Hassan Khodaei Jalalabadi
Department of Biosystems Engineering
Auburn University
Auburn, AL 36849-5417
+1 (334) 332-5626
Hkj0008@auburn.edu

EDUCATION

- Ph.D., Mechanical Engineering, Energy Conversion, (Biomass thermal conversion and combustion) **2016**
  - Edith Cowan University, School of Engineering, Perth, WA, Australia
- M.Sc., Mechanical Engineering: Energy Systems Engineering **2008**
  - K.N. Toosi University of Technology, Tehran, Iran
- B.Sc., Mechanical Engineering (Thermal & Fluids) **2001**
  - Shahid Bahonar University of Kerman, Iran

PROFESSIONAL EXPERIENCE

Assistant Research Professor, **Jan2024-Current**

Department of Biosystems Engineering, Auburn University, AL

Adjunct Researcher at University of Alberta, Lead Scientist **2021-2023**

Department of Renewable Engineering

Lead Biomass and Biofuel Engineer **2019-2022**

All West Bio-Industrial Park

IRSI/University of Alberta (Post Doctoral Fellow) **2018-2019**

Department of Chemical and Material Engineering

Researcher, ECU Thermo-Fluids Research Group, WA, Australia **2012– Dec 2016**

Department of Mechanical Engineering

Researcher, Texas A&M University, Energy System Laboratory, USA **2008-2009**

Department Mechanical Engineering

Iranian Petroleum Institute (Azmoon Gostaran Energy) **2005-2008**

Kabire-Kerman Co **2003-2005**

Academic Awards

- **Mitacs Accelerate Program, Canada (PI/PD)**, 48000CD **2019-2020**

- **Teaching**
  - Supervise E.I.T engineer and publish several Elsevier articles in collaboration with the biomass research groups.
  - Heat transfer course (Teaching and tutoring)
  - Thermodynamic course (Teaching and tutoring)
  - Renewable Energy Course (Teaching)
  - CFD (Ansys/Fluent Software): Teaching

SKILLS, CERTIFICATE, TRAINING, AND DEVELOPMENT,

- **Software**

  - Ansys-Fluent, Mesh, CFX, Geom, SOLIDWORKS, MS-Office, Photoshop, Visio, STAR, Aspen Plus, EndNote, Pyris, C++,
- **Training Course/Certificates**
  - **Professional Engineering in Canada** (APEGA-Alberta: 239133)
  - ASME B31.3,3,16.5 Standard (20 hours)
  - P.D.M.S Software (30 hours)
  - Stress analysis with Caesar software (25 hours)
  - Wood mosaic art certification and exhibition

PUBLICATIONS

1- **Khodaei H**, Álvarez-Bermúdez C, Chapela S, Olson C, MacKenzie D, Gomez M, Porteiro J Eulerian CFD Simulation of Biomass Thermal Conversion in an Indirect Slow Pyrolysis Rotary Kiln Unit to Produce Biochar from Waste Wood Recycled from Construction and Demolition (C&D), **ENERGY**, Volume 288, 1 February 2024

2- **Khodaei, H**., Patino, D., Rico, J., Jin, Q., Olson, C., Boateng, AA, Multi-objective utilization of wood waste recycled from construction and demolition (C&D) and characterization of the products, **Waste Management**, Volume 149, 15 July 2022, Pages 228-238

3- **Khodaei, H**., Gonzalez, L., Chapela, S., Porteiro, J., Nikrityuk, P., Olson,C.,CFD-based coupled multiphase modeling of biochar production using a large-scale pyrolysis plant, **ENERGY**, Volume 217, 15 February 2021, 119325;

4- **Khodaei, H**., Olson, C., Nikrityuk, P., Numerical investigations of the impact of inflow conditions on characteristics of a large-scale pyrolysis unit, **ENERGY** Volume 169, 15 February 2019, Pages 1101-1111,

5- **Khodaei, H**., Olson, C., Nikrityuk, P., CFD based analysis of premixed and non-premixed co-injection of biomass volatile matters and air in an industrial indirect pyrolysis plant. **The Canadian Journal of Chemical Engineering**, Volume99, Issue5, May 2021**, Pages 1186-1198**

6- **Khodaei, H**., Yeoh, G., Guzzomi, F., Porteiro, J., A CFD-based comparative analysis of drying in various single biomass particles, **Applied Thermal Engineering** Volume 128, 5 January 2018, Pages 1062-1073

7- **Khodaei, H**., Guzzomi, F, Patiño, D, Rashidian, B. and Yeoh, G.H., Air staging strategies in biomass combustion-gaseous and particulate emission reduction potentials, **Fuel Processing Technologies**, 157 (2017) 29-41.

8- **Khodaei, H**., Guzzomi, F, Yeoh ,GH, Regueiro A, and Patiño D, An experimental study into the effect of air staging “distribution and position” on emissions in a laboratory scale biomass combustor. **ENERGY** 118 (2017): 1243-1255.

9- **Khodaei, H**., Al-Abdeli YA, Guzzomi F and Yeoh GH., An overview of processes and considerations in the modeling of fixed-bed biomass combustion. **ENERGY, 2015. 88:** p. 946-972.

10- Jafari Nasr M, Amidpour M, **KHodaei** J, An optimization approach to refinery steam management with consideration of CO_2 emission **Journal of Petroleum Science and Technology** 2014, 4(1), 73-84.

11- Taheri-Seresht, **Khodaei H**, B.Rashidian B, Retrofit of of Tehran City Gate Station (C.G.S.No.2) by Using Turbo expander , **ASME**, ISBN: 978-0-7918-4935-4 Chicago, USA,

Conferences Papers

12- **Khodaei H**, Amidpour M, Optimization of steam network in Tehran oil refinery with the new Scenarios, 30th **Industrial Energy Technology Conference (IETC)**, Energy System Laboratory (ESL), Texas A&M University, Department of Natural Resource, New Orleans, USA.

13- **Khodaei H**, Amidpour, M. Khoshgoftar Manesh, M. CO_2 reduction through optimization of steam network in the petroleum refineries: evaluation of new sceneries, 30th **Industrial Energy Technology Conference (IETC)**, US Department of Energy and Texas A&M University, Department of Natural Resource, New Orleans, USA
14- Arghandeh, R, Amidpour, M and **Khodaei H**. "Steam Network modeling and simulation in gas refinery by considering pinch technology." **IEEE Southeastcon 2009**. IEEE, 2009.
15- Eulerian-Eulerian Modelling of Biomass Thermal Conversion in a Rotary Kiln, Álvarez-Bermúdez, César; **Khodaei, Hassan**; Chapela, Sergio; Gómez, Miguel Ángel; Adhikari, Sushil; Porteiro, Jacobo, 2024, 2nd International Workshop on Reacting Particle-Gas Systems organizers

Research Presentation

- Optimized energy consumption in steam network of oil refineries international conference of chemical engineering, Sharif University, Kish Island 2007
- Exergy Analysis in Tehran oil refinery steam network, ESL lab, Texas A&M university 2009
- CO_2 reduction through optimization of steam Network in the petroleum refineries: Evaluation of New Sceneries, 30th Industrial Energy Technology Conference (IETC), US Department of Energy and Texas A&M University, Department of Natural Resource, New Orleans, USA 2008.

https://www.linkedin.com/in/hassankhodaei?lipi=urn%3Ali%3Apage%3Ad_flagship3_profile_view_base_contact_details%3BVs8EBQgkRB%2BgnqAwe68orA%3D%3D

https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=HhWsujcAAAAJ