

# CURRICULUM VITAE

## Huseyin Bekir YILDIZ

### 1.PERSONAL DATA

**1.1. Birth place and date** : Kastamonu, Turkey, 17<sup>th</sup> February 1977

**1.2. Address** : KTO Karatay University, Faculty of Engineering, Department of Materials Science and Nanotechnology Engineering, 42020-Karatay, Konya, Turkey.

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**1.6. Languages** : English (Fluent), German (Fluent), Hebrew (Intermediate)

### 2. EDUCATION

**2.1. B.S.** : June 1999, Department of Chemistry, Middle East Technical University, Ankara, Turkey

**2.2. M.S.** : June 2002, Department of Chemistry, Middle East Technical University, Ankara Turkey

**2.3. Ph. D.** : January 2007, Department of Chemistry, Middle East Technical University, Ankara, Turkey.

**Thesis Title:** Synthesis and Characterization of Conducting Copolymers of Thiophene Ended Poly(ethylene oxide): Their Electrochromic Properties and Use in Enzyme Immobilization.

**Thesis Advisor:** Prof. Dr. Levent Toppare

### **3. PROFESSIONAL EXPERIENCES**

**January 2017-Present:** Working as a Professor Doctor in Department of Materials Science and Nanotechnology Engineering, KTO Karatay University, Konya, Turkey

**March 2015-present:** Working as the Director of Graduate School of Engineering and Natural Sciences at KTO Karatay University, Konya, Turkey.

**January 2015-December 2016:** Working as an Associate Professor Doctor in Department of Materials Science and Nanotechnology Engineering, KTO Karatay University, Konya, Turkey

**February 2012-December 2014:** Working as an Associate Professor Doctor in Department of Chemistry, Kamil Ozdag Science Faculty, Karamanoglu Mehmetbey University, Karaman, Turkey

**April 2013 – June 2013: FEBS (Federation of European Biochemical Societies) *Postdoctoral Fellow*,** Lund University Department of Chemistry, Lund Sweden. **Advisor: Prof.Dr. Lo Gorton**

**August 2009 – January 2012:** Working as an Assistant Professor Doctor in Department of Chemistry, Kamil Ozdag Science Faculty, Karamanoglu Mehmetbey University, Karaman, Turkey

**August 2011 – November 2011: DAAD *Postdoctoral Fellow*,** Max-Planck Institute of Colloids and Interfaces, Potsdam Germany. **Advisor: Dr. Dmitry Shchukin**

**January 2010 – July 2010: TUBITAK *Postdoctoral Fellow*,** University of California at Berkeley, Department of Chemistry, USA. **Advisor: Prof. Dr. Gabor Somorjai**

**February 2009 – July 2009:** Working as an Instructor in the Chemistry Department of Selcuk University, Konya, Turkey.

**July 2008 – January 2009:** Doing Military Service

**May 2007 - June 2008 : *Postdoctoral Fellow*,** The Hebrew University of Jerusalem, Institute of Chemistry, Edmund J. Safra Campus, Jerusalem, Israel. **Advisor: Prof. Dr. Itamar Willner**

**February 2006 – August 2006 : *Visiting Scientist (OYP Fellow)*,** Bochum Ruhr University, Faculty of Chemistry, Bochum, Germany. **Advisor: Prof. Dr. Wolfgang Schuhmann**

**June 2000 – April 2007: *Teaching Assistant*,** Middle East Technical University, Department of Chemistry, Ankara, Turkey.

**February 2000 – June 2000: Teaching Assistant**, Gazi University, Department of Chemistry, Ankara, Turkey

**September 1999- February 2000: English Language Teacher**, Aksehir Anatolian High School, Aksehir/Konya, Turkey

#### **4. RESEARCH INTERESTS**

- Synthesis, Characterization and Applications of Nanoparticles
- Solar Cell and Solar Energy
- Biological Photovoltaics
- Construction of Novel Biosensors
- Photoelectrochemistry
- Novel DNA Systems
- Electrochemistry
- Electropolymerization and Characterization of Conducting Polymers
- Enzyme Immobilization
- Enzyme Inhibition
- Electrochromic Devices

#### **5. AWARDS**

##### **5.1. 2014 FABED Eser Tümen Research Award**

([http://www.fabed.com/sonuclar.php?p=2014\\_arastirma](http://www.fabed.com/sonuclar.php?p=2014_arastirma))

**5.1. 2014: 3rd TET (Turkish Electro Technology) Research and Development Project Spring Award:** The Project entitled as “**Developing Dye Sensitized Solar Cells That Completely Split Water**”, was rewarded as 2nd prize in the category of “**Implementations for Energy Production Transmission and Distribution**” by Electrical Electronics and Services Exporter’s Association. (<http://www.tet.org.tr/en/news/creative-suggestions-were-rewarded-in-tet-research-development-project-spring>) .

**5.2. 2014: Project Incentive Award of Konya Technopark/Selçuk Technology Transfer Office**  
(<http://www.konyateknokent.com.tr/konya-teknokent-selcuk-tto-2013-yili-universite-sanayi-isbirligi-kapsamindaki-a--652h.htm>)

**5.4. 2012: Karamanoglu Mehmetbey University Scientific Research and Publication Award.**

**5.5. 2013: Karamanoglu Mehmetbey University Scientific Research and Publication Award.**

## **6. SCHOLARSHIPS**

**6.1. April 2013 – June 2013: Postdoctoral Fellowship** from **FEBS** (Federation of European Biochemical Societies) Chemistry Department of Lund University, Lund Sweden. **Advisor: Prof.Dr. Lo GORTON.**

**6.2. August 2011 – November 2011: Postdoctoral Fellowship,** from **DAAD** (Deutscher Akademischer Austausch Dienst- German Academic Exchange Service) Max-Planck Institute of Colloids and Interfaces, Potsdam Germany. **Advisor: Dr. Dmitry SHCHUKIN.**

**6.3. Januray 2010 – July 2010: Postdoctoral Fellowship** from **TUBITAK** (The Scientific and Technological Research Council of Turkey) , University of California at Berkeley, Department of Chemistry, Berkeley USA. **Advisor: Prof.Dr. Gabor SOMORJAI.**

**6.4. 2007 – 2008: Postdoctoral Fellowship** from **Prof. Dr. Itamar WILLNER**, The Hebrew University of Jerusalem, Institute of Chemistry, Department of Organic Chemistry, Jerusalem, Israel.

**6.5. 2002 – 2007: ÖYP Scholarship** (Academic Staff Training Programme). This programme has been supported by Academic Staff Training Program of State Planning Organization (ÖYP-DPT)

## **7. PATENTS**

**7.1. I. Willner, R. Tel-Vered, H.B. Yildiz, "PHOTOCHEMICAL ELECTRODE, CONSTRUCTION AND USES THEREOF", WIPO, WO 2009156999 A1 20091230.**

**7.2. I. Willner, R. Tel-Vered, H.B. Yildiz, "PHOTOCHEMICAL ELECTRODE, CONSTRUCTION AND USES THEREOF", United States Patent Office, US 2011094582 A1 20110428.**

**7.3. I. Willner, R. Tel-Vered, H.B. Yildiz, "PHOTOCHEMICAL ELECTRODE, CONSTRUCTION AND USES THEREOF", European Patent Office, EP 2311114 A1 20110420.**

**7.4. I. Willner, R. Tel-Vered, H.B. Yildiz, "PHOTOCHEMICAL ELECTRODE, CONSTRUCTION AND USES THEREOF", Australian Patent Office, AU 2009263731 (A1) 20091230.**

7.5. I. Willner, R. Tel-Vered, **H.B. Yildiz**, "PHOTOCHEMICAL ELECTRODE, CONSTRUCTION AND USES THEREOF", **Chinese Patent Office**, CN 102067351 (A) 20110518.

7.6. **H.B. Yildiz**, **O. Talaz**, "DYE SENSITIZED SOLAR CELLS FOR OVERALL WATER SPLITTING: THEIR CONSTRUCTION AND APPLICATION FOR HYDROGEN PRODUCTION", **Turkish Patent Institute**, Application No:2015/15510.

7.7. **H.B. Yildiz**, " THYLAKOID MEMBRANE BASED SOLAR CELLS FOR PESTICIDE ANALYSES IN WATER", **Turkish Patent Institute**, Application No:2016/06746.

## **8. PUBLICATIONS**

8.1. **H.B.Yildiz**, S.Kiralp, L.Toppare, F.Yilmaz, Y.Yagci, K.Ito, T.Senyo; "Conducting copolymers of 3-methyl methacrylate and *p*-vinylbenzyloxy poly(ethyleneoxide) and their electrochromic properties"; **Polymer Bulletin** 53 (2005) 193-201.

8.2. **H.B.Yildiz**, S.Kiralp, L.Toppare, Y. Yagci; "Immobilization of invertase in conducting polypyrrole/PMMA-co-PMTM graft copolymers"; **Journal of .Applied. Polymer Science** 96 (2005) 502-507.

8.3. **H.B.Yildiz**, S.Kiralp, L.Toppare, F.Yilmaz, Y. Yagci; "Immobilization of tyrosinase in polyethylene oxide electrodes and determination of phenolics in red wines"; **Rective and Functional Polymers** 63 (2005) 155-161.

8.4. **H.B. Yildiz**, S. Kiralp, L. Toppare, Y. Yagci; "Immobilization of Glucose Oxidase in Conducting Graft Copolymers and Determination of Glucose Amount in Orange Juices with Enzyme Electrodes"; **International Journal of Biological Macromolecules** 37 (2005) 174-178.

8.5. **H.B. Yildiz**, L. Toppare; "Biosensing Approach for Alcohol Determination Using Immobilized Alcohol Oxidase"; **Biosensors and Bioelectronics** 21 (2006) 2306-2310.

8.6. **H.B. Yildiz**, S. Kiralp, L. Toppare, Y. Yagci, K.Ito; "Synthesis of conducting copolymers of thiophene capped poly(ethylene oxide) with pyrrole and thiophene."; **Materials Chemistry and Physics**. 100 (2006) 124-127.

8.7. **H.B. Yildiz**, L. Toppare, Y. Hepuzer Gursel, Y. Yagci; "Immobilization of polyphenol oxidase in conducting graft copolymers and determination of phenolic amount in red wines with enzyme electrodes"; **Enzyme and Microbial Technolgy** 39 (2006) 945-948.

- 8.8. H.B. Yildiz**, E. Sahin, A. Cirpan, L. Toppare, Y.Yagci; "Characteristics of Dual Type Electrochromic Devices Based on Poly(ethylene oxide) Copolymers"; *Polymer International* 56 (2007) 674-678.
- 8.9. H.B. Yildiz**, J. Castillo, D. Guschin, L. Toppare, W. Schuhmann; "A phenol biosensor based on the electrochemically controlled integration of tyrosinase in a redox polymer"; *Microchimica Acta* 159 (2007) 27-34.
- 8.10. H.B. Yildiz**, E. Sahmetlioglu, A.E. Boyukbayram, L. Toppare, Y. Yagci; "Immobilization of Tyrosinase and Alcohol Oxidase in Conducting Copolymers of Thiophene Functionalized Poly(Vinyl Alcohol) with Pyrrole"; *International Journal of Biological Macromolecules* 41(2007) 332-337.
- 8.11. H.B. Yildiz**, N.Ertas, O.Y. Ataman; "Oxidation State Related Evaluation of Tellurium Determination by Flame Analysis"; *Fresenius Environmental Bulletin* 17 (2008) 911-914.
- 8.12. H.B. Yildiz**, R. Freeman, R. Gill, I. Willner; "Electrochemical, photoelectrochemical, and piezoelectric analysis of tyrosinase activity by functionalized nanoparticles"; *Analytical Chemistry* 80 (2008) 2811-2816.
- 8.13. H.B. Yildiz**, R. Tel-Vered, I. Willner; "CdS Nanoparticle/ $\beta$ -Cyclodextrin-Functionalized Electrodes for Enhanced Photoelectrochemistry"; *Angewandte Chemie Int. Ed.* 47 (2008) 6629-6633.
- 8.14.** R. Tel-Vered, O. Yehezkeli, **H.B. Yildiz**, O.I. Wilner, I. Willner; "Photoelectrochemistry with Ordered CdS Nanoparticle/Relay or Photosensitizer/Relay Dyads on DNA Scaffolds"; *Angewandte Chemie Int. Ed.* 47 (2008) 8272-8276.
- 8.15. H.B. Yildiz**, R. Tel-Vered, I. Willner; "Solar Cells with Enhanced Photocurrent Efficiencies Using Oligoaniline-Crosslinked Au/CdS Nanoparticles Arrays on Electrodes"; *Advanced Functional Materials* 18 (2008) 3497-3505.
- 8.16.** J. Elbaz, R. Tel-Vered, R. Freeman, **H.B. Yildiz**, I. Willner; "Switchable Motion of DNA on Solid Supports"; *Angewandte Chemie Int. Ed.* 48 (2009) 133-137.
- 8.17.** R. Tel-Vered, **H.B. Yildiz**, I. Willner; "Enhanced Photocurrents Generated by Supramolecular Relay/CdS-Nanoparticle/Electron-Donor Structures on Gold Electrodes"; *Advanced Materials* 21 (2009) 716–720.
- 8.18.** A. Calzolari, D. Varsano, A. Ruini, A. Catellani, R. Tel-Vered, **H.B. Yildiz**, O. Ovits, I. Willner; "Optoelectronic Properties of Natural Cyanin Dyes"; *Journal of Physical Chemistry A* 113 (2009) 8801-8810.

- 8.19. R. Tel-Vered, **H.B. Yildiz**, Y. Yan, I. Willner; "Plugging into Enzymes with Light: Photonic "Wiring" of Enzymes with Electrodes for Photo Biofuel Cells", *Small* 6 (2010) 1593-1597.
- 8.20. Y. Borodko, C.Thompson, **H.B. Yildiz**, G. Somorjai, "Spectroscopic Study of Platinum and Rhodium Dendrimer (PAMAM G4OH) Compounds: Structure and Stability", *Journal of Physical Chemistry C* 115 (2011) 4757-4767.
- 8.21. T. Aksoy, S. Erdemir, **H.B. Yildiz**, M. Yilmaz, "Novel Water-Soluble Calix[4,6]arene Appended Magnetic Nanoparticles for the Removal of the Carcinogenic Aromatic Amines", *Water, Air and Soil Pollution* 223 (2012) 4129-4139.
- 8.22. **H.B. Yildiz**, S. Caliskan, M. Kamaci, A. Caliskan, H. Yilmaz, "L-Dopa Synthesis Catalyzed by Tyrosinase Immobilized In Poly(ethyleneoxide) Conducting Polymers", *International Journal of Biological Macromolecules* 56 (2013) 34-40.
- 8.23. **H.B. Yildiz**, M. Kamaci, H. Azak, O. Secgin, O. Suer, "A Comparative Study: Immobilization of Yeast Cells and Invertase in Poly(ethyleneoxide) Electrodes", *Journal of Molecular Catalysis B-Enzymatic* 91 (2013) 52-58.
- 8.24. **H.B. Yildiz**, D. Odaci Demirkol, S.Sayin, M. Yilmaz, M. Kamaci, "New Amperometric Cholesterol Biosensors Using Poly(ethyleneoxide) Conducting Polymers", *Journal Macromolecular Science Part A - Pure and Applied Chemistry* 50 (2013) 1075-1084.
- 8.25. **H.B. Yildiz**, O. Talaz, M. Kamaci, A. Caliskan, S. Caliskan, "Novel Photoelectrochemical Biosensors for Cholesterol Biosensing by Photonic "Wiring" of Cholesterol Oxidase", *Journal Macromolecular Science Part A - Pure and Applied Chemistry* 50 (2013) 1182-1193.
- 8.26. M. Karaman, F. Sariipek, O. Koysuren, **H.B. Yildiz**, "Template Assisted Synthesis of Photocatalytic Titanium Dioxide Nanotubes by Hot Filament Chemical Vapor Deposition Method", *Applied Surface Science* 283 (2013) 993-998.
- 8.27. H. Azak, E. Guler, U. Can, D. Odaci Demirkol, **H.B. Yildiz**, O. Talaz, S. Timur, "Synthesis of Amine Functionalized Naphthalene Containing Conducting Polymer as a Matrix for Biomolecule Immobilization", *RSC Advances* 3 (2013) 19582-19590.
- 8.28. G. Sadi, D. Bozan, **H.B. Yildiz**, "Post-translational Modulation of Hydrogen Peroxidation Enzymes by Streptozotocin Induced Diabetes and Antioxidants", *FEBS Journal*, Special Issue (38th Congress of the Federation-of-European-Biochemical-Societies (FEBS) (2013) 300.

- 8.29** O. Koysuren, M. Karaman, **H.B. Yildiz**, H.N. Koysuren, H. Dinc, "Electrospun Polyvinyl borate/Poly(methyl methacrylate) (PVB/PMMA) Blend Nanofibers", *International Journal of Polymeric Materials and Polymeric Biomaterials*, 63 (2014) 337-341.
- 8.30.** **H.B. Yildiz**, M. Kamaci, M. Karaman, L. Toppare, S. Sayin, "Photoelectrochemical Biosensing Approach for Alcohol Determination by "Wiring" of Alcohol Oxidase Photonically with P(SNS-NH<sub>2</sub>)/AOx/CNT/[Ru(bpy)<sub>3</sub>]<sup>2+</sup> Modified Electrodes", *Journal Macromolecular Science Part A - Pure and Applied Chemistry*, 51 (2014) 385-393.
- 8.31.** Y. Udum, **H.B. Yildiz**, H. Azak, E. Sahin, O. Talaz, A. Cirpan, L. Toppare, "Synthesis and Spectroelectrochemistry of Dithieno[3,2-b:2',3'-d]pyrrole Derivatives", *Journal of Applied Polymer Science*, 131 (2014) Article Number: 40701.
- 8.32.** M. Ak, **H.B. Yildiz**, L. Toppare, "Enzyme Immobilization in a Photosensitive Conducting Polymer Bearing Azobenzene in the Main Chain", *Polymer Bulletin*, 71 (2014) 1827-1841.
- 8.33.** G. Sadi, D. Bozan, **H.B. Yildiz**, "Redox Regulation of Antioxidant Enzymes: Post-translational Modulation of Catalase and Glutathione Peroxidase Activity by Resveratrol in Diabetic Rat Liver", *Molecular and Cellular Biochemistry*, 393 (2014) 111-122.
- 8.34.** D. Odaci Demirkol, **H.B. Yildiz**, S. Sayin, M. Yilmaz, " Enzyme immobilization in biosensor constructions: Self-assembled Monolayers of Calixarenes Containing Thiols", *RSC Advances*, 4 (2014) 19900-19907.
- 8.35.** K. Hasan, **H.B. Yildiz**, E. Sperling, P. O'Conghaile, M.A. Packer, D. Leech, C. Hagerhall, L. Gorton, "Photo-electrochemical Communication Between Cyanobacteria (*Leptolyndbia* sp.) and Osmium Redox Polymer Modified Electrodes", *Physical Chemistry Chemical Physics*, 16 (2014) 24676-24680.
- 8.36.** B. Sonmez, S. Sayin, E.E. Yalcinkaya, D. Ag Selec, **H.B. Yildiz**, D. Odaci Demirkol, S. Timur, "Calixarene Modified Montmorillonite: A Novel Surface Design for Biosensing Applications", *RSC Advances*, 4 (2014) 62895-62902.
- 8.37.** T.C. Gokoglan, S. Soylemez, M. Kesik, H. Unay, S.Sayin, **H.B. Yildiz**, A. Cirpan, L. Toppare, "A novel architecture based on a conducting polymer and calixarene derivative: its synthesis and biosensor construction", *RSC Advances*, 5 (2015) 35940-35947.
- 8.38.** S. Sayin, H. Azak, **H.B. Yildiz**, P. Camurlu, G.U. Akkus, L. Toppare, M. Ersoz, "Calixarene assembly with enhanced photocurrents using P(SNS-NH<sub>2</sub>)/CdS nanoparticle structure modified Au electrode systems", *Physical Chemistry Chemical Physics*, 17 (2015) 19911-19918.



**8.39.** M. Dervisevic, E. Dervisevic, H. Azak, E. Cevik, M. Senel, **H.B. Yildiz**, “Novel amperometric xanthine biosensor based on xanthine oxidase immobilized on electrochemically polymerized 10-[4H-dithieno(3,2-b:2',3'-d)pyrrole-4-yl]decane-1-amine film”, *Sensors and Actuators B Chemical*, 226 (2016) 181-187.

**8.40.** H. Azak, F.B. Barlas, **H.B. Yildiz**, K. Gülec, B. Demir, D. Odaci Demirkol, S. Timur, “Folic acid modified conducting polymer: Electrochemical detection of the cell attachment”, *Macromolecular Bioscience*, 16 (2016) 545-552.

**8.41.** S. Akin, M. Gülen, S. Sayin, H. Azak, **H.B. Yildiz**, S. Sonmezoglu, “Modification of photoelectrode with thiol-functionalized Calix[4]arenes as interface energy barrier for high efficiency in dye-sensitized solar cells”, *Journal of Power Sources*, 307 (2016) 796-805.

**8.42.** H. Azak, S. Kurbanoglu, **H.B. Yildiz**, S.A. Ozkan, “Electrochemical glucose biosensing via new generation DTP type conducting polymers/gold nanoparticles/glucose oxidase modified electrodes”, *Journal of Electroanalytical Chemistry*, 770 (2016) 90–97.

**8.43.** **H.B. Yildiz**, B. Bezgin Carbas, S. Sonmezoglu, M. Karaman, L. Toppare, “A Photoelectrochemical Device for Water Splitting Using Oligoaniline-Crosslinked  $[\text{Ru}(\text{bpy})_2(\text{bpyCONHArNH}_2)]^{+2}$  Dye/ $\text{IrO}_2$  Nanoparticle Array on  $\text{TiO}_2$  Photonic Crystal Modified Electrode”, *International Journal of Hydrogen Energy*, 41 (2016) 14615-14629.

**8.44.** M. Menger, A. Yarman, J. Erdosy, H.B. Yildiz, R.E. Gyurcsanyi, F.W. Scheller, “MIPs and Aptamers for Recognition of Proteins in Biomimetic Sensing”, *Biosensors*, 6 (2016) 35.

**8.45.** S. Sayin, S. Eymur, **H.B. Yildiz**, “Synthesis of Various Calix[4]arene Derivatives with Mercaptoalkyl Chains and Their Application in Removing Cr(VI) from Aqueous Solution”, *Polycyclic Aromatic Compounds*, In Press, DOI:10.1080/10406638.2016.1169193.

## **NATIONAL & INTERNATIONAL CONFERENCE PRESENTATIONS**

### **9. NATIONAL CONFERENCE PRESENTATIONS**

**9.1.** **H.B. Yildiz**, N. Ertaş, O. Y. Ataman; “Yarikli Silika Tup Tuzak ve Alevli AAS Yardimiyla Tellur Tayini” **1<sup>st</sup> National Analytical Chemistry Congress**, July 3-5, 2002, BUTAL, Bursa, Turkey (Poster Presentation).

**9.2.** **H.B. Yildiz**, S. Kiralp, L. Toppare, Y. Yagci, T. Senyo, K. Ito; “3-Tiyofen Polietilenoksitin Tiyofenle ve Pirole Olusturdugu Kopolimerlerinin Sentez ve Karakterizasyonu”, **XVII National Chemistry Conference**, Istanbul, Turkey (Poster Presentation).

**9.3. H.B. Yildiz**, R. Freeman, R. Gill, I. Willner, "Electrochemical, photoelectrochemical, and piezoelectric analysis of tyrosinase activity by functionalized nanoparticles"; **NanoTR VII - 7th Nanoscience and Nanotechnology Conference of Turkey**, 28 June- 01 July 2011, Istanbul, Turkey (Oral Presentation).

**9.4. H.B. Yildiz**, J. Castillo, D.A. Guschin, L. Toppare, W. Schuhmann, " Phenol Biosensor Based On Electrochemically Controlled Integration Of Tyrosinase In a Redox Polymer", **XXV National Chemistry Conference** 27 June- 02 July 2011, Erzurum, Turkey (Oral Presentation).

**9.5. H.B. Yildiz**, Y. Aydin, M. Oztas, O. Secgin, L. Toppare, " Biosensing Approach For Alcohol Determination", **XXV National Chemistry Conference** 27 June- 02 July 2011, Erzurum, Turkey (Poster Presentation).

**9.6. H.B. Yildiz**, R. Tel-Vered, I. Willner, "CdS Nanoparticles/ $\beta$ -Cyclodextrin-Functionalized Electrodes for Enhanced Photoelectrochemistry"; **NanoTR VIII - 8th Nanoscience and Nanotechnology Conference of Turkey**, 25-29 June 2012, Ankara, Turkey (Oral Presentation).

**9.7. H.B. Yildiz**, "Özgün Fotoelektrokimyasal Biyosensörlerin Yapımı", **4<sup>th</sup> Physical Chemistry Congress**, 5-8 June 2014, Denizli, Turkey (Oral Presentation).

**9.8. E. Sevgili**, B. Mutlu, A. Kocabaş, G. Sadi, **H.B. Yildiz**, M.E. Martı, M. Karaman, "Hot Filament Chemical Vapor Deposition of Polymeric Tertiary Amine Containing Nanocoatings For Antibacterial Textile Applications", **NanoTR 10 – 10. Türkiye Nanobilim ve Nanoteknoloji Konferansı**, 17-21 Haziran 2014, İstanbul Türkiye.

**9.9. E. Sevgili**, B. Mutlu, İ. Savran, A. Kocabaş, G. Sadi, **H.B. Yildiz**, M.E. Martı, M. Karaman, "Kimyasal Buhar Biriktirme (HFCVD) Yöntemi ile Tersiyer Amin İçeren Antibakteriyel Nano Kaplamaların Sentezi, Tekstil Yüzeyinde Büyütülmesi ve Antibakteriyel Özelliklerinin İncelenmesi", **11. Ulusal Kimya Mühendisleri Kongresi**, 2-5 Eylül 2014, Eskişehir, Türkiye.

**9.10. S. Akın**, S. Sayın, M. Gülen, H. Azak, **H.B. Yildiz**, S. Sönmezoğlu, "Modification of Titanium Oxide Electrode With Thiol Functionalized Calixarenes Layer For High Performance of Dye-Sensitized Solar Cells", **SolarTR-3 "Third Turkish Solar Electricity Conference and Exhibition**, 27-29 Nisan 2015, Ankara, Türkiye.

**9.11. L. Gorton**, K. Hasan, D. Leech, C. Hägerhäll, S.C. Emek, P.A. Albertsson, H.E. Akerlund, Y. Dilgin, M.A. Packer, E. Sperling, P. ÓConghaile, **H.B. Yildiz**, "Electrochemical Communication between Bacterial Cells/Biological Membranes and Carbon Electrodes", **5. Fiziksel Kimya Kongresi**, 16-19 Mayıs 2015, Konya, Türkiye.

**9.12. H.B. Yildiz**, S.Sayın, N. Gazel, H.Azak, "Poli(etilenoksit) İletken Polimerlerin Yeni Amperometrik Kolesterol Biyosensörü Olarak Kullanılması", **5. Fiziksel Kimya Kongresi**, 16-19 Mayıs 2015, Konya, Türkiye.

**9.13. H.B. Yildiz**, M Kamacı, H. Azak, N. Gazel, "Maya Hücreleri ve İnvertaz Enziminin Poli(etilenoksit) Elektrotlarda Tutuklanması", **5. Fiziksel Kimya Kongresi**, 16-19 Mayıs 2015, Konya, Türkiye.

**9.14. H.B. Yildiz**, M. Karaman, S. Sayın, H. Azak, N. Gazel, "P(SNS-NH<sub>2</sub>)/AOx/CNT/[Ru(bpy)<sub>3</sub>]<sup>+2</sup> Yapısıyla Modifiye Edilmiş Elektrotlar Kullanılarak Fotoelektrokimyasal Alkol Biyosensörlerin Yapımı", **5. Fiziksel Kimya Kongresi**, 16-19 Mayıs 2015, Konya, Türkiye.

**9.15. B.Sönmez**, S. Sayın, E.E. Yalcinkayac, D. Ağ Seleci, **H.B. Yildiz**, D. Odaci Demirkol, S. Timur, "Kaliksaren Modifiye Montmorillonit: Biyosensör Uygulamaları İçin Yeni Bir Dizayn", **5. Fiziksel Kimya Kongresi**, 16-19 Mayıs 2015, Konya, Türkiye.

**9.16. D. Odaci Demirkol**, **H.B. Yildiz**, S. Sayın, H. Azak, N. Gazel, "Tiyol Fonksiyonlu Kaliksarenlerin Biyosensör Olarak Enzim İmmobilizasyonunda Kullanılması", **5. Fiziksel Kimya Kongresi**, 16-19 Mayıs 2015, Konya, Türkiye.

## **10. INTERNATIONAL CONFERENCE PRESENTATIONS**

**10.1. O. Y. Ataman**, N. Ertaş, D. Karadeniz, O. Ismail, **H.B. Yildiz**; "Novel Approaches for Sensitive and Economical AAS Techniques in Trace Analysis", **The Fifth International Symposium on Chemistry, Analytical Chemistry and the 21<sup>st</sup> Century**, January 22-27, 2000, Giza, Egypt (Oral Presentation).

**10.2. O. Y. Ataman**, D. Korkmaz, N. Ertaş, **H.B. Yildiz**; "On-line Silica Traps and Atomizers as Alternatives to ETAAS", Book of Abstracts, p.84, **1<sup>st</sup> Black Sea Basin Conference on Analytical Chemistry**, September 11-15, 2001, Odessa, Ukraine.

**10.3. H.B. Yildiz**, N. Ertaş, O. Y. Ataman; "Determination of Tellurium by Slotted Silica Tube Trap and Flame AAS" **3<sup>rd</sup> Aegean Analytical Chemistry Days**, September 29- October 3, 2002, Polihnitos, Lesvos, Greece (Poster Presentation).

**10.4. H.B. Yildiz**, S. Kiralp, L. Toppare, Y. Yagci, K.Ito; "Synthesis of conducting copolymers of thiophene capped poly(ethylene oxide) with pyrrole and thiophene", **The International Conference on Synthetic Metals (ICSM)**, Wollongong, New South Wales, Australia 28 June to 2 July 2004 (Poster Presentation).

**10.5. H.B. Yildiz**, S.Kiralp, L. Toppare, Y. Yagci; "Immobilization of Invertase in Conducting Polypyrrole/ PMMA-Co-PMTM Graft Copolymers", **Advanced Polymers via Macromolecular Engineering 6 (APME 6)**, 15-19 August 2005, Istanbul, Turkey (Poster Presentation).

**10.6. E. Sahmetlioglu, H.B. Yildiz**; A.E. Boyukbayram, L. Toppare, Y.Yagci, " Immobilization of Tyrosinase and Alcohol Oxidase in Conducting Copolymers of Thiophene Functionalized Poly(Vinyl Alcohol) with Pyrrole", **11<sup>th</sup> International Materials Symposium (Materials 2006)**, 19-21 April 2006, Denizli, Turkey (Oral Presentation).

**10.7. M. Ak, H.B. Yildiz**, L. Toppare; "Synthesis and Characterization of Conducting Copolymer of Bis(4-(3-Thienyl Ethylene)-Oxycarbonyl)Diazobenzene with Pyrrole and Its Application in Enzyme Immobilization", **11<sup>th</sup> International Materials Symposium (Materials 2006)**, 19-21 April 2006, Denizli, Turkey (Oral Presentation).

**10.8. H.B.Yildiz**, S.Kiralp, L.Toppare, F.Yilmaz, Y.Yağcı; "Immobilization of tyrosinase in polyethylene oxide electrodes and determination of phenolics in red wines", **International Conference on Science and Technology of Synthetic Metals 2006 (ICSM 06)**, 2-7 July 2006, Dublin, Ireland (Poster Presentation).

**10.9. H.B. Yildiz**, R. Freeman, R. Gill, I. Willner, "Electrochemical, photoelectrochemical, and piezoelectric analysis of tyrosinase activity by functionalized nanoparticles"; **The Hebrew University of Jerusalem Nanoscience and Nanotechnology Center Conference**, 29-30 April 2008, Zichron Yaacov, Israel (Poster Presentation).

**10.10. R. Tel-Vered, O. Yehezkeli, H.B. Yildiz**, O.I. Wilner, I. Willner; "Click-ON" Ordering of CdS Nanoparticle- or Photosensitizer-Relay Dyads on DNA Scaffolds for Photoelectrochemistry"; **The Hebrew University of Jerusalem Nanoscience and Nanotechnology Center Conference**, 29-30 April 2008, Zichron Yaacov, Israel (Poster Presentation).

**10.11. H.B. Yildiz**, L. Toppare, Y. Gursel, Y. Yagci; "Immobilization Of Polyphenol Oxidase In Conducting Graft Copolymers And Determination Of Phenolic Amount In Red Wines With Enzyme Electrodes"; **International Conference For Academic Disciplines of International Journal of Arts and Sciences**, 11-15 April 2011, Gottenheim, Germany (Oral Presentation).

**10.12. H.B. Yildiz**, L. Toppare; "Alcohol Biosensor Based On Immobilization Of Alcohol Oxidase In Polyethylene Oxide Type Conducting Polymers", **International Conference For Academic Disciplines of International Journal of Arts and Sciences**, 01-04 April 2012, Vienna, Austria (Oral Presentation) (Oral Presentation).

**10.13. H.B.Yildiz**, J. Castillo, D.A. Guschin, L. Toppare, W. Schuhmann; "Entrapment Of Tyrosinase In A Redox Polymer", **25th The International Symposium on Polymer Analysis and**

**Characterization (ISPAC 2012)**, 11-13 June 2012, Rolduc Abbey, The Netherlands (Oral Presentation).

**10.14. H.B. Yildiz**, O. Talaz, "Solar Cells with Overall Water Splitting Using Oligoaniline-Crosslinked [Ru(bpy)<sub>2</sub>(bpyCONHArNH<sub>2</sub>)]<sup>+2</sup> Dye/Iridium Oxide Nanoparticle Arrays On Three-Dimensionally Ordered Macroporous Gold-Nanoparticle Doped Titanium Dioxide (3-DMGN-TiO<sub>2</sub>) Photonic Crystals Modified Electrodes"; **COST Redox General Meeting: Initial Workshop of the CMST COST Action CM-1104**, 26-28 September 2012, Prague, Czech Republic (Oral Presentation).

**10.15.** O. Talaz, **H.B. Yildiz**, "Synthesis of Aniline Functionalized Ruthenium Dyes for Using Visible Light Water Splitting with Solar Cell"; **COST Redox General Meeting: Initial Workshop of the CMST COST Action CM-1104**, 26-28 September 2012, Prague, Czech Republic (Poster Presentation).

**10.16.** U. Can, H. Azak, **H.B. Yildiz**, O. Talaz, "The Synthesis of New Generation Amino Compounds of Dithionepyrrole", **UIPAC World Chemistry Congress**, 11-16 August 2013, Istanbul, Turkey (Poster Presentation).

**10.17. H.B. Yildiz**, "New Amperometric Cholesterol Biosensors Using Poly(ethyleneoxide) Conducting Polymers", **10<sup>th</sup> International Electrochemistry Meeting**, 4-8 September 2013, Konya, Turkey (Oral Presentation).

**10.18. H.B. Yildiz**, "Photonic "Wiring" of Enzymes With Electrodes For Photobiofuel Cells", **10<sup>th</sup> International Electrochemistry Meeting**, 4-8 September 2013, Konya, Turkey (Oral Presentation).

**10.19.** H. Azak, E. Guler, U. Can, D. Odaci Demirkol, **H.B. Yildiz**, O. Talaz, S. Timur, "Synthesis of Amine Functionalized Naphthalene Containing Conducting Polymer as a Matrix for Biomolecule Immobilization", **10<sup>th</sup> International Electrochemistry Meeting**, 4-8 September 2013, Konya, Turkey (Poster Presentation).

**10.20.** M. Selecı, D. Ag, L. Eral Dogan, S. Ozcelik, **H.B. Yildiz**, D. Odaci Demirkol, S. Timur, "Preparation and Application of Aptamer-modified Water Soluble Quantum Dots for Detection of Pathogens", **The 6<sup>th</sup> International Workshop On Surface Modification For Chemical and Biochemical Sensing**, 8-12 November 2013, Warsaw, Poland (Poster Presentation).

**10.21.** K. Hasan, **H.B. Yildiz**, E. Sperling, M.A. Packer, D. Leech, C. Hagerhall, L.Gorton, "Photo-Electrochemical Communication Between Cyanobacteria and Osmium Redox Polymer Modified Electrodes", **224<sup>th</sup> ECS (The Electrochemical Society) Meeting**, 27 Ekim-1 Kasım 2013, San Fransisco, CA, USA (Poster Sunum).

**10.22.** O.Talaz, **H.B. Yildiz**, "Synthesis of Polymerizable Benzene Containing Ruthenium Dyes For Using Visible Light Water Splitting With Solar Cell", **POLYCHAR 22 World Forum on Advanced Materials**, 7-11 April 2014 Stellenbosch, Republic of South Africa (Poster Presentation).

**10.23.** K. Hasan, **H.B. Yildiz**, E. Sperling, M.A. Packer, D. Leech, C. Hägerhäll, L. Gorton, "Photo-electrochemical Communication Between Cyanobacteria and Osmium Redox Polymer Modified Electrodes", **15<sup>th</sup> International Conference on Electroanalysis (ESEAC 2104)**, 11-15 June 2014, Malmö, Sweden (Oral Presentation).

**10.24.** D.Odaci Demirkol, **H.B. Yildiz**, S. Timur, "Photoelectrochemical *E.Coli* O157:H7 Detection Based On Semiconducting Nanoparticles", **9<sup>th</sup> Aegean Analytical Chemistry Days, AACD 2014**, 29 September – 3 October 2014, Chios, Greece (Poster Presentation).

**10.25.** L. Gorton, K. Hasan, D. Leech, C. Hagerhall, S.C. Emek, P.A. Albertsson, H.E. Akerlund, Y. Dilgin, M.A. Packer, E. Sperling, P. O'Conghaile, **H.B. Yildiz**, "Electrochemical Communication Between Bacterial Cells/Biological Membranes and Carbon Electrodes", **16<sup>th</sup> Topical Meeting Of The International Society of Electrochemistry: Electrochemical Properties and Applications Of Advanced Carbon Materials**, 22-26 March 2015, Angra dos Reis, Brazil (Oral Presentation).

**10.26.** K. Hasan, H-E. Akerlund, P-A. Albertsson, O. Aleksejeva, E. Cevik, S.C. Emek, V. Essmann, K. Gorecki, L. Gorton, V. Grippo, C. Hagerhall, H. Hamidi, D. Leech, M.A. Packer, K.V.R. Reddy, W. Schuhmann, E. Sperling, **H.B. Yildiz**, "Photo-electrochemical Wiring of Various Photosynthetic Cells/ Membranes to Electrodes to Harness Solar Energy", **BES 2015: XXIII International Symposium on Bioelectrochemistry and Bioenergetics**, 14-18 June 2015, Malmo, Sweden (Oral Presentation).

**10.27.** **H.B. Yildiz**, S. Sayin, D. Odaci Demirkol, "Enzyme Immobilization in Biosensor Constructions: Self-Assembled Monolayers of Calixarenes Containing Thiols", **BES 2015: XXIII International Symposium on Bioelectrochemistry and Bioenergetics**, 14-18 June 2015, Malmo, Sweden (Poster Presentation).

**10.28.** **H.B. Yildiz**, H. Azak, M. Kamaci, "A Comparative Study: Immobilization of Yeast Cells and Invertasein Poly(ethyleneoxide) Electrodes", **BES 2015: XXIII International Symposium on Bioelectrochemistry and Bioenergetics**, 14-18 June 2015, Malmo, Sweden (Poster Presentation).

**10.29.** H. Azak, **H.B. Yildiz**, S. Sayin, M. Kamaci, "New Amperometric Cholesterol Biosensors Using Poly(ethyleneoxide) Conducting Polymers", **Euroanalysis XVIII: The European Conference on Analytical Chemistry**, 6-10 September 2015, Bordeaux, France (Poster Presentation).

**10.30.** H. Azak, **H.B. Yildiz**, S. Caliskan, M. Kamaci, A. Caliskan, "L-Dopa Synthesis Catalyzed By Tyrosinase Immobilized In Poly (Ethyleneoxide) Conducting Polymers", **Euroanalysis XVIII: The**

**European Conference on Analytical Chemistry**, 6-10 September 2015, Bordeaux, France (Poster Presentation).

**10.31.** S. Kurbanoglu, H. Azak, **H.B. Yildiz**, S.A. Ozkan, "Electrochemical Glucose Biosensing Via New Generation DTP Type Conducting Polymers/Gold Nanoparticles/Glucose Oxidase Modified Electrodes", **International Conference: 10th Aegean Analytical Chemistry Days**, 29 September-2 October 2016, Canakkale, Turkey (Poster Presentation).

**10.32.** H. Azak, H.B. Yildiz, D.O. Demirkol, S. Timur, "Conducting Polymer Of 10-(4H-dithieno[3,2-b:2',3'-d]pyrrol-4-yl)decan-1-amine] As An Immobilization Matrix For Microbial Biosensing Based On Gluconobacter Oxydans", **International Conference: 10th Aegean Analytical Chemistry Days**, 29 September-2 October 2016, Canakkale, Turkey (Poster Presentation).

## **11. PROJECT GRANTS**

**11.1. TUBITAK (The Scientific and Technological Research Council of Turkey) - 1001 Project:** Project Number: 109T439; "Enhanced Photocurrents Generated by Conducting Polymer/CdS Semiconductor Nanoparticles/Supramolecular Relay/Electron Donor Structures Associated with Gold Electrodes", 15/11/2009 – 15/05/2012 (**Director of the Project**).

**11.2. TUBITAK (The Scientific and Technological Research Council of Turkey) – 1001 Project:** Project Number: 109T881; "Fabrication of White Light Emmiting Polymer Hybrid LEDs Based on Inorganic Nanoparticles", 01/05/2010 – 01/05/2012 (**Researcher of the Project**).

**11.3. Karamanoglu Mehmetbey University – BAP (Comission of Scientific Research Projects) Project:** Project Number: 09-M-11; "A New Biosensing Approach: Covalently Immobilization of Electropolymerizable Glucose Oxidase on Conducting Polymer of 4-(2,5-di(thiophen-2-yl)-1H-pyrrole-1-yl)benzenamine and Determination of Glucose Amount in Apple Juices Produced in Karaman City With This Novel Enzyme Biosensor", 01/03/2011 – 01/03/2012 (**Director of the Project**).

**11.4. TUBITAK (The Scientific and Technological Research Council of Turkey) – 1001 Project:** Project Number: 111T135; "The synthesis of New Generation Bis and Amino Compounds of Dithionepyrrole: The Usage of These Substances As Nanotechnological Biosensor", 01/11/2011 – 01/11/2013 (**Researcher of the Project**).

**11.5. TUBITAK (The Scientific and Technological Research Council of Turkey) – 1001 Project:** Project Number: 112T552; "Semiconductor Nanoparticles Modified Electrodes in Bioanalysis Based on Photocurrent Measurements", 01-11-2012-01.11.2014 (**Researcher of the Project**).

**11.6. TUBITAK (The Scientific and Technological Research Council of Turkey) – COST ACTION CM1104 Project:** Project Number: 112T622; "Solar Cells with Overall Water Splitting Using

Oligoaniline-Crosslinked  $[\text{Ru}(\text{bpy})_2(\text{bpyCONHArNH}_2)]^{+2}$  Dye/Iridium Oxide Nanoparticle Arrays On Three-Dimensionally Ordered Macroporous Gold-Nanoparticle Doped Titanium Dioxide (3-DMGN-TiO<sub>2</sub>) Photonic Crystals Modified Electrodes”, 01-09-2012-01.09.2014 ( **Director of the Project and Management Committee Member on behalf of Turkey in EU-COST ACTION CM-1104**).

**11.7. TUBITAK (The Scientific and Technological Research Council of Turkey) – COST ACTION CM1202 Project:** Project Number: 113T022; “Novel Photoelectrochemical Cells with Overall Water Splitting Using Polymeric Bridged Calix[n]arene/Cyanin Dye/IrO<sub>2</sub> Nanoparticle Arrays On Gold Electrodes”, 15-07-2013-15.07.2015 (**Director of the Project and Management Committee Member on behalf of Turkey in EU-COST ACTION CM-1202**).

**11.8. TUBITAK (The Scientific and Technological Research Council of Turkey) – 1001 Project:** Project Number: 213M399; “Synthesis, Characterization and Kinetic Analysis of Polymeric Nano-Coatings deposited by Initiated Plasma Enhanced Chemical Vapor Deposition”, 01-03-2014-01.03.2016 (**Researcher of the Project**).

**11.9. Karamanoglu Mehmetbey University – BAP (Comission of Scientific Research Projects) Project:** Projec Number: 02-D-13; “Syntheses, Characterizations and Biosensor Applications of DTP Type Conducing Polymers”, 01/03/2013 – 01/03/2015 (**Director of the Project**).

**11.10. TUBITAK (The Scientific and Technological Research Council of Turkey) – Individual Young Enterprise Project:** Project Number: 215064; “SolarPest: Thylakoid Based Solar Cells Which Can Be Used As Pesticide Sensors”, 01-07-2016-31.07.2017 (**Director of the Project**).

## **12. SUPERVIZED THESES**

### **12.1. MSc Theses**

**12.1.1.** AYDIN, Y. “Glucose Biosensors By Using Enzme Immobilization In Conducting Polymers”, Karamanoglu Mehmetbey University, Graduate School of Natural and Applied Sciences, 2012.

**12.1.2.** SEÇGİN, Ö. “Immobilization Of Yeast Cells And Invertase Enzyme In Poly(Ethyleneoxide) Electrodes”, Karamanoglu Mehmetbey University, Graduate School of Natural and Applied Sciences, 2013.

**12.1.3.** GAZEL, N. “Construction Of Novel Cholesterol Biosensor Using Dithienopyrrole Type Conducting Polymers”, Selcuk University, Graduate School of Natural and Applied Sciences, 2016.

### **12.2. Ph.D. Theses**



**12.2.1.** AZAK, H. "Synthesis And Characterization Of Dithienopyrrole Type Conducting Polymers And Biosensor Application of These Polymers", Karamanoglu Mehmetbey University, Graduate School of Natural and Applied Sciences, 2015.

### **13. ORGANIZED CONGRESSES**

**13.1. The 5<sup>th</sup> Physical Chemistry Congress:** The 5th Physical Chemistry Congress was held in Konya on 16-19 May 2015 in collaboration with KTO Karatay University and Necmettin Erbakan University. The Conference covered contributions from experimental and theoretical physical chemistry research areas ([www.fizikselkimya2015.com](http://www.fizikselkimya2015.com)). The presidents of the congress were Assoc.Prof.Dr. Huseyin Bekir YILDIZ from KTO Karatay University and Assoc.Prof.Dr. Haluk BINGOL from Necmettin Erbakan University.

### **14. MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS**

**14.1.** American Chemical Society (ACS) (Membership No: 30693377)

**14.2.** International Society of Electrochemistry (ISE) (Membership No: 12847)

**14.3.** The Electrochemical Society (ECS) (Membership No: 359388)

**14.4.** The Bioelectrochemical Society (BES) (Membership No: 20605)

**14.5.** Turkish Chemical Society (TKD) (Membership No: 2294)

**14.6.** Polymer Science and Technology Society (Membership No: 150)

**14.7.** Turkish Biochemical Society (TBD) (Membership No: 1459)

**14.8.** Middle East Technical University Alumni Society (Membership No: 13856)