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### **CAREER SUMMARY**

**Assistant Professor**, Department of Energy Engineering, Ankara University, 2/2015 (official date of start)-Today  
Courses taught: Introduction to Energy Engineering, Material and Energy Balances, Characterization of Materials, Energy and Environment, Engineering Lab I.

**Postdoctoral fellow**, Department of Chemistry, Imperial College London, 10/2013-6/2014

“Conversion of lignin from biomass to aromatic compounds via ionic liquids”.

**Tutor**, Department of Chemistry, Imperial College London, 10/2013-6/2014

Course tutored: Physical Chemistry course including Chemical Equilibria and Spectroscopy (Fall Term), Quantum Chemistry and Chemical Kinetics (Spring Term), States of Matter (Summer Term).

**Teaching Assistant**, Department of Chemical Engineering, Middle East Technical University, 2/2008 –12/2012, Courses assisted: Advanced Chemical Reaction Engineering, Chemical Engineering Laboratory III, Heat and Mass Transfer Operations, Chemical Reaction Engineering, Thermodynamics II, Thermodynamics I, Chemical Process Calculations.

**TUBITAK (The Scientific and Technological Research Council of Turkey) Research Assistant**, Department of Chemical Engineering, Middle East Technical University, 2/2005-2/2007.

### **EDUCATION**

**Middle East Technical University, Department of Chemical Engineering**

**Ph.D.**, 2/2008–2/2013

“Pretreatment of cotton stalks with ionic liquids for enhanced enzymatic hydrolysis of cellulose and ethanol production”

**Middle East Technical University, Department of Chemical Engineering**

**M.Sc.**, 9/2004 –6/2007

“Investigation of bioprocess parameters for glucose isomerase production by *Bacillus thermoantarcticus*”

**Hacettepe University, Department of Chemical Engineering**

**B.Sc.**,9/2000 –6/2004

“Microencapsulation of Mixed Enzyme Preparates in Detergent Products”

**TED Ankara College Foundation Private High School**

1993–2000

### **PUBLICATIONS**

**Peer-reviewed journal articles**

1. **Semerçi I.**, Guler F. 2018. Protic ionic liquids capable of pretreating cotton stalks at high biomass loading. **Industrial Crops and Products**. *Under review*.
2. **Semerçi I.**, 2017. Integrating a statistical approach to optimize the pretreatment conditions for the deconstruction of cotton stalks with a protic ionic liquid. **International Scientific Publications - Agriculture&Food**. 5, 609-621.
3. **Semerçi I.**, 2017. The superiority of gamma-valerolactone (GVL) as a novel pretreatment agent to enhance the enzymatic digestibility of cotton stalks. **International Scientific Publications - Agriculture&Food**. 5, 598-608.
4. **Haykir N.I.**, Bakir U.,2013. Ionic liquid pretreatment allows utilization of high substrate loadings in enzymatic hydrolysis of biomass to produce ethanol from cotton stalks. **Industrial Crops and Products**. 51, 408-414.
5. **Haykir,N.I.**,Bahcegul, E.,Bicak,N.,Bakir, U.,2012.Pretreatment of cotton stalk with ionic liquids including 2-hydroxyethyl ammonium formate to enhance biomass digestibility. **Industrial Crops and Products**. 41, 430-436.
6. Bahcegul, E.,Apaydin,S., **Haykir,N.I.**,Tatli E.,Bakir, U.,2012. Different ionic liquids favor different lignocellulosic biomass particle sizes during pretreatment to function efficiently. **Green Chemistry**.14,1896-1903.

- Bahcegul, E., Tatli, E., **Haykir, N.I.**, Apaydin, S., Bakir, U., 2011. Selecting the right blood glucose monitor for the determination of glucose during the enzymatic hydrolysis of corncob pretreated with different methods. **Bioresource Technology**. 102, 9646-9652.
- Çalik, P., Angardi, V., **Haykir, N.I.**, Boyaci, I.H., 2009. Glucose isomerase production on a xylan-based medium by *Bacillus thermoantarcticus*. **Biochemical Engineering Journal**. 43, 8-15.

#### **Book chapters**

- Gurbuz E.I. and **Haykir N.I.**, 2017. Chapter 10-Recent Developments in Biorefinery Catalysis, Advances in Refining Catalysis, CRC Press (**Taylor & Francis Group**).

#### **Presented at international conferences (most recent presentations)**

- Haykir, N.I.** and Bölükbaşı U., "Ionic liquids as effective solvents for the production of biomass derived energy and chemicals", ECO-BIO 2016, Rotterdam, Netherlands, 2016.
- Haykir, N.I.** and Bölükbaşı U., "Efficient conversion of cotton stalks to cellulosic ethanol through ionic liquid pretreatment and enhanced enzymatic hydrolysis", 21st European Biomass Conference and Exhibition, Copenhagen, 2013.
- Haykir, N.I.**, Bahcegul, E., Bicak, N., Bakir, U., "Ionic liquid facilitated approach to cellulosic ethanol production: Improved biomass digestibility through ionic liquid pretreatment for ethanol production from cotton stalk", New Biotechnology, **Oral presentation** in the 15th European Congress on Biotechnology, Istanbul, 29, S9, 2012.

#### **PROJECTS**

- Conversion of Lignocellulosic Biomass into High Value Added Products by Protic Ionic Liquids, TUBITAK National **Young Researchers Career Development Program Grant, €42,000, 2017-TODAY** (National Project) – As the principal investigator
- METU BAP Project, BAP 03 04 2012 009, 2012 (National Project) – As a researcher
- METU BAP Project, BAP 03 04 2011 009, 2011 (National Project) – As a researcher
- Recombinant Enzyme Production via Metabolic+Genetic+Biochemical Reaction Engineering Principles, TUBITAK, 2005 - 2007 (National) – As a scholarship student

#### **AWARDS, SCHOLARSHIPS and MEMBERSHIPS**

- American Chemical Society (ACS) Membership, 11/2016-Today.
- ACS GCCE (Global Chemists' Code of Ethics) Fellowship for the workshop held in Nairobi, Kenya, 5/2017.
- TUBITAK 2219 International Postdoctoral Research Fellowship Program, 10/2013-6/2014.
- TUBITAK Encouragement Award for Scientific Publications, 2011, 2012, 2013.
- The Best Project Award in the Hacettepe University, Faculty of Engineering Project Fair collaborating with Ministry of Science, Industry and Technology, Republic of Turkey, 2004.

#### **LANGUAGES**

Turkish (mother tongue), English (Fluent-IELTS: 7) German (Basic knowledge-Goethe-Zertifikats B1: Zertifikat Deutsch).

#### **RESEARCH, ANALYTICAL AND COMPUTER SKILLS**

Ionic liquid (IL) synthesis, fractionation of lignocellulose with ILs, biomass pretreatment, compositional analysis, characterization of biomass components, bioreactors, enzymatic processes, statistical tools for process parameter optimization, computational tools in chemistry.

HPLC, IR, XRD, NMR, TGA, GPC, GC-MS, SEM, UV-Vis .

MATCAD, Origin, Matlab, ChemDraw, Chem3D, MOPAC.

#### **REFERENCES**

##### **Prof. Tom Welton**

Department of Chemistry, Imperial College London, South Kensington Campus, London, SW7 2AZ, UK  
Tel: +44(0)20 7594 5763, Email: t.welton@imperial.ac.uk

##### **Prof. Zeki Aktas**

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