



Exponent[®]
Engineering & Scientific Consulting

Joshua Gopeesingh, Ph.D., CFEI

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Professional Profile

Dr. Gopeesingh is a chemical engineer with expertise in failure analysis and process optimization of chemical systems which include chemical reactors, electrolyzers, catalyst technology, fuel burning devices, and fuel cells. He is professionally trained in the fields including reaction engineering, electrochemistry and combustion with an expansive familiarity with tools and strategies for failure analysis as well as risk assessment. His investigations into system failures involve deep analyses of solid, liquid and gas components that may be comprised within a given issue. He has collaborated on projects with government, industry and academic institutions; and understands how to effectively communicate with as well as on behalf of clients.

Dr. Gopeesingh is an expert at analyzing chemical and reactor technology used a wide array of applications. He is well experienced in recording and analyzing large data sets to extract important information and trends. Dr. Gopeesingh has worked with the U.S. Army, Department of Energy, oil & gas industry, renewables industry and also academia. His expertise in his field is acknowledged internationally through collaborations and awards.

Prior to joining Exponent, Dr. Gopeesingh completed his B.Sc. in Chemical Engineering at Hampton University and Ph.D in Chemical Engineering at Syracuse University. He was a researcher at the Massachusetts Institute of Technology and a postdoctoral research associate at the University of Massachusetts Amherst. He was also a postdoctoral scientist in the combustion institute at Sandia National Laboratory.

Academic Credentials & Professional Honors

Ph.D., Chemical Engineering, Syracuse University, 2019

B.S., Chemical Engineering, Hampton University, 2014

Hampton University Presidential Scholar, 2010-2014

Xerox Energy Technology Grant, 2012-2013

Virginia Power and Engineering Technology Grant, 2013

Licenses and Certifications

40-Hour Hazardous Waste Operation and Emergency Response Certification (HAZWOPER)

Certified Fire and Explosion Investigator (CFEI) (CA)

PADI Certified Open Water Scuba Diver (CA)

Academic Appointments

Teaching Assistant, Chemical Reaction Engineering, Syracuse University, 2015

Teaching Assistant, Fundamentals of Heat and Mass Transfer, Syracuse University, 2014

Prior Experience

Postdoctoral Scientist, Sandia National Laboratories, 2021-2023

Postdoctoral Research Associate, Chemical Engineering Department, University of Massachusetts Amherst, 2019-2021

Graduate Student Researcher, Chemical Engineering Department, Syracuse University, 2014-2019

Research Assistant, Chemical Engineering Department, Hampton University, 2012-2014

Research Assistant, Chemical Engineering Department, MIT, 2012

Professional Affiliations

American Institute of Chemical Engineers

National Society of Black Engineers

Publications

“Modeling of an Industrial Hydrotreatment Process for Diesel Production under Uncertainty,” J. Gopeesingh, A. J. Adamczyk, W. H. Green, Society for Advancement of Hispanics/Chicanos and Native Americans in Science National Conference, October 2012, Washington USA.

“Hydrodeoxygenation of Carboxylic Acids over Silica Supported Metallic Catalysts,” J. Gopeesingh, J. Q. Bond, Nunan Research Day, March 2016, New York USA

“Succinic Acid Hydrodeoxygenation over Noble Metal Catalysts”, J. Gopeesingh, J. Q. Bond, Syracuse University College of Engineering Research Day, March 2017, New York USA

“Using Microkinetic Analysis to Predict Product Selectivity during Propionic Acid Hydrodeoxygenation over Supported Pt and Ru Catalysts”, J. Gopeesingh, J. Q. Bond, American Institute of Chemical Engineers Annual Meeting, October 2017, Minnesota USA.

“Propionic Acid Hydrodeoxygenation over Supported Pt and Ru Catalysts,” J. Gopeesingh, J. Q. Bond, Catalysis: Gordon Research Conference, June 2018, New Hampshire USA.

“Propionic Acid Hydrodeoxygenation over Supported Pt and Ru Catalysts,” J. Gopeesingh, J. Q. Bond, Catalysis: Gordon Research Seminar, June 2018, New Hampshire USA.

“A Kinetic Analysis of Carboxylic Hydrodeoxygenation over Supported Pt and Ru Catalysts,” J. Q. Bond, J. Gopeesingh, 256th American Chemical Society National Meeting & Exposition, August 2018, Massachusetts USA.

“Reaction Analysis and Kinetics of Propionic Acid Hydrodeoxygenation over Supported Pt and Ru

Catalysts," J. Gopeesingh, J. Q. Bond, American Institute of Chemical Engineers Annual Meeting, October 2018, Pittsburgh USA.

"Microscopic view of observable trends in reactor performance during the Hydrodeoxygenation of carboxylic acids," J. Gopeesingh, J. Q. Bond, 257th American Chemical Society National Meeting & Exposition, April 2018, Orlando USA.

"Controlled Synthesis of Pt-Sn/Al₂O₃ catalysts and Their Application in the Hydrodeoxygenation of Bio-Based Succinic Acid," P. Howe, J. Gopeesingh, J. Q. Bond, American Institute of Chemical Engineers Annual Meeting, October 2018, Pittsburgh USA

"Electrodynamic Formic Acid Electrooxidation over Pt," J. Gopeesingh, O. A. Abdelrahman, American Institute of Chemical Engineers Annual Meeting, November 2020, San Francisco USA.

"Tuning Catalysts for Efficient Chemical and Energy Transformation," J. Gopeesingh, O. A. Abdelrahman, J. Q. Bond, American Institute of Chemical Engineers Annual Meeting, November 2020, San Francisco USA.

"Resonance- Promoted Formic Acid Oxidation Via Dynamic Electrocatalysis," O. A. Abdelrahman, P. Dauenhauer, M. Shetty, A. Ardagh, J. Gopeesingh, American Institute of Chemical Engineers Annual Meeting, November 2020, San Francisco USA.

Peer Reviews

Journal of Physical Chemistry

ACS Catalysis