

PROFESSIONAL EDUCATION

Max Planck Institute Polymer Research and Johannes Gutenberg University, Mainz, Germany

Ph.D. in Chemistry Feb 2009

Thesis: "Fluorescent Ionene-Dye Nanoparticles by Electrostatic Self Assembly"

Middle East Technical University, Ankara, Turkey

M.Sc. in Polymer Chemistry Jun 2005

Thesis: "Immobilization of Glucose Isomerase onto poly Hydroxy-methylmethacrylate Particles"

Middle East Technical University, Ankara, Turkey

B.Sc. in Chemistry Jun 2003

PROFESSIONAL EXPERIENCE

Izmir Institute of Technology, Department of Chemistry, Urla, Turkey

Assoc. Prof. present

Stanford University, Department of Radiology, Stanford, California, US

Visiting Research Scientist Jun 2014-April2015

- Developing Hepatocellular Carcinoma associated miRNA detection platforms.
- Optimization of Paper based Infectious disease screening platforms for HBV
- Nanoplasmonic platform development for circulating cancer cells

Center for Biomimetic Sensor Science, Nanyang Technological University, Singapore

Research Fellow 2010-2013

- Investigating new conjugated polymer based luminescent reporters for real time activity determination of proteins.
- Design and fabrication of polymer based new sensing platforms for naked eye detection of lung cancer associated miRNA.
- Exploring new methodologies for sensing in vesicular confinement to monitor enzyme behavior at cellular and organelle level.
- Design and fabrication of self assembled monolayer (SAM) based array type sensing platform.
- Developing bio-inspired engineering materials.

Friedrich Alexander University, Department of Chemistry, Erlangen, Germany

Research Fellow 2009-2010

Max Planck Institute Polymer Research, Mainz, Germany

Ph.D. Researcher 2005-2009

Advisors: Prof. Gerhard Wegner & Prof. Franziska Groehn

- Synthesis and characterization of ionene & polythiophene based polyelectrolytes. Investigation of colloidal behaviors of Pyrene-ionene nanoparticles by confocal microscopy, AFM, light and neutron scattering techniques.

Umit Hakan Yildiz

- Developing alternative methodologies for DNA labeling. DNA-Perylene complexes.
- Investigation of polyelectrolyte brushes-multivalent cation association.

Middle East Technical University, Ankara, Turkey

Researcher

2005

Advisor: Prof. Levent Toppare

- Synthesis and characterization of Thiophene functionalized monomers and conducting polymers. Fabricating of polymer (polythiophene and derivatives) based electrochromic devices.

Middle East Technical University, Ankara, Turkey

M. Sc. Researcher

2003-2005

Advisor: Prof. Nesrin Hasirci

- M.Sc. in Polymer Chemistry; "Immobilization of Glucose Isomerase onto poly Hydroxy-methylmethacrylate Particles"

TEACHING EXPERIENCE

İzmir Institute of Technology, İzmir, Turkey

Courses given: General Chemistry-CHEM101, CHEM102, Polymer Chemistry CHEM493, Biosensors BENG-535

Bioelectrochemistry CHEM-539, Biophotonics PHOT-450

Center for Biomimetic Sensor Science, Nanyang Technological University, Singapore

Research Fellow

2010-Present

- Co-Supervisor of PhD thesis entitled "Ternary sensing surface with DNA based spacer group: Optimization, Characterization and Application" (Yang Yanli),
- Co Supervisor of project entitled "Investigation of the Peptide-Ganglioside Binding in Biomimicking Lipid Membranes using imaging SPR and Fluorescent Microscopy" (Natalie Haustein)
- Supervised graduate and undergraduate students under "Nanyang Technological University Summer Research Internship" program.

Max Planck Institute Polymer Research and Johannes Gutenberg University, Mainz, Germany

Ph.D. Researcher

2008-2009

- Supervised M.Sc. students, designed experiments and taught scattering techniques for polymers.

Johannes Gutenberg University, Mainz, Germany

Ph.D. Researcher

- Tutored lab section of Organic Chemistry Laboratory, tutored students.

Spring/Fall 2008

PUBLICATIONS

Wearable Sensors

-Fabrication of polymer nanofiber-conducting polymer fabric and noncontact motion sensing platform
MU Mutlu, O Akin, MM Demir, ÜH Yildiz Materials Science Forum 915, 207-212

-Polymer nanofiber-carbon nanotube network generating circuits
MU Mutlu, O Akin, ÜH Yildiz, Organic Photonic Materials and Devices XX 10529, 105290R

-Hand-held volatile analyzer based on elastically deformable nanofibers
M Yucel, O Akin, M Cayoren, I Akduman, A Palaniappan, B Liedberg, UH Yildiz, Analytical chemistry 90 (8), 5122-5129

Point-of-Care Diagnostic Tools

-Pixelated colorimetric nucleic acid assay
HB Aydın, JA Cheema, G Ammanath, C Toklucu, M Yucel, S Özenler, ... ÜH Yildi, Talanta 209, 120581

-A BODIPY-Based Fluorescent Probe to Visually Detect Phosgene: Toward the Development of a Handheld Phosgene Detector

Umit Hakan Yildiz

M Sayar, E Karakuş, T Güner, B Yildiz, UH Yildiz, M Emrulloğlu Chemistry–A European Journal 24 (13), 3136-3140.

-Onur Tokel, Umit Hakan Yildiz, Fatih Inci, Naside Gozde Durmus, Okan Oner Ekiz, Burak Turker, Can Cetin, Shruthi Rao, Kaushik Sridhar, Nalini Natarajan, Hadi Shafiee, Aykutlu Dana, Utkan Demirci Scientific Reports ·March 2015 DOI: 10.1038/srep09152

-U. Hakan Yildiz, Fatih Inci, ShuQi Wang, Mehlika Toy, H. Cumhuri Tekin, Asad Javaid, Daryl T.-Y. Lau, Utkan Demirci Biotechnology Advances 33(1) · November 2014 DOI: 10.1016/j.biotechadv.2014.11.003

- Luminescent device for the detection of oxidative stress biomarkers in artificial urine
G Ammanath, UH Yildiz, A Palaniappan, B Liedberg ACS applied materials & interfaces 10 (9), 7730-7736

-Smart phone assisted detection and quantification of cyanide in drinking water by paper based sensing platform
A İncel, O Akın, A Çağır, ÜH Yıldız, MM Demir Sensors and Actuators B: Chemical 252, 886-893

-Tailoring conformation-induced chromism of polythiophene copolymers for nucleic acid assay at resource limited settings
D Rajwar, G Ammanath, JA Cheema, A Palaniappan, UH Yildiz, ... ACS applied materials & interfaces 8 (13), 8349-8357

Smart Polymer Materials

-Yanli Yang, Umit Hakan Yildiz, Jaime Peh, Bo Liedberg Colloids and surfaces B: Biointerfaces 125 November 2014· (DOI: 10.1016/j.colsurfb.2014.10.058)

- Umit Hakan Yildiz, Hans-Peter M. De Hoog, Zhikang Fu, Nikodem Tomczak, Atul Parikh, Madhavan Nallani, Bo Liedberg, 2013, Small (DOI: 10.1002/smll.201300060)

-Yer Peng Tan, Umit Hakan Yildiz, Wei Wei, J. Herbert Waite and Ali Miserez 2013, Biomacromolecules, (DOI: 10.1021/bm400448w)

-Umit Hakan Yildiz, Al. Palaniappan, Bo Liedberg 2013, Analytical Chemistry, 85, 2, 820-824. (Highlighted in ACS, Chemical and Engineering News)

-Umit Hakan Yildiz, Chia Wei Sheng, Diyar Mailepessov, Diana Chia Xueqi, Susana Geifman Shochat, Bo Liedberg 2012, Analytical & Bioanalytical Chemistry, 404, 8, 2369-2375.

-Ahu Arslan Yildiz, Umit Hakan Yildiz, Bo Liedberg, Eva Sinner 2012, *Colloids and Surfaces B: Biointerfaces*, 103C:510-516.

-Palaniappan Al., Goh W. H., Umit Hakan Yildiz, et al. 2012, *Sensors and Actuators B-Chemical*, 161, 1, 689-696.

-Ruthard Christian, Maskos Michael, Umit Hakan Yildiz, et al. 2011, *Macromolecular Rapid Communications*, 32, 6, 523-527.

-Umit Hakan Yildiz, Koynov Kaloian, Groehn Franziska, 2009, *Macromolecular Chemistry and Physics*, 210, 20, 1678-1690.

-Li Yi, Umit Hakan Yildiz, Muellen Klaus, et al. 2009, *Biomacromolecules*, 10, 3, 530-540.

-Umit Hakan Yildiz, Sahin E; Akhmedov I.M. et al. 2006, *Journal of Polymer Science Part A-Polymer Chemistry*, 44, 7, 2215-2225.

PRESENTATIONS

Umit Hakan Yildiz

Oral Presentations

- Conjugated polyelectrolytes as luminescent biosensors: Synthesis, characterization and applications. Umit Hakan Yildiz, Istanbul Technical University March, 21, 2013, Istanbul, Turkey.
- Vesicle Encapsulated Conjugated Polymers: Nanosized ATP sensor; Umit Hakan Yildiz, Biosensors Conference 2012, May 15-18, 2012, Mexico.
- Real Time Activity Determination of ATPase by Water Soluble Polythiophene based Fluorescent Reporter Umit Hakan Yildiz, International Conference on Materials and Advanced Technologies (ICMAT), June 2011, Singapore.
- Water Soluble Polythiophene-DNA Complexes Umit Hakan Yildiz, 236th ACS National Meeting, PMSE Division, August 17-21, 2008, Philadelphia, PA, US.

AWARDS, ACHIEVEMENTS AND QUALIFICATIONS

- 2007-2008 International Max Planck Research School Fellowship for Polymer Materials Science (IMPRS-PRS).
- 2006-2007 Marie Curie Host Fellowship for Early Stage Researchers Training "Analytical methods in the development of technology of polymers".

Reviewer Assignments

Biosensors Bioelectronics (Elsevier)

Physical Chemistry-B (American Chemical Society)

Macromolecular Chemistry and Physics (Wiley)

LANGUAGES

English (fluent), German (intermediate), Turkish (native)