SERPIL GURAN

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EDUCATION

1988 – 1993	Ph.D. The University of Leeds Department of Fuel and Energy Leeds, LS29JT, United Kingdom Title of Thesis: "Effect of Process Conditions on the Yields of Pyrolysis of Waste and Biomass" Advisor: Prof. Paul T. Williams
1986 – 1988	M.Sc. Chemical Engineering, Anadolu University, Eskisehir, Turkey Dissertation Title: "Pyrolysis of Euphorbia Rigida as a Renewable Energy Source" Advisor: Prof. Ersan Putun
1976 – 1980	B.S.E. Chemical Engineering, Anadolu University, Eskisehir, Turkey Advisor: Prof. Mustafa Alpbaz

PROFESSIONAL EXPERIENCE

2011 – Present	Director EcoComplex "Clean Energy Innovation Center" Rutgers, the State University of New Jersey Bordentown, New Jersey
1998 – 2011	Research Scientist Office of Sustainability and Green Energy New Jersey Department of Environmental Protection Trenton, New Jersey
1995 – 1998	Postdoctoral Research Associate Department of Mechanical and Aerospace Engineering Princeton University Princeton, New Jersey Advisor: Prof. Frederick Dryer
1993 – 1995	Postdoctoral Research Associate National Renewable Energy Laboratory (NREL) Field Test Laboratory Building Golden, Colorado Team Leaders: Prof. Foster A. Agblevor, Dr. Esteban Chornet,
May – Aug.1993	Assistant Professor Department of Chemical Engineering Anadolu University, Eskisehir, Turkey

1988-1993	Teaching Assistant Fuel and Energy Department, The University of Leeds, UK
1985-1988	Teaching Assistant Chemical Engineering Department Anadolu University, Eskisehir, Turkey
1980-1985	Chemical Engineer Turkish Ministry of Technology and Industry, Eskisehir Branch.

RESEARCH INTERESTS

Combining experimental and theoretical techniques to elucidate the role of sustainable biomass and waste in achieving a low-carbon energy economy. Research on sustainable biomass-to-energy technologies for clean power generation, development of low-carbon transportation fuels and manufacture of bio-based materials are an integral part of mitigating adverse effects of climate change and achieving energy security, sustainable development, and resiliency. Life Cycle Analysis (LCA) of bio-power, bio-heat, biofuels and bio-based materials to gain insight about their carbon footprint. Further, coupling innovative biomass conversion technologies with suitable biomass resources will provide for the efficient use of biomass. This approach is used to develop new materials to produce renewable and alternative low-carbon fuels and chemicals from a variety of renewable carbon resources. In addition, interdependencies the "Energy-Water-Food Nexus" concept components and in combining these components to achieve more efficient renewable energy and food manufacturing while conserving water resources.

AWARDS

- Institute of Energy, U.K., Redland Minerals Award for the best paper published in the Journal of the Institute of Energy, titled, "Pyrolysis of Automotive Tire Waste", London, U.K., March 1996.

- Scholarship for the Gordon Conference on "Analytical Pyrolysis and Oxidative Degradation of Materials", Plymouth State College, June 13-18, 1993.

- Institute of Energy, U.K., Steetley Magnesia Award for the best paper published in The Journal of the Institute of Energy, December 1992, London, U.K., March 1993.

- Institute of Energy, U.K., Foxwell Memorial Award for ranking as the best research student of the University of Leeds, Department of Fuel and Energy, London, U.K., March 1992.

SERPIL GURAN

INTELLECTUAL PROPERTY

PATENT: "Preparation of Brightness Stabilization Agent for Lignin-Containing Pulp from Biomass Pyrolysis Oils", Patent No: US 6,193,837 B1. Date of Patent: February 27, 2001.

INVENTION DISCLOSURE: "The Formation of Biomass Based Pyrolysis Oil to Cofeed to a Petroleum Refinery Fluid Catalytic Cracking Unit", 1994.

PUBLICATIONS

1. **Guran, S.,** "Thermochemical Conversion of Biomass" in "Practices and Perspectives in Sustainable Bioenergy: A Systems Thinking" ed. Madhumi Mitra, Springer, (Book Chapter, in review)
2. **Guran, S**., Agblevor, F.A., Brenan-Tonetta, M., "Biofuels, Bio-Power, and Bio-Products from Sustainable Biomass: Coupling Energy Crops and Waste with Clean Energy Technologies" Wiley Biotechnology Series, (*Book Chapter, in press*).
3. Brennan-Tonetta, M., **Guran, S**., Specca, D., 2014, "Feedstock Opportunities for Bioenergy Production: Assessment of Biomass Energy Potential in New Jersey" *Industrial Biotechnology*. December 2014, 10(6): 404-412. doi:10.1089/ind.2014.0023.
4. Brennan-Tonetta, M., **Guran, S**., and Specca, D., 2014, "Assessment of Biomass Energy Potential in New Jersey, 2.0." New Jersey Agricultural Experiment Station Publication No. 2014-1. Rutgers, the State University of New Jersey, New Brunswick, NJ.
5. Agblevor, F.A. **Besler-Guran S**., "Fractional Pyrolysis of Biomass for High-Valued Products", *Fuel Chemistry Division Preprints*, 47(1), 374, 2002.
6. Agblevor, F.A. **Besler-Guran S**., "Inorganic Compounds in Biomass Feedstocks. 1. Effect on the Quality of Fast Pyrolysis Oils, "*Energy and Fuels*", Vol. 10, 293-298, 1996.
7. Williams, P.T., **Besler-Guran, S**., Taylor, D.T., Botrill, R.P., "Pyrolysis of Automotive Tire Waste", *Journal of Institute of Energy*, Vol.68, No.474, 11-21, 1995.
8. Williams, P.T., **Besler-Guran, S**., "Pyrolysis-Thermogravimetric Analysis of Tires and Tire Components", *Fuel*, Vol. 74, No. 9, 1277-1283, 1995.
9. Agblevor, F.A**. Besler-Guran S**., and Wiselogel, A.E., "Fast Pyrolysis of Store Biomass Feedstocks", *Energy and Fuels*, Vol. 9, 635-640, 1995.
10. Williams, P.T., and **Besler, S.,** "Polycyclic Aromatic Hydrocarbon in Waste Derived Pyrolytic Oils", *Journal of Analytical and Applied Pyrolysis*, Vol. 30, 17-33, 1994.
11. Williams, P.T. and **Besler, S**., "The Pyrolysis of Rice Husks in Thermogravimetric Analyzer and Static Batch Reactor", *Fuel*, Vol. 72, No. 2, 1993.
12. Williams, P.T. and **Besler, S.,** "The Pyrolysis of Municipal Solid Waste", *Journal of the Institute of Energy*, Vol. LXV, No. 465, 192-200, 1992.
13. **Besler, S**., Kockar, O.M., Putun, A.E., Gercel, H.F., Putun, E., "Effect of Drying on Yields and Calorific Values of Bio-crudes from Euphorbia Rigida and Euphorbia Macroclada", *Turkish Journal for Chemistry*, Vol. 16, No. 3, 216-223, 1992.
14. Williams, P.T., and **Besler, S.**, "The Pyrolysis of Scrap Automotive Tires", *Fuel*, Vol. 69, 1474-1482, 1990.

15. Putun, E., **Besler, S.,** Putun, A.E., Ekinci, E., "Hydrocarbon Production in Arid Lands", *Chimica Acta Turcica*, Vol. 17, 1989.

PROCEEDINGS

1. Brennan-Tonetta, M., **Guran, S.,** Specca, D., Cowan, B., Sipos, C., Melillo, J., "Assessment of Biomass Energy Potential in New Jersey: A model for Evaluating Opportunities for Bioenergy Production and Informing Public Policy", International Consortium on Applied Bioeconomy Research Conference, Ravello, Italy, July 26-29,2016.
2. **Guran, S.,** "Biofuels and Bioenergy from Sustainable Biomass", BIOENERGY 2013, Nanjing, China, April, 25-27, 2013.
3. McKenna, D., Bhatia, K, Hesketh, R., Rowen, C., Marchese, A., Chipko, G., **Guran S.,** "Evaluation of Emissions and Performance of Diesel Locomotives with B20 Biodiesel Blends: Static Test Results" proceedings of the 2008 Rail Transportation Division Fall Technical Conference, Chicago, Illinois, September 24-25, 2008.
4. Agblevor, F.A. **Besler-Guran S**., Montane D., and Wiselogel, A.E., "Biomass Feedstock Variability and its Effect on Bio-crude Oil Properties, presented at "Developments in Thermochemical Biomass Conversion", Banf, Canada, May 20-24, 1996.
5. Agblevor, F.A. **Besler-Guran S**., and Wiselogel, A.E., "Plant Variability and Bio-oil Properties", in proceedings, Second Biomass Conference of the Americas: Energy, Environment, Agriculture, and Industry, Golden, Colorado, 1099-1109, 1995.
6. **Besler-Guran S**., Agblevor, F.A., and Scahill, J.W., "The Effects of Char Removal on the Alkali Metal Content of Bio-crude Oil", Frontiers of Pyrolysis Conference, Brenckenridge, Colorado, June 25-30, 1995.
7. **Besler-Guran S**., Agblevor, F.A., and Scahill, J.W., "Production of Oxygenated Fuels from Biomass: Impact of Feedstock Storage", presented at AIChE Annual Meeting, San Francisco, California, November 1994.
8. **Besler-Guran S.**, Agblevor, F.A., and Evans, R.J., "Inorganic Compounds in Biomass Feedstocks: Their Role in Char Formation and Effects on the Quality of Fast Pyrolysis Oils". Biomass Pyrolysis Oil Combustion Workshop, Estes Park, Colorado, 26-30, September 1994.
9. **Besler S.,** Agblevor, F.A., Davis M.F., Eddy, F.P., Johnson, D.K., and Wiselogoel, A.E., "Fluidized Bed Pyrolysis of Terrestrial Biomass Feedstocks. Bioenergy '94, Sixth National Bioenergy Conference, Reno/Sparks, Nevada, October 2-6, 43-50, 1994.
10. **Besler-Guran S**., Agblevor, F.A., and Scahill, J.W., "Production of Oxygenated Fuels from Biomass: Impact of Feedstock Storage", presented at AIChE Annual Meeting, San Francisco, California, November 1994.
11. **Besler, S.,** Taylor, D.T., Williams, P.T., Allen, R., Bevan, H.D., Jervis, A., and McKenzie, K.A., "The Fuel Properties of Pyrolytic Oil Derived from the Batch Pyrolysis of Tire Waste", Institute Mechanical Engineering Conference, "Waste, Handling, Processing, and Recycling", London, U.K., April 27, 1993.
12. Williams, P.T. and **Besler, S.,** "Thermogravimetric Analysis of the Compounds of Biomass", Advances in Thermochemical Biomass Conversion Conference, Interlaken, Switzerland (A.V. Bridgewater (ed.), May 11-15, 1992.

13. Williams, P.T., and **Besler, S.,** "The Pyrolysis of Rice Husks and the Influence of Temperature and Heating Rate on Product Composition", 6th European Conference on Biomass, Athens, Greece, March 17,1991.
14. Putun, E., **Besler, S**., Putun, A.E., and Uyar, T.S., "Euphorbia Species as a Renewable Energy Source," International Mediterranean New and Renewable Energy Congress, Antalya, Turkey, November 14-19, 1988.

EXTERNAL FUNDING

Pending:

USDA- NESUN Grant
"Food and Dairy Waste as Viable Feedstocks for Bioenergy and Bioproducts"
March 2016, $300,000 PI

USDA

"Sustainable Packaging Technology for Enhancing Safety and Quality of Specialty Crop"
1/1/2017–8/30/19 $3,000,000 Collaborator
Total Award Amount:

USDA
Consortium for Advanced Bioeconomy Leaders and Educators (CABLE)
1/1/2017–12/31/2020 $2,500 Collaborator

Funded:
USEDA
"Rutgers EcoIgnite: Clean Energy Proof of Concept Center & Accelerator Program"
11/1/2016-10/31/2019 $439,000 PI

USEPA
"Achieving a Greener &Safer Food Supply Chain in the Newark, NJ Region: Realizing Pollution Prevention, Energy Efficiency and Water Conservation Benefits through Sustainability & Resiliency Training"
September 2015-August 2017 $321,566 PI

USDA
"Creating Opportunities for Rural Development and Job Creation by Co-Digesting Dairy and Food Waste on Farm Business Opportunity Assessment"
August 2015-August 2016 $19,000 PI
Landfill Methane Outreach Program

USEPA
"Turkey's Landfill Inventory and Methane Emissions Assessment"
August 2012-September 2014 $100,000 PI

NJBPU

ARRA Funding for Electric Vehicle and Charger Demonstration
April 2012 $114,000 PI

NJBPU
"New Jersey Clean Energy Resource Network NJCERN"
2010-Ongoing $250,000 Collaborator

Not- Funded:

NSF-INFEWS
INFEWS/T4b: Citizen Education and Research FEWS Center - CERFEWS
9/1/2016–8/31/2019 $995,302 Collaborator

NSF-INFEWS/T3: Resource Recovery and Reuse (R3). A Sustainable Foundation for Societies of the Future
9/1/2016–8/31/2019 $1,000,000 Collaborator

USEPA
Pollution Prevention Capacity Building and Knowledge Transfer from New Jersey to Puerto Rico: Realizing Pollution Prevention in Food and Hospitality Sector through Sustainability and Resiliency Training"
1/9/2016-8/31/2018 $541,606 PI

NESARE
"Co-Digesting Farm Waste and Food Waste on Farm: Promoting Sustainable Farming and Reducing Greenhouse Gas Emissions"
June, 2015- Preproposal $177,428 PI

Environmental Research and Education Foundation
"New Approaches for Landfill and Waste Management Practices: An Environmental and Economic Analysis of Source Separated Organic Waste-to-Clean Energy Systems Co-located at Landfills"
January, 2015 $183,704 PI

National Clean Energy Incubator Program
U.S .Department of Energy, EERE
"Rutgers EcoComplex: Bringing Waste-Based Clean Energy Innovations to Market"
March, 2014 $658,133 PI

US Economic Development Administration
Investing in Manufacturing Communities Partnership Program
Accelerating Advanced Food Manufacturing Partnerships in the New Jersey Region
October 2013-March 2014 $177,762 Collaborator

North East Sun grant
Bio-based Chemicals for the Pharmaceutical, Food and Personal Care Industries in the New Jersey Region"
August 2014 $123,227 Collaborator

USAID
"Securing Water for Food in Turkey"
August 2014 $500,000 PI

NJDEP, Solid Waste Management Program
"Study of Composition of New Jersey's Municipal Waste Stream"
August 2013 $250,000 Collaborator

USDOE
"Combined Heat and Power Technical Assistance Partnerships"
March 2013 $379,027 Collaborator

USDOE
"Scale-up and integration of an aeroponic attached growth algal cultivation system generating high yields of biofuel feedstock"
March 2013 $627,474 Collaborator

SELECTED INVITED PRESENTATIONS

1. **Guran, S.,** "Business Incubation and Bioeconomy: Case of Anaerobic Digestion of Organic Waste, "The Bio-economy: Technology and Policy Path Forward" Conference, Rutgers University, New Brunswick, NJ, September 30-October1, 2016.
1. **Guran, S.,** "Promoting & Supporting Clean Energy Technology Innovation", "PEW, NJTC, New Jersey Clean Energy Business Workshop", the EcoComplex, Bordentown NJ, March 6, 2015.
2. **Guran, S.,** "Capacity Building for Sustainable Development: Assessment of Biomass Energy Potential "A methodology for municipalities"", IRENA 5th Session of the Assembly-Thematic Events, IRENA Bioenergy Programme-5, Abu Dhabi, U.A.E., January 16, 2015.
3. **Guran, S.,** "Energy from Waste, Research & Demo at the Rutgers EcoComplex "Clean Energy Innovation Center"", Renewable Energy from Waste "REW" Conference, San Jose, CA. November 17-20, 2014.
4. **Guran, S.,** "Systems Thinking for Efficient Development of Alternative Energy Technologies", SPER.2013, Sustainable Perspectives Symposium, Columbia University, March 30, 2013.
5. **Guran, S.**, "Sustainable Biomass to Clean Energy Pathways: Alternative Energy Innovation Centers", ICCI, 18th Int. Energy and Environment Fair & Conference, Istanbul, Turkey April 25-27, 2012.
6. **Guran, S.,** "Solving the Landfill Gas Cleanup Problem", 4th IWES "Waste Technologies Symposium and Exhibition", Istanbul, Turkey, November 14-15, 2012.

TEACHING

11:373:202:90 **Spring 2013- 2017** Sustainability Decision Tools (co-developed course)

11:776:112:01 **Spring 2015 -2017** Introduction to Bioenergy Technologies (developed course)

Proposed "**Master of Engineering Degree in Energy Systems Program"**, Invited Faculty (will develop a course when the program is finalized)

ADVISING INTERNS

Undergraduate Students

Christiana Dalton	(2017- Summer Intern)
Mete Eser	(2017- Summer Intern)
Catherine O'Connor	(2017- Summer Intern)
Emil Attardo	(2016-Summer Intern)
Langley Oudemans	(2016- Summer Intern)
Nicole Zougheib	(2016-Summer Inter)
Julia Burmistrova	(2015- Summer Intern)
Alessandra Looman	(2015- Summer Intern)
Kevin Marceski	(2015- Summer Intern)
Alec Roth	(2014- Summer Intern)
Selen Altiok	(2014- Summer Intern)
Boni Chang	(2014- Summer Intern)
Ian MacCloud	(2014- Summer Intern)
Austin Kaiser	(2013- Summer Intern)
Chris Sipos	(Intern, 2011)
Brett Cowen	(Intern2012, 2013)

UNIVERSITY SERVICE

2015- Present	Rutgers Energy Institute Annual Energy Contests reviewer.
2011- Present	Member, Rutgers Energy Institute
2011- Present	Member, SEBS Sustainable Energy Work Group
2015- Present	Chair, SEBS Sustainable Energy Work Group

PROFESSIONAL SERVICE

Member	New Jersey Clean Energy Innovation Council
Member	New Jersey Renewable Natural Gas Work Group
Member	New Jersey Biofuels Work Group
State Representative	North East Biomass Partnership

Journal Reviewer
Energies: www.mdpi.com/journal/energies

Professional Memberships
American Institute of Chemical Engineers
New Jersey Association of Energy Engineers
Institute of Energy, London, UK.