

NİĞDE UNIVERSITY
FACULTY OF SCIENCE AND LETTERS
Department of Chemistry

Chairman's Introduction

When the University of Nigde was founded in 1992, one of the first departments to be established was the Department of Chemistry under Faculty of Science and letters. From the beginning, the Department has embodied the University's central mission of excellence in both research and teaching.

Our current faculty numbers 14, with considerable strength in the core areas of organic, inorganic, analytical and physical chemistry as well as in interdisciplinary research areas at the boundaries with biology, physics, soil and materials sciences. Faculty members hold joint appointments with other departments and many are members of one or more interdisciplinary research institutes, centers, and committees (for example, TUBITAK (The Scientific and Technological Research Council of Turkey, and Materials Research Sciences and Engineering Centers).

The Department has been one of the leading positions among Cappadocia regional chemistry departments. Approximately 65 graduate students are in residence at any one time, and approximately 10 of graduate students receive Ph.D. and MSc degrees each year. The undergraduate program is also extremely strong. Some of undergraduates participate in research projects with the faculty. Very strong interdisciplinary programs are available for interested students. A particularly popular but demanding program involves chemistry and material science, engineering, physics and biology. Similar interdisciplinary opportunities exist in the graduate programs, for example, between Chemistry and mechanical engineering. The projects have been accomplished so far in the department financially supported by TUBITAK, NATO, State Planning Organization, European Community, and Agricultural Ministry. Currently, 2 TUBITAK Projects and one KOSGEB projects have still been continuing besides approximately ten research projects funded by Nigde University Research Project Units.

The faculty research laboratories of the department are housed in the Science and letters faculty under teaching laboratories, research laboratories and instrumental analysis laboratories. The Department operates very good shared-instrumentation facilities that support its research and teaching missions. The Mass Spectrometry Center features and GS-MS instruments for a wide range of molecular, cluster, polymer, and biological samples, FAAS is in use for metal determinations in environmental, pharmaceutical metal containing compounds and industrial samples, FT- Infrared Spectrometer is located in teaching laboratories with few Ultraviolet spectrometers. The X-ray Diffraction Laboratory operates state-of-the-art single-crystal and powder diffract meters with CCD detection and ICP-MS laboratories located at central research laboratories of Nigde University. Two HPLC units, one Chromatodrone and JPC chromatography for polymer science available and are staffed by PhD-level experts.

Aydın Demircan, Chairman

List of Academic Staffs

1. [Prof. Dr. Aydın DEMİRCAN \(Chair\)](#) → Organic Chemistry
2. [Prof. Dr. Meysun İbrahim ABDULLAH](#) → Organic Chemistry
3. [Assoc. Prof. Dr. Emel BAYOL](#) → Physical Chemistry
4. [Assoc. Prof. Dr. İbrahim DEMİR](#) → Inorganic Chemistry
5. [Assoc. Prof. Dr. Orhan GEZİCİ](#) → Analytical Chemistry
6. [Assoc. Prof. Dr. Mustafa UÇAN](#) → Analytical Chemistry
7. [Assoc. Prof. Dr. Özlem SARIÖZ](#) → Inorganic Chemistry
8. [Assoc. Prof. Dr. Ersen TURAC](#) → Physical Chemistry
9. [Assist. Prof. Dr. Ali İhsan PEKACAR](#) → Inorganic Chemistry
10. [Assist. Prof. Dr. Rifat BATTALOĞLU](#) → Organic Chemistry
11. [Assist. Prof. Dr. Selma YILDIRIM UÇAN](#) → Inorganic Chemistry
12. [Assist. Prof. Dr. Yavuz SÜRME](#) → Analytical Chemistry
13. [Assist. Prof. Dr. Demet ÖZKIR](#) → Physical Chemistry
14. [Res. Assist. Abdullah Taner BİŞGİN](#) → Analytical Chemistry

Dr. Aydın DEMİRCAN

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Educational Background:

BSc: Department of Chemistry, Erciyes University, Kayseri, Turkey, June 1992.

MSc: Faculty of Chemistry, Reading University, Reading, UK, 1995.

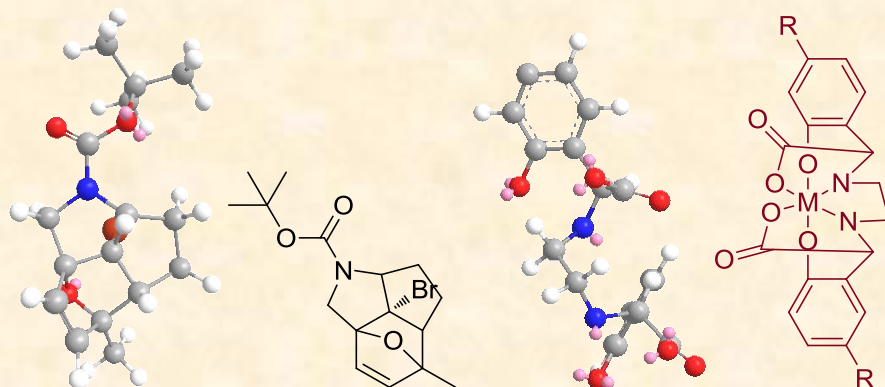
Title of Thesis: “An intramolecular free radicalic cycloaddition onto furans”.

PhD: School of Chemistry, Physics and Environmental Sciences, Sussex University, Brighton, UK, 1999.

Title of Thesis: “Cascade reactions involving a furan core”.

Research Field

We have been mainly interested Organic Synthesis with Furan's compound as well as their methodology and their cyclisation progress using Intramolecular Diels Alder and free radical cycloadditions. We have also explored cycloaddition under catalytic condition using Palladium mediated complexes. Currently, our group produce a smart fertilizing agents like EDDHA-Fe, EDDHA-Zn and EDDHA-Cu for iron, zinc and copper deficiency for vegetation related to industrial production.



Projects

1. Synthesis and producing smart fertilizing agents, EDDHA-Fe, EDDHA-Cu, and EDDHA-Zn for metal deficiency in Vegetates, KOSGEB, 2015-FNC-001.

2. Polycyclic Ring Construction, using Palladium II acetate and Bu_3SnH , supported by DPT(State Planning Organization) of Turkey, 2002-2004. 3. Intramolecular Diels Alder and Radicalic cyclization of Furan, thiophene and Pyrrol, Supported by The Scientific & Technological Research Council of Turkey 2377(103T121) 2004-2006.

4. Domino type reactions of Intramolecular Diels-Alder (IMDA) and Free Radical Reaction to furan cored compounds; The Scientific & Technological Research Council of Turkey -TBAG-(PN:107T831).

5. Establishment of Central Research Laboratory of Nigde University, supported by state planning organization, DPT. 2010-2013.

6. Theoretical and Practical Training about Spectrometers and Advanced Microscopes (SEM); Supported by EU projects under LLP Programme (PN: 2010-1-TR1-LEO02-14652) 2010-1012)

References

Aydin Demircan, "A Study of Palladium Catalyzed Intra/Intermolecular Cascade Cross Coupling / Cyclizations Involving Bicyclopropylidene" *Molecules* 2014, 19, 6058-6069.

Davit Jishkariani, C. Dennis Hall, **Aydin Demircan**, Blake J Tomlin, Peter James Steel, and Alan R. Katritzky, "Push-pull Triazines Derived from 1-(Benzylideneamino)- and 1-(Sulfonimido)-azolylienes", *Journal of Organic Chemistry*, 2013, 78, 3349.

M. Karaarslan, E. Gokturk, **A. Demircan**, "Thermal Intramolecular Diels-Alder Reaction of Furan; Synthesis of Nitrogen tetracycles, Isobenzofuran And Isobenzothiophene" *J. Chem. Res.*, 2007, 2, 117.

A. Demircan, M. Karaarslan and E. Turac, "A Facile Synthesis of Heterocycles From Furfurylbromoalkenes Using Thermal IMDA Cycloaddition", *Heterocyclic Commun.*, 2006, 8, 233.

A. Demircan, M. Demiralp, Y. Kaplan, M. D. Mat, T. N. Veziroglu, "An experimental and theoretical study on $\text{LaNi}_5\text{-H}_2$ in two different designated reactors" *Int. J. Hydrogen Energ.*, 30, 1437-1446, (2005).

A. Demircan and P. J. Parsons, "The Synthesis of Fused Ring Systems Utilising the Intramolecular Addition of Alkenyl Radicals to Furans" *Eur. J. Org. Chem.*, 2003, 9, 1729.

Dr. Meysun İbrahim ABDULLAH

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Educational Background:

BSc: Department of Chemistry, Bagdad University, Bagdad, Iraq 1974.

MSc: Faculty of Chemistry, Wales University, Cardiff, UK, 1976.

PhD: Faculty of Chemistry, Wales University, Cardiff, UK, 1981.

Research Field

- Isolation and Characterization of natural products from Plants
- Reaction of Indoles and its derivatives
- Toxicological effects of indole's derivatives
- Supercritical fluid extraction
- Synthesis of some Erythrina Alkaloids.

References

Özlem Sarıöz, Osman Serindağ, **Meysun İ. Abdullah**” Synthesis and characterization of Aminophosphines, Bis(amino)phosphine derivatives, and their Molybdenum(0) complexes“ Phosphorus, Sulfur, and Silicon, 184,1785-1795, (2009).

G. Görür, **M.I. Abdullah** and M.İşik “Insecticidal activity of *Thymus*, *Veronica* and *Agrimonia*'s essential oils against the Cabbage Aphid, *Brevicoyne brassicae*” *Acta phytopathologica et Entomologica Hangarica*, 43(1), 201-208, (2008).

Ö. Sarıöz, **M.İ. Abdullah** , “Electrophilic substitution reactions of indole alkaloids with α,β -Unsaturated carbonyl compounds in the presence of K10 montmorillonite” *Russian J. of Organic Chemistry*, Vol 42, No 6, 879-882, (2006)

Ayten Öztürk , **Meysun I. Abdullah**; “Toxicological effect of indole and its azo dye derivatives on some microorganisms under aerobic conditions.”, *Science of the Total Environment*, 358, 137– 142, (2006).

M. İ. Abdullah, J.C. Young ve D.E. Games; “Supercritical fluid extraction of carboxylic and fatty acids from *Agaricus* spp. Mushrooms.” *Journal of Agriculture and Food Chemistry*, Vol. 42, No 3, pp. 718-722 , (1994)

M. İ. Abdullah, A.H. Jackson, P.P. Lynch ve K.A. Record; “Electrophilic Substitution on indoles part 18, Hammett correlations of the coupling of Aryl diazonium tetrafluoroborates with indoles”. *Heterocycles*, , Vol. 30, No 1, pp. 317-320, (1990).

M. İ. Abdullah, A.S. Chawla ve A.H. Jackson, “Partial synthesis of 11- oxygenated Erythrina alkaloids”. *J.Chem. Soc. Chem. Comm.* 904-906, (1982).

M. İ. Abdullah, A. H. Jackson, et al.; “Studies of Erythrina alkaloids, part III. GC/MS studies of alkaloids in the seeds of further fourteen species”.*J Ann.Missour. Bot. Gard.* 66, pp. 533-540, (1979).

Ali Gürten, Mustafa Uçan, **Meysun I. Abdullah** and Ahmet Ayar, “Effect of the temperature and mobile phase composition on the retention behavior of nitroanilines on ligand-exchange stationary phase.”*Journal of Hazardous Materials*, B135,53-57,(2006)

I. Barakat, A. H. Jackson &**M. İ. Abdullah**, “ Further studies of Erythrina alkaloids” *J. of Natural Products*, (Lloydia) 40 (5), pp. 471-475, (1977)

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Education Background :

BSc :Nigde Universty, Art of Science, Depertmant of Chemistry

MSc : Nigde Universty, Art of Science, Depertmant of Chemistry

PhD : Nigde Universty, Art of Science, Depertmant of Chemistry

Research Field Description:

Electrochemistry, Corrosion

References

E. Bayol, K. Kayakırılmaz, M. Erbil, The inhibitive effect of hexamethylenetetramine on the acid corrosion of steel, *Materials Chemistry and Physics*, 104, (2007) 74–82.

Z. A. Öztürk, R. Battaloğlu, K. Kayakırılmaz, M. Aksoy, **E. Bayol**, Nutritional status and zinc levels in serum and hair of university students in Niğde, Turkey, *Asian Journal of Chemistry*, Vol. 19, No. 6, (2007) 4323-4332.

K. Kayakırılmaz, **E. Bayol**, H.B. Yılmaz, H.K. Özgün, T. Özbek, D. Topuz, R. Battaloğlu, Nutritional status and calcium levels in serum and urine of primary hypertensives and normotensives, *Asian Journal of Chemistry*, Vol. 20, No. 5, (2008) 3598-3616.

E. Bayol, T. Gürten, A.A. Gürten, M. Erbil, Interactions of some Schiff base compounds with mild steel surface in hydrochloric acid solution, *Materials Chemistry and Physics*, 112 (2008) 624-630.

E. Bayol, A.A. Gürten, M. Dursun, K. Kayakırılmaz, Adsorption behavior and inhibition corrosion effect of sodium carboxymethyl cellulose on corrosion of mild steel in acidic medium, *Acta Physico Chimica Sinica*, 24 (2008) 2236-2242.

A.A. Gürten, **E. Bayol**, K. Kayakırılmaz, M. Erbil, Influence of polyvinylpyrrolidone on rebar corrosion in sulphate solution, *Steel and Composite Structures*, 9 (2009) 77-87.

Y. Sürme, A.A. Gürten, **E. Bayol**, E. Ersoy, Systematic corrosion investigation of various Cu–Sn alloys electrodeposited on mild steel in acidic solution: Dependence of alloy composition, *Journal of Alloys and Compounds*, 485 (2009) 93-103.

Y. Sürme, A.A. Gürten, **E. Bayol**, Corrosion behavior of mild steel in the presence of scale inhibitor in sulfuric acid solution, *Protection of Metals and Physical Chemistry of Surfaces*, 47 (2011) 117-120.

K. Kayakırılmaz, **E. Bayol**, H.B. Yılmaz, S. Arıoğul, Nutritional status and magnesium levels in serum and urine of primary hypertensives and normotensives, *Asian Journal of Chemistry*, Volume: 23 Issue: 5 (2011) 2175-2180.

D. Özkır, **E. Bayol**, Inhibition efficiency of benzidine for mild steel in acidic media, *Protection of Metals and Physical Chemistry of Surfaces*, Volume: 47, Issue: 4, (2011) 517-527.

D. Özkır, K. Kayakırılmaz, **E. Bayol**, A.A. Gürten, F. Kandemirli, The inhibition effect of Azure A on mild steel in 1 M HCl. A complete study: Adsorption, temperature, duration and quantum chemical aspects, *Corrosion Science*, 56 (2012) 143–152.

R. Battaloğlu, K. Kayakırılmaz, **E. Bayol**, Determination of urinary calcium and magnesium levels by atomic absorption spectrophotometry in hypertensive patients, *Asian Journal of Chemistry*, Volume: 24 Issue: 6 (2012) 2369-2372.

D. Özkır, **E. Bayol**, A.A. Gürten,, Y. Sürme, F. Kandemirli, Effect of hyamine on electrochemical behaviour of brass alloy in HNO₃ solution, *Chemical Papers* Volume: 67 Issue: 2 (2013) 202-212.

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Education Background :

BSc :Nigde University, Faculty of Arts & Science, Department of Chemistry
MSc : Nigde University, Faculty of Arts & Science, Department of Chemistry
PhD : Nigde University, Faculty of Arts & Science, Department of Chemistry

Research Field Description:

Inorganic Chemistry, Synthesis of Metal Complexes and characterization

Dr. Orhan Gezici

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Background

BSc : Selcuk University, Faculty of Science and Arts, Department of Chemistry (1998-2002)
MSc : Selcuk University, Institution of Natural and Applied Sciences, Chemistry (2002-2004)
PhD : Selcuk University, Institution of Natural and Applied Sciences, Chemistry (2004-2010)
Lecturer : Nigde University, Faculty of Science and Arts, Department of Chemistry (2010 - ...)
Postdoc : ETH Zürich University, Institution for Chemical and Bioengineering (2013-2014)

Research Group: *GO-Science Group*

Dr. Orhan GEZİCİ

Ahmet Eren ÖZKAN (MSc Student)

İdris GÜVEN (MSc Student)

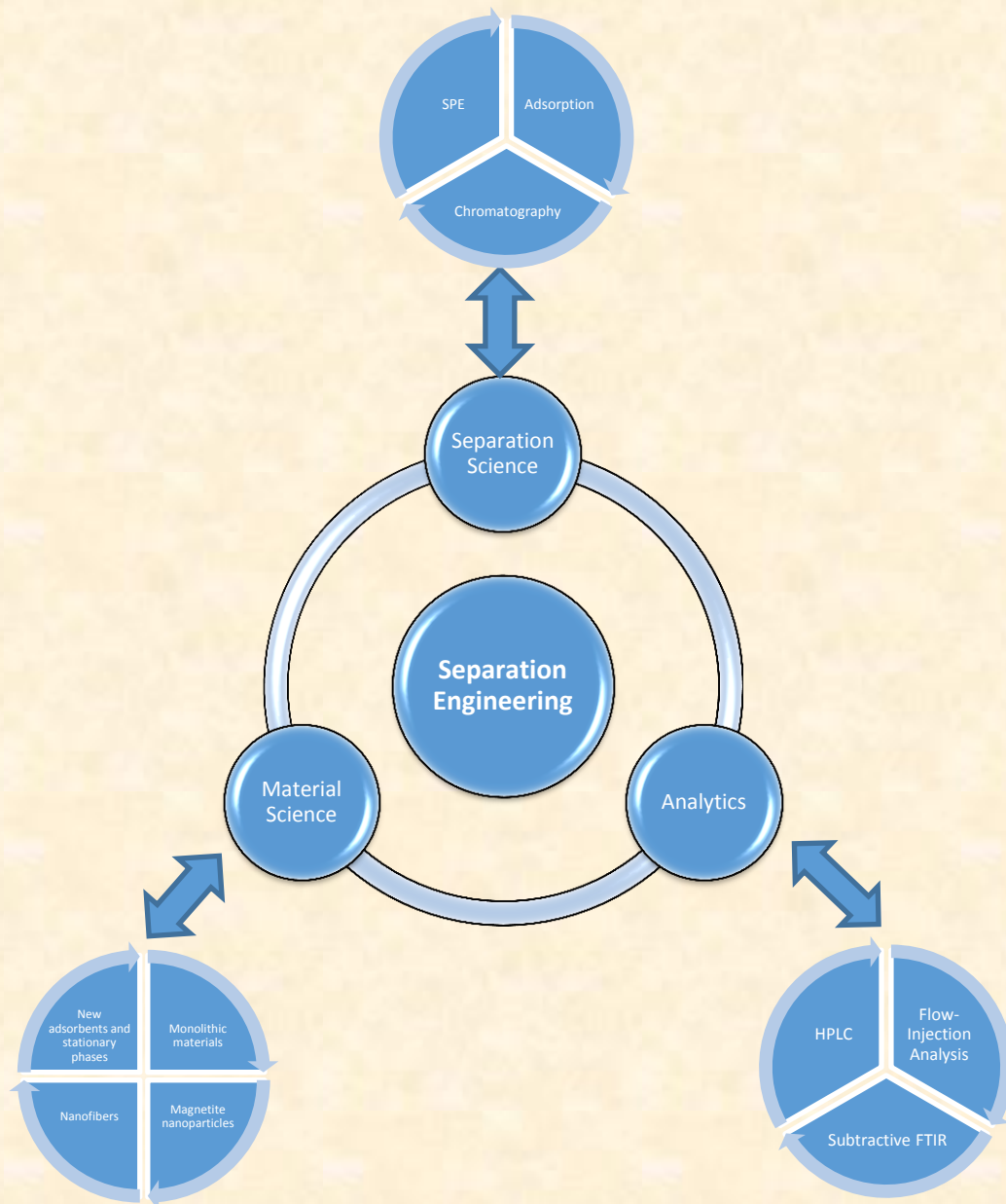
Seçkin HAYRAT (MSc Student)

Mahmut FİDANCI (MSc Student)

Brief description of the research field:

- All the aspects of separation and purification methods related with liquid-solid interfaces. Preparation of new-type adsorbents and stationary phases have been studied in deep. In this respect, the following topics are within the scope of our research group:
 - o Adsorption modelling and development of new-type adsorbents
 - o Development and characterization of new-type of stationary phases for High Performance Liquid Chromatography (HPLC)
 - o Particle-packed and monolithic columns
 - o Surface modification and immobilization process (silica-based materials, magnetite nanoparticles, cryogels, sporopollenin)
 - o Protein chromatography
 - o Frontal analysis and other dynamic methods to derive equilibrium binding data and isotherm model parameters
 - o Solid-phase Extraction (SPE)

- Preparation of new-type of nanofibers by electrospinning process
- Easy-to-use analytical methods and/or techniques for determination and characterization purposes are dealt with.
 - Flow-Injection Analysis
 - Subtractive FTIR spectroscopy
- Application of supramolecules and naturally-occurring biomacromolecules as adsorbent and stationary phase
 - Humic acid; Sporopollenin; Calixarenes



Maximizing efficiency and information required when minimizing separation-labor!

Selected Publications (Last 5 years)

- **O. Gezici**, M. Bayrakci, Calixarene-engineered surfaces and separation science, *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 83 (2015) 1-18. (Review Article)
- I. Perçin, R. Khalaf, B. Brand, M. Morbidelli, **O. Gezici**, Strong cation-exchange chromatography of proteins on a sulfoalkylated monolithic cryogel, *Journal of Chromatography A*, 1386C (2015) 13-21.
- M. Bayrakci, **O. Gezici**, S. Z. Bas, M. Ozmen, E. Maltas, Novel Humic Acid-Bonded Magnetite Nanoparticles for Protein Immobilization, *Materials Science and Engineering C*, 42 (2014) 546–552.
- **O. Gezici**, I. Demir, A. Demircan, N. Ünlü, M. Karaarslan, Subtractive-FTIR Spectroscopy to Characterize Organic Matter in Lignite Samples from Different Depths, *Spectrochimica Acta A*, 96 (2012) 63-69.
- **O. Gezici**, and H. Kara, Towards multimodal HPLC separations on humic acid-bonded aminopropyl silica: RPLC and LEC behavior, *Talanta*, 85 (2011) 2405-2410.
- **O. Gezici**, and H. Kara, Towards multimodal HPLC separations on humic acid-bonded aminopropyl silica: RPLC and HILIC behavior, *Talanta*, 85 (2011) 1472–1482.

Lectures

Analytical Chemistry	(Undergraduate)
General Chemistry	(Undergraduate)
Instrumental Analysis	(Undergraduate)
Modern Chromatographic Techniques	(Graduate)
The Chemistry of Humic Substances	(Graduate)
Ligand Adsorption	(Graduate)

Participated Projects

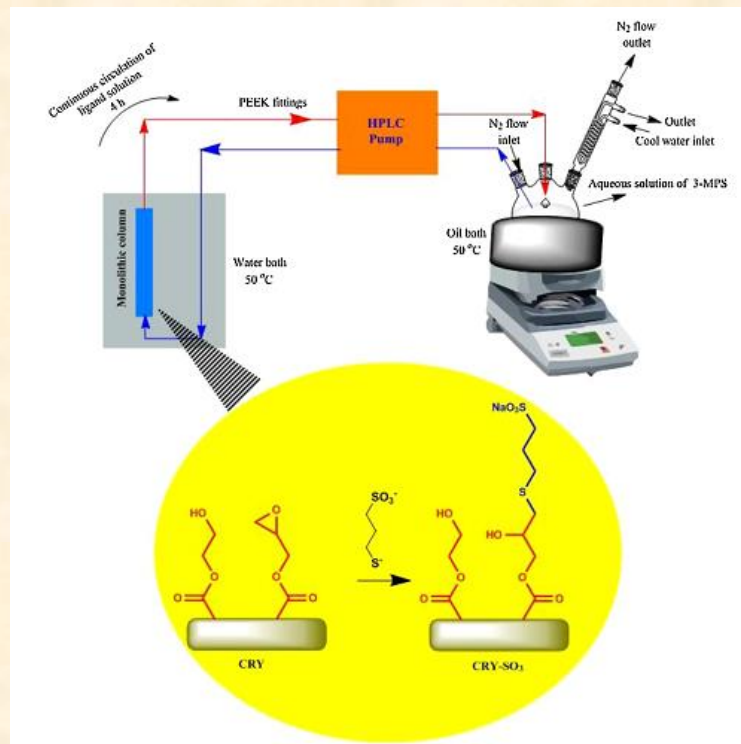
- Immobilization of humic acid onto silica and investigating its ion exchanger behavior; S.Ü. BAP 2003-136.
- Investigating the Stationary Phase Characteristics of Immobilized Humic Acid by Using Flow Injection-Chromatographic Methods; PhD Thesis; S.Ü. BAP 082011043.
- An investigation of the usability of sporopollenin support in solid-phase extraction and liquid chromatography; TÜBİTAK 106T090.
- Theoretical and practical training on spectrometers and microscopes; Leonardo da Vinci-Mobility Project; Belgium; Project No: 2010-1-TR1-LEO02-14652.
- The usability of humic acid-derived monolithic in protein ion-exchange chromatography; N.Ü. BAP Projesi, Proje No: FEB-2015/17 BAGEP. 2015 - ...
- Synthesis of new-type calixarene-cryogel based columns for protein ion-exchange chromatography; Project No: 115Z236. TÜBİTAK 1001 Project; 2015 - ...

Referee in

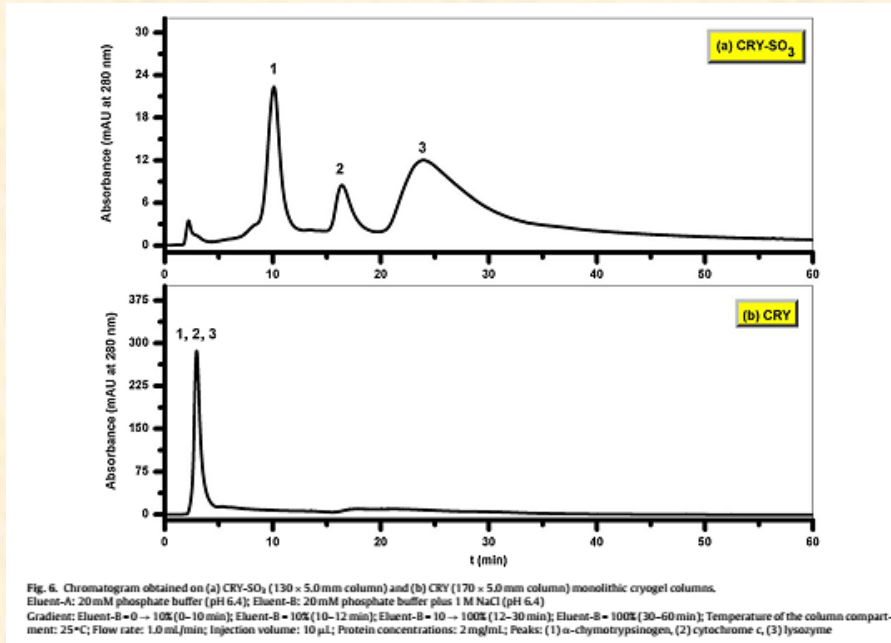
- *Talanta*
- *J. Chromatography A*
- *Anal. Chim. Acta*
- *J. Colloid. Interf. Sci.*

- J. Hazard. Mater.
- Sep. Purif. Technol.
- Spectrochim. Acta
- Desalination
- Chemical Engineering Journal
- Chemical Engineering Research and Design
- Desalination and Water Treatment
- Environmental Sci. Technol.
- Clean
- J. Separation Sci.
- Chemistry and Ecology
- Turkish Journal of Chemistry
- Instrumentation Sci. Technol.
- Current Analytical Technol.

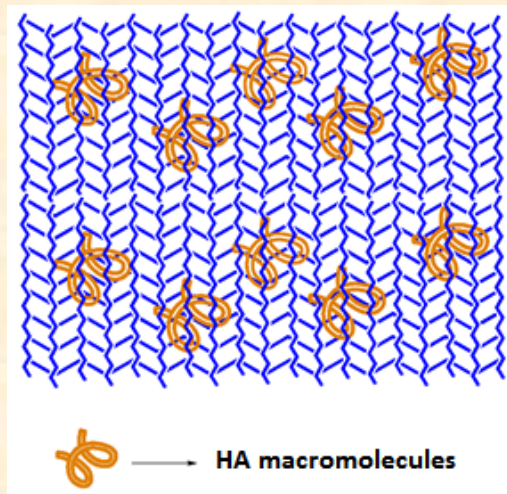
and some other journals.



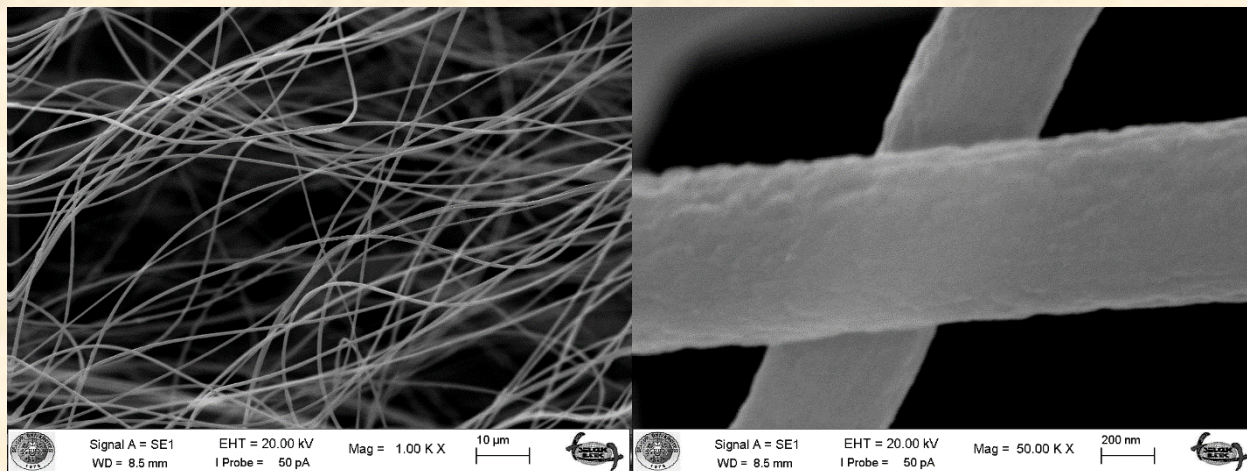
In-situ surface modification of a monolithic cryogel



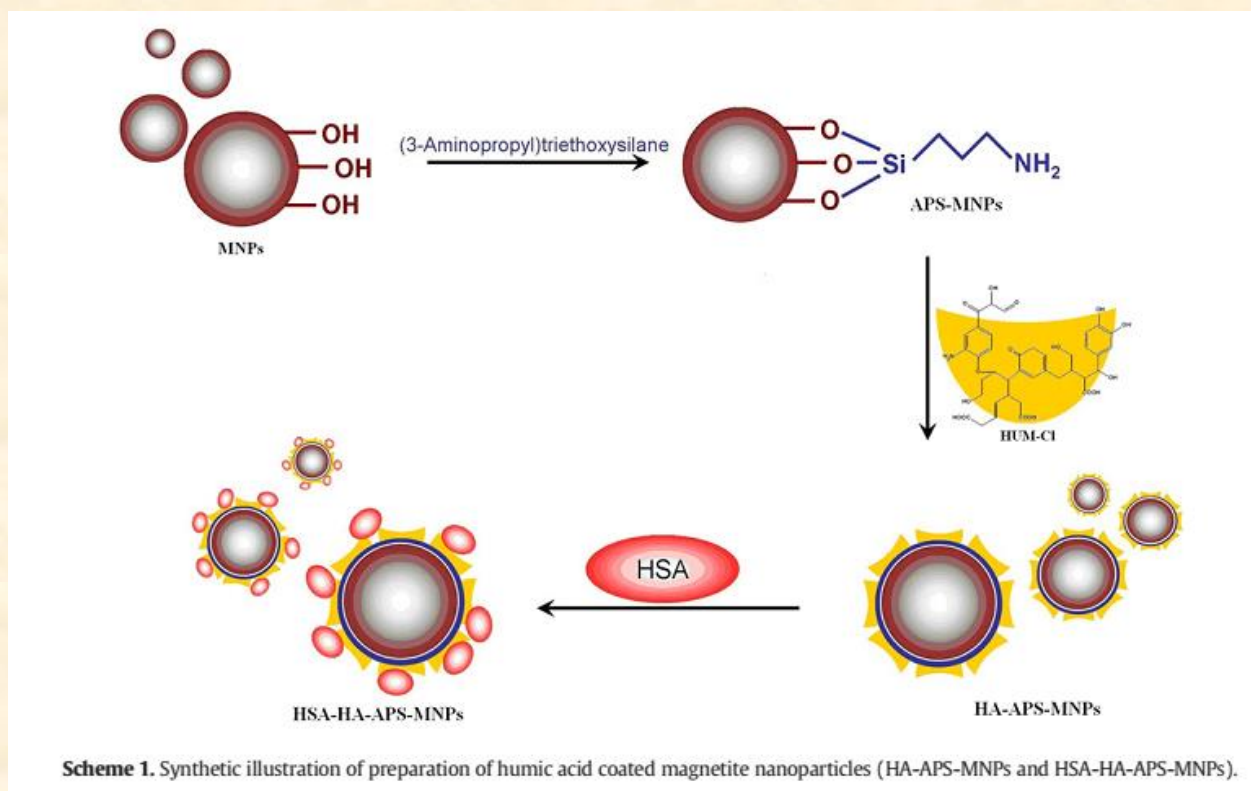
HPLC separation of three model proteins using the obtained monolithic cryogel column (Application of SCX chromatography)



Preparation of composite nanofibers



SEM images of composite nanofibers



Preparation of a new-type material for magnetic separation of proteins

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Education Background :

BSc : SelçukUniversity, Faculty of Arts and Sciences, Department of Chemistry

MSc : Niğde University, Graduate School of Natural and Applied Sciences

PhD : Niğde University, Graduate School of Natural and Applied Sciences

Research Area:

Solid Phase Extraction of dyes

Preconcentration of dyes by cloud point extraction and solid phase extraction

Publications

Bişgin, A.T., Narin, İ. and **Uçan, M.**, Determination of sunset yellow (E110) in foodstuffs and pharmaceuticals after separation and preconcentration via solid-phase extraction method, *Int. J. Food Sci. Technol.*, 50(4), 919-925, 2015.

Bişgin, A.T., Narin, İ., **Uçan, M.** and Soylak, M., A Comparative Study for Separation, Preconcentration and Determination of Tartrazine (E 102) in Soft Drink Samples by Two Kinds of Amberlite Resins, *Food Anal. Methods*, 8(8), 2141-2149, 2015.

Bişgin, A.T., Narin, İ. and **Uçan, M.**, Comparative column solid-phase extraction procedures for spectrophotometric determination of E129 (Allura Red) in foodstuffs, pharmaceutical and energy drink samples, *J. AOAC. Int.*, 98(4), 946-952, 2015.

Yavuz Sürme, A. Taner Bişgin, **Mustafa Uçan**, İbrahim Narin, Comparison of Preconcentration and Determination Methods of a Textile Dye by Spectrophotometry: Cloud Point Extraction and Solid-Phase Extraction, *Desalin. Water Treat.*, 2015.in Press.

Bişgin, A.T., Narin, I, **Ucan, M.** and Soylak, M., A new cloud point extraction procedure for determination of trace amount crystal violet in wastewater by UV-Vis. *Spectrometry, Oxid. Commun.*, 38(1), 232-240, 2015.

Dr. Özlem SARIÖZ

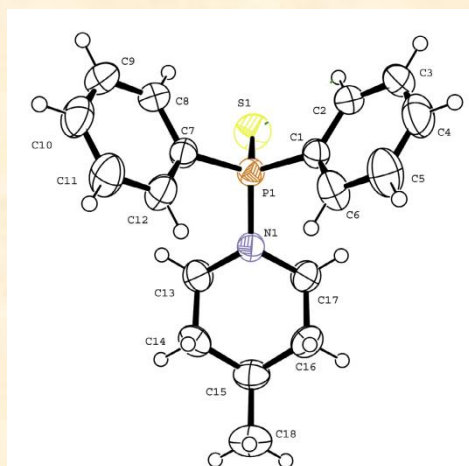
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Education Background :

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MSc : Department of Chemistry, Graduate School of Natural and Applied Sciences, Nigde University
PhD : Department of Chemistry, Graduate School of Natural and Applied Sciences, Nigde University

Research Field Description:

We synthesize and characterize aminophosphines, their chalcogen (O, S, Se) derivatives and metal complexes (Pd, Pt, Mo, Ni, Cu, Co) which may be useful in coordination chemistry, catalytic processes (as palladium-catalyzed cross-coupling reaction), biological activity studies and applications in electronic industries. We also investigate as ligands in solvent extraction of metal picrates such as Cu^{2+} , Ni^{2+} , Co^{2+} , Cd^{2+} and Pb^{2+} from water.



References

Ö. Sariöz, F. Kandemirli, S. Öznergiz, “Bis(4-methylpiperidinyl)-phenylphosphine and bis(4-benzylpiperidinyl)-phenylphosphine: Synthesis, derivatization, molybdenum complexes and DFT calculations” *Polyhedron*, 68: 103–111, **2014**,

H. Saracoğlu, **Ö. Sarioz**, S. Öznergiz, “Crystal structure, spectroscopic investigations and quantum chemical calculational studies of N-diphenylphosphino-4-methylpiperidine sulfide” *Journal of Molecular Structure*, 1063: 170–177, **2014**,

Ö. Sariöz, S. Öznergiz, “Aminophosphines Derived From 1-Amino-4-Methylpiperazine: Synthesis, Oxidation And Complexation Reactions”, *Phosphorus, Sulfur, and Silicon and the Related Elements*, 187: 906-913, **2012**.

Ö. Sariöz, Y. Sürme, V. Muradoğlu, “Heavy-metal extraction capability of chalcogenoic aminophosphines derived from 1-amino-4-methylpiperazine” *Chemical Papers*, 67 (10) 1345–1349, **2013**.

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Education Background :

BSc : Nigde University

MSc : Nigde University

PhD : Nigde University

Research Field Description:

Conducting Polymer and electropolymerization.

References

Turac, E., Sahmetlioglu, E., Gokturk, E., (2015) *Advances in Polymer Technology*, “Synthesis of conducting polymer/zinc sulfide nanocomposite films and investigation of their electrochemical and morphological properties ”, 34, 1, 21478.

Kumbul, A., Gokturk, E., **Turac, E.**, Sahmetlioglu, E., (2015), *Polymers for Advanced Technologies*, "Enzymatic oxidative polymerization of para-imine functionalized phenol catalyzed by horseradish peroxidase", 26, 1123-1129.

Tuncer, E., **Turac, E.**, (2013) *Advances in Polymer Technology*, “Synthesis and characterization of polyaniline /zinc sulphite composite films and investigation of properties”, 32, 4, 21373.

Turac, E., Sahmetlioglu, E., Toppare, L., Yuruk, H., (2011), *Journal of Applied Polymer Science*, “Synthesis and characterization of conducting copolymers of quinoxaline derivatives”, 120, 3, 1713-1719.

Turac, E., Sahmetlioglu, E., Toppare, L., Yuruk, H., (2010), *Designed Monomers and Polymers*, “Synthesis, characterization and optoelectrochemical properties of poly(2,5-di(thiophen-2-yl)-1-(4-(thiophen-3-yl)phenyl)-1H-pyrrole-co-EDOT)”, 13, 3, 261-275.

Turac, E., Sahmetlioglu, E., (2010), *Synthetic Metals*, “Oxidative polymerization of poly4-[(4-phenylazo-phenylimino)-methyl]-phenol catalyzed by horseradish peroxidase”, 160, 169–172.

Dr. Ali Ihsan PEKACAR

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Education Background :

BSc : Selcuk University, 1986, Konya, Turkey

MSc : Selcuk University, 1989, Konya, Turkey

PhD : Selcuk University, 1994, Konya, Turkey

Research Field Description:

- Synthesis of naphthyl glioxime and their chemical properties
- Electrochemical behavior some oxime compounds,
- Remove of some metal complexes from industrial waste like Cu, Zn, Pt etc.
- Complexes of Ni, Cu and Co with oximes
- Interested in macro cyclic compounds
- We are also interested in azometyn compounds

References

R. Battaloglu, **A. I. Pekacar** and Y. Kemal Yildiz, *Asian J. Chem.* **2012**, 24, 2377.

I. Demir, M. Bayrakçı, K. Mutlu and **A.I. Pekacar**, *Acta Chim. Slov.*, **2008**, **55**, 120.

I. Demir and **A. I. Pekacar**, *Synth. React.Inorg. Met.-Org. and Nano-Metal Chem.*, **2005**, 35, 825.

S. Yıldırım, **A. İ. Pekacar** and M. Uçan, *Synth. React.Inorg. Met.-Org. Chem.*, **2003**, 33(5), 873.

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Web Address :

Education Background :

BSc : Selcuk University-Turkey 1991

MSc : Nigde University-Turkey 1996

PhD : Nigde University-Turkey 2002

Research Field Description:

Natural Compounds, Nanofibers from natural compounds, Essential oils, PAH (Polycyclic Hydrocarbons), Heavy Metals.

Currently, we have developed variety of methods to created nanofibers from natural compounds.. We use electrospinning method. Currently, we are in the process of developing the application in nanotechonlogy of such natural plant and materials (such endemic plants or honey and pekmez) .

References

M. Gurhan Yalcin and **Rifat Battaloglu**, Investigation of Heavy Metals Pollution along the Nigde-Kayseri Road, Turkey, *Asian J. Chem.*, Vol. 19, pp. 2257-2264, 2007

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K. Kayakırılmaz, E. Bayol, H. K. Özgün, T. Özbek, D. Topuz, **Rifat Battaloğlu**, Nutritional Status and Calcium Levels in Serum and Urine of Primary Hypertensives and Normotensives, *Asian J. Chem.*, Vol. 20, 3598-3616, 2008.

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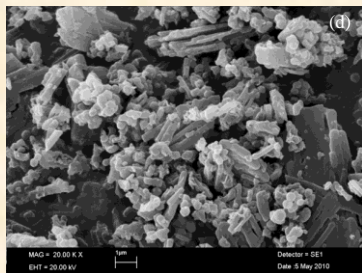
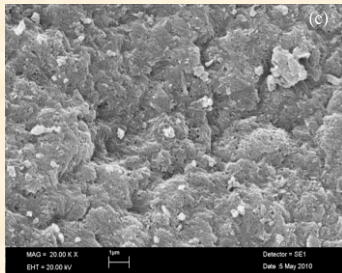
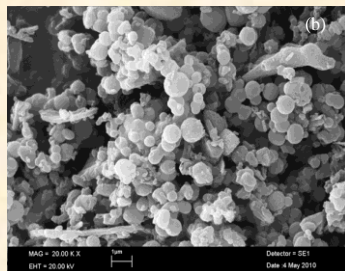
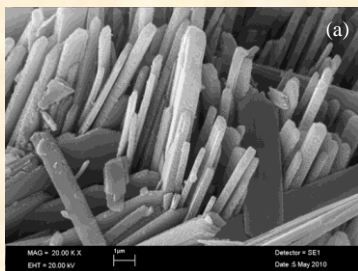
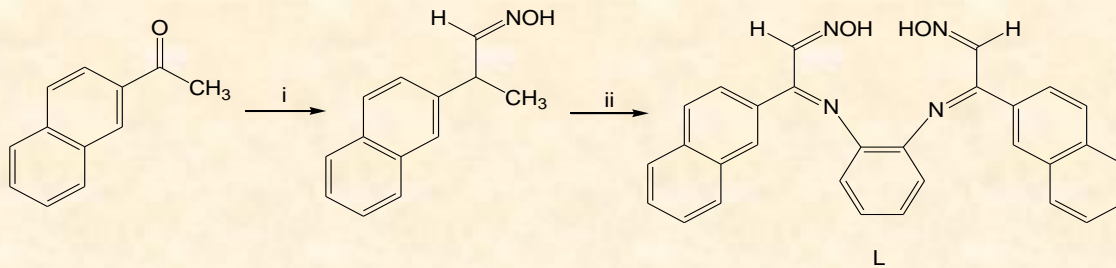
Education Background :

BSc : Hacettepe University, 1993, Ankara, TURKEY

MSc : Nigde University, 1996, Nigde, TURKEY

PhD : Nigde University, 2002, Nigde, TURKEY

Research Field Description: Synthesis and characterization of Schiff base, Oxime, Glyoxime and their transition metal complexes.



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Education Background :

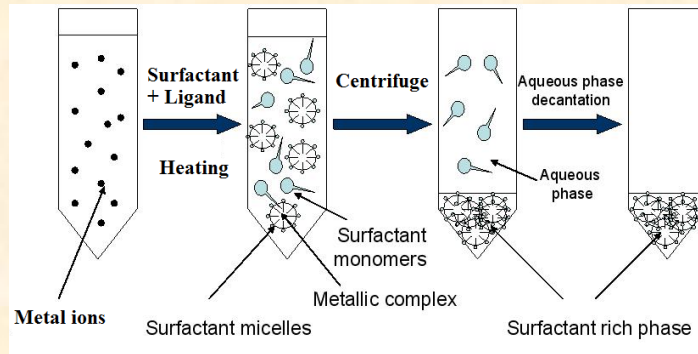
BSc : Niğde University, Faculty of Arts and Sciences, Department of Chemistry, (2002)

MSc : Niğde University, Graduate School of Natural and Applied Sciences (2005)

PhD : Niğde University, Graduate School of Natural and Applied Sciences (2011)

Research Field Description:

- Trace element analysis by **FAAS**.
- **Cloud point extraction** and solid phase extraction on heavy metals and dyes.
- Removal, separation and preconcentration of hazardous metal ions from industrial wastewaters.



The main procedure of cloud point extraction

One TUBITAK project is still processing and 5 BAP project are finished.

Selected SCI articles (5 of 18)

Sürme Yavuz, Gürten A. Ali, Kayakırılmaz Kadriye (2013). Electrodeposition, characterization and long term stability of NiW and NiWZn coatings on copper substrate in alkaline solution. *Metals and Materials International*, 19(4), 803-812.

Sarıöz Özlem, **Sürme Yavuz**, Muradođlu Vefa (2013). Heavy-metal extraction capability of chalcogenoic aminophosphines derived from 1-amino-4-methylpiperazine. *Chemical Papers*, 67 (10), 1345-1349.

Sarıöz Özlem, **Sürme Yavuz**, Muradođlu Vefa, Malgaç Burcu (2013). Synthesis and characterization of triethylammonium 2-(diphenylphosphinoamino)-5-methylbenzenesulfonate and use of it as a new complexing agent in solvent extraction of Ni (II) ions from water. *Desalination and Water Treatment*, 51(28-30), 5409-5413.

Sürme Yavuz, Demirci Onur Burak (2014). Determination of direct violet 51 dye in water based on its decolorisation by electrochemical treatment. *Chemical Papers*, 68(11), 1491-1497.

Yavuz Sürme, A. Taner Bişgin, Mustafa Uçan, İbrahim Narin, Comparison of Preconcentration and Determination Methods of a Textile Dye by Spectrophotometry: Cloud Point Extraction and Solid-Phase Extraction, *Desalin. Water Treat.*, 2015.

Dr. Sürme is referee in: Journal of Solid State Electrochemistry, The Journal of Applied Electrochemistry, Journal of Applied Surface Science, Desalination and Water Treatment, Current Analytical Chemistry.

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Education Background :

BSc : Selcuk University, Faculty of Arts & Sciences, Department of Chemistry (2002).

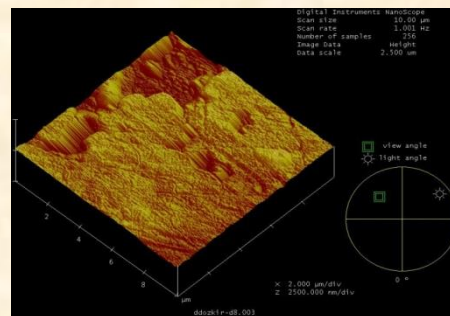
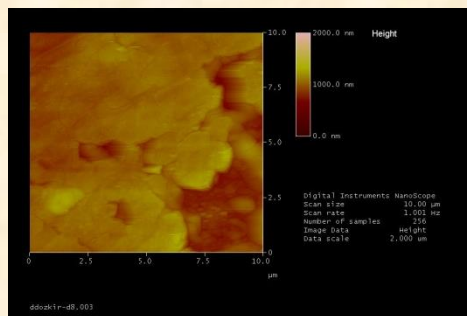
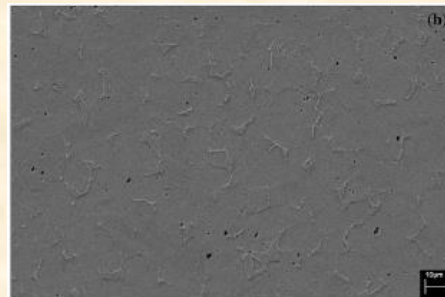
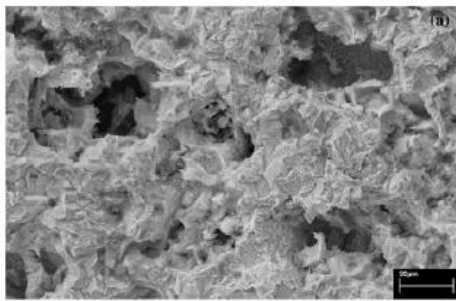
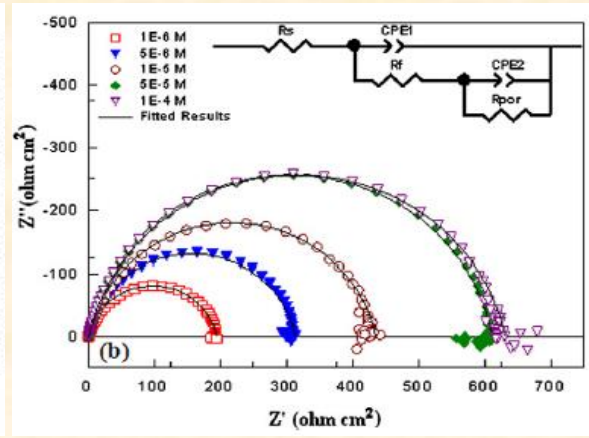
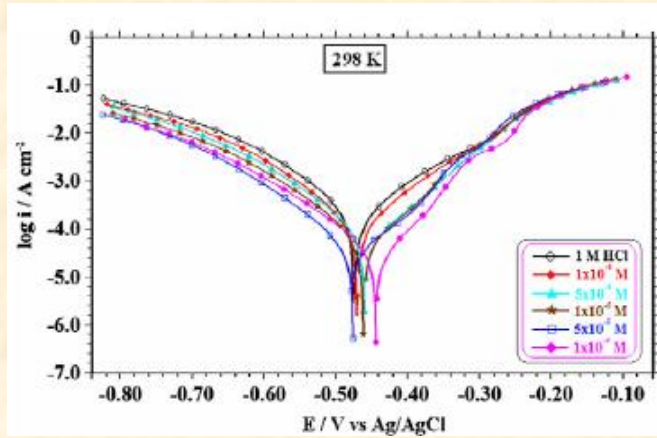
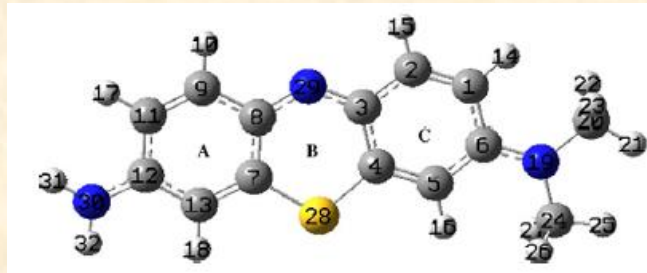
MSc : Selcuk University, Graduate School of Natural Sciences, Department of Chemistry (2005).

PhD : Nigde University, Graduate School of Natural and Applied Sciences, Department of Chemistry (2012).

Research Field Description:

- Material Sciences
- Acidic Corrosion
- Chemical Synthesis including Schiff base and their inhibitor efficiency
- Physical and Electrochemical Properties of the inhibitors in question
- AFM, SEM images of metal and Electrochemical Impedance Spectroscopy

Acid containing solutions are widely used in chemical and several industrial processes such as acid pickling, acid cleaning, acid descaling and oil well acidizing, which require the use of corrosion inhibitors. My studies generally focus on the inhibition efficiency of heterocyclic compounds (Schiff base and other organic compounds) and aim to find application oriented inhibitors. The inhibitor efficiencies of these compounds are investigated on metal surface in acidic media. These studies were carried out at different concentrations, temperatures and durations. Electrochemical impedance spectroscopy is a rapid and convenient method for investigation of protective properties of organic inhibitors on metals. More reliable results can be obtained by this method. The results are evaluated by using Electrochemical Impedance Spectroscopy, Linear Polarization Resistance, potentiodynamic polarization, SEM and AFM methods. The electrochemical experiments are performed with a standard three-electrode cell, consisting of working electrode, counter electrode, and reference electrode (Ag/AgCl).



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Demet Özkır and Emel Bayol, “Inhibition efficiency of Benzidine for mild steel in acidic media” *Protection of Metals and Physical Chemistry of Surfaces*, 47, 4 (2011) 517–527.

Demet Özkır, Kadriye Kayakırılmaz, Emel Bayol, A. Ali Gürten, Fatma Kandemirli, “The inhibition effect of Azure A on mild Steel in 1 M HCl. A complete study: Adsorption, temperature, duration and quantum chemical aspects” *Corrosion Science*, 56 (2012) 143–152.

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Education Background :

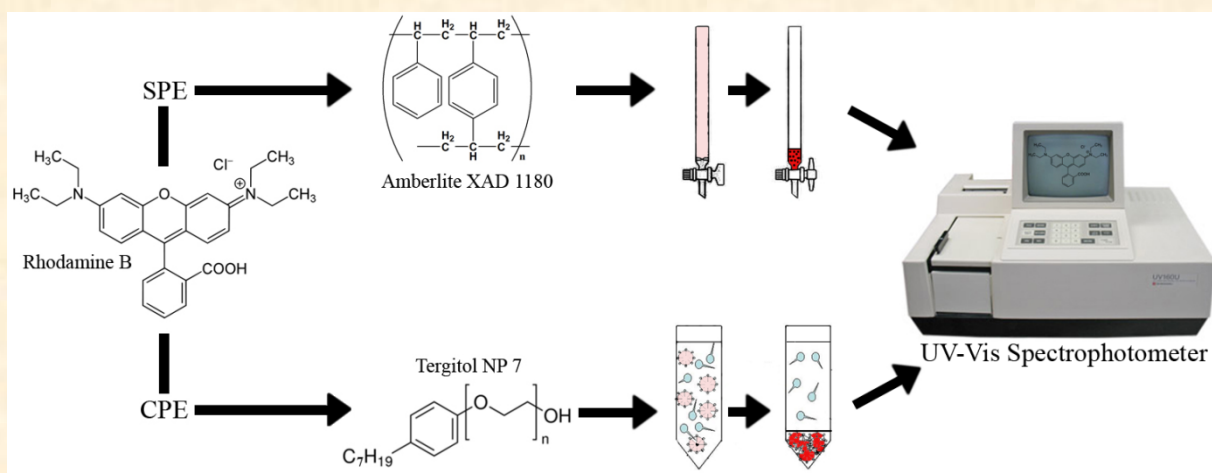
BSc : Niğde University, Faculty of Arts and Sciences, Department of Chemistry, (2005-2009)

MSc : ----

PhD : Niğde University, Graduate School of Natural and Applied Sciences (2009-Continue)

Research Field Description:

- Currently we have developed various analytical methods including separation, extraction, purification and preconcentration to determine toxic harmful substances especially heavy metals and dyes.
- Our future researches are synthesis of new artificial or natural resins for determination of heavy metals by solid-phase extraction method.
- We have focused enrichment and separation methods including Cloud Point Extraction and Solid-phase Extraction.



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Bişgin, A.T., Narin, İ. and Uçan, M., Determination of sunset yellow (E110) in foodstuffs and pharmaceuticals after separation and preconcentration via solid-phase extraction method, *Int. J. Food Sci. Technol.*, 50(4), 919-925, 2015.

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Bişgin, A.T., Narin, İ. and Uçan, M., Comparative column solid-phase extraction procedures for spectrophotometric determination of E129 (Allura Red) in foodstuffs, pharmaceutical and energy drink samples, *J. AOAC. Int.*, 98(4), 946-952, 2015.

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Bişgin, A.T., Narin, I, Ucan, M. and Soylak, M., A new cloud point extraction procedure for determination of trace amount crystal violet in wastewater by UV-Vis. *Spectrometry, Oxid. Commun.*, 38(1), 232-240, 2015.