyumu, Gazimagosa, KKTC, Gazimagusa, Cyprus (Kkctc), 15 May 1991

## Supported Projects

KARACAN M. S. , Project Supported by Higher Education Institutions, Eser Elementlerinin Voltametrik Metotlarla Dolaylı Analizinde Bazı Ligandların Kullanılması, 2007 - Continues

KARACAN M. S. , Project Supported by Higher Education Institutions, Eser Elementlerin Polarografik Analizi için Bazı Kompleksleştiricilerin Denenmesi, 2006 - Continues

KARACAN M. S. , Project Supported by Higher Education Institutions, Şimşir Bitkisine Hava Kirletici Eser Element Etkisinin ICP-OES ile İncelenmesi, 2005 - Continues

KARACAN M. S. , Project Supported by Higher Education Institutions, Bazı bitkilere hava kirliliğinin etkisinin spektrofotometrik metotla inc., 2001 - Continues

Karacan M. S. , Karacan N., Özbek N., TÜBİTAK International Bilateral Joint Cooperation Program Project, Synthesis and screening of carbonic anhydrase and glutathione reductase inhibitors in plant, 2013 - 2015

Karacan M. S. , Karacan N., Çelikkan H., Arslan H., TÜBİTAK International Bilateral Joint Cooperation Program Project, Molecular mechanism of action of novel chemical inhibitors of electron transport of photosystem II, 2009 - 2011

## Citations

Total Citations (WOS):197

h-index (WOS):7