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CAREER SUMMARY

Assistant Professor, Department of Energy Engineering, Ankara University, 2/2015-Today

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

Teaching Assistant, Department of Chemical Engineering, Middle East Technical University, 2/2008 –12/2012,

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, Turkey

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, Turkey

M.Sc., 9/2004 –6/2007

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

Hacettepe University, Department of Chemical Engineering, Turkey

B.Sc.,9/2000 –6/2004

PEER-REVIEWED JOURNAL ARTICLES

1. **Semerci I**, Evaluation of biomass-derived solvents and protic ionic liquids as lignin-selective pretreatment agents for poplar fractionation, **Journal of Wood Chemistry and Technology**, 42, 2, 91-103.
2. Yildiz E, Gokce Y, **Semerci N.I**, Yagmur E., Aktas Z, The use of ionic liquids in supercapacitors as electrolytes over a wide temperature range (-40 °C and +80 °C), **Under review in the Journal of Energy Storage**.
3. **Semerci I**, Unal B, Simsek N, Ozcan S.E., Valorization of paper mill sludge using protic ionic liquids and deep eutectic solvents as a potential feedstock for biorefineries, **Under review in the Journal of Wood Chemistry and Technology**.
4. **Semerci I**, Assessment of Biogas and Syngas Potential of Cotton Stalks in Turkey, **Cukurova University Journal of the Faculty of Engineering**, 2022, 37(1).
5. **Semerci I**, Soysal K, Yaglikci S, Gokce Y. Assessing the effect of protic ionic liquid pretreatment of Pinus radiata from different perspectives including solvent-water ratio, **Journal of Wood Chemistry and Technology**, 2021, 41(6), 236-248.
6. **Semerci I**, Guler, F. Levulinic acid production from wood with green solvents, **Journal of Wood Chemistry and Technology** 2021;41.
7. **Semerci I**, Ersan G. Hornbeam pretreatment with protic ionic liquids: Cation, particle size, biomass loading and recycling effects. **Ind Crops Prod** 2021;159.

8. Yagmur E, Gokce Y, Tekin S, **Semerci NI**, Aktas Z. Characteristics and comparison of activated carbons prepared from oleaster (*elaegnus angustifolia* L.) fruit using KOH and ZnCl₂. **Fuel** 2020;267.
9. **Semerci I**, Güler F, Ersan G, Soysal K, Ozturk O, Altinisik H, Tirpan S, Ozcelik F. Assessment of a protic ionic liquid with respect to fractionation and changes in the structural features of hardwood and softwood. **Bioresour Technol Rep** 2019;8.
10. **Semerci I**, Güler F. Pretreatment of crop wastes from edible biomass with a protic ionic liquid. **Int J Renew Energy Res** 2019;9(1):17-23.
11. **Semerci I**, Güler F. Protic ionic liquids as effective agents for pretreatment of cotton stalks at high biomass loading. **Ind Crops Prod** 2018;125:588-95.
12. Gurbuz EI, **Semerci NI**. Recent developments in biorefinery catalysis. In: **Advances in refining catalysis.** ; 2017. p 329-374. **Book chapter in Taylor and Francis.**
13. **Haykir NI**, Bakir U. Ionic liquid pretreatment allows utilization of high substrate loadings in enzymatic hydrolysis of biomass to produce ethanol from cotton stalks. **Ind Crops Prod** 2013;51:408-14.
14. **Haykir NI**, Bahcegul E, Bicak N, Bakir U. Pretreatment of cotton stalk with ionic liquids including 2-hydroxy ethyl ammonium formate to enhance biomass digestibility. **Ind Crops Prod** 2013;41(1):430-6.
15. Bahcegul E, Apaydin S, **Haykir NI**, Tatli E, Bakir U. Different ionic liquids favor different lignocellulosic biomass particle sizes during pretreatment to function efficiently. **Green Chem** 2012;14(7):1896-903.
16. Bahcegul E, Tatli E, **Haykir NI**, Apaydin S, Bakir U. Selecting the right blood glucose monitor for the determination of glucose during the enzymatic hydrolysis of corncob pretreated with different methods. **Bioresour Technol** 2011;102(20):9646-52.
17. Çalik P, Angardi V, **Haykir NI**, Boyaci IH. Glucose isomerase production on a xylan-based medium by bacillus thermoantarcticus. **Biochem Eng J** 2009;43(1):8-15.

PROJECTS

1. Valorization cellulose from baby diapers using ionic liquids, 2022-today, **in collaboration with PROCTER&GAMBLE (P&G) TURKEY- Principal Investigator.**
2. Utilization of protic ionic liquid fractionated biomass components in electrode material production and supercapacitor applications, 2022-today, **TUBITAK 2531 Bilateral Cooperation Program Application with German Academic Exchange Service (DAAD) - Principal Investigator.**
3. Cellulose recovery from process sludge generated during sanitary paper production via green solvents, 2021-today, **TUBITAK National New Ideas And New Products Research Funding Program – Principal Investigator**, in collaboration with Eczacibasi Consumer Products.
4. Conversion of Lignocellulosic Biomass into High Value-Added Products by Protic Ionic Liquids, 2017-2020, **TUBITAK National Young Researchers Career Development Program – Principal Investigator.**
5. Recombinant Enzyme Production via Metabolic+Genetic+Biochemical Reaction Engineering Principles, TUBITAK, 2005 - 2007 (National) – **Scholar.**

THESIS SUPERVISED

Gulsah Ersan, Evaluation of the potential of low-cost ionic liquids for the pretreatment of hardwood, hornbeam, 2018-2020, M.Sc. supervision.

AWARDS, SCHOLARSHIPS and MEMBERSHIPS

1. Managing Committee Member of the COST ACTION; CA 20127 - Waste biorefinery technologies for accelerating sustainable energy processes, 2021-2025.
2. American Chemical Society GCCE (Global Chemists' Code of Ethics) Fellowship for the workshop held in Nairobi, Kenya, 5/2017.
3. TUBITAK 2219 International Postdoctoral Research Fellowship Program, 10/2013-6/2014.
4. American Chemical Society (ACS) Membership, 11/2016-Today.

LANGUAGES

English (Fluent-IELTS: 7)

German (Basic knowledge-Goethe-Zertifikats B1: Zertifikat Deutsch)

Turkish (mother tongue)