UNIVERSITY OF TWENTE.

CV: Dr. Ir. Jimmy A. Faria A.

PERSONAL INFORMATION

Family name, First name: Faria Albanese, Jimmy Alexander
Date of birth: 13-03-1985
Nationality: Venezuelan/Portuguese
e-mail: j.a.fariaalbanese@utwente.nl
URL for web sites: https://www.utwente.nl/en/tnw/cpm/people/FariaAlbanese/
https://www.jimmyfaria.com/

Google Scholar: https://scholar.google.es/citations?user=k0YfbC8AAAAJ&hl=en
Research gate: https://www.researchgate.net/profile/Jimmy_Faria
LinkedIn: https://www.linkedin.com/in/jimmy-faria/?ppe=1
Research ID (J-3428-2017), ORCID (orcid.org/0000-0002-8920-3538), Scopus Author ID (35738498300)

EDUCATION

2012 PhD. Chemical Engineering
University of Oklahoma, USA
2008 Bachelor in Chemical Engineering
Universidad Nacional Experimental Politécnica “Antonio José de Sucre”, Venezuela

ACADEMIC/INDUSTRIAL EXPERIENCE

2022- Associate Professor, University of Twente, The Netherlands
2017-2022 Tenure-Track Assistant Professor, University of Twente, The Netherlands
2015-2017 Group Leader of the Hydrogen Technological Area, Abengoa Research, Spain
2014-2015 Program Manager, Catalysis and Materials for H_2, Abengoa Research, Spain
2012-2014 Senior Researcher, Chemical Processes Group, Abengoa Research, Spain
2012 PhD. Research Intern, Low Carbon H_2 Group, Phillips 66 Research Center, USA
2008-2012 Research Assistant, University of Oklahoma, USA.

Track-record summary

During my PhD I developed a breakthrough technology for simultaneous reaction and separation using amphiphilic nanohybrid catalysts. This research led to several groundbreaking publications (Science, JACS, ACS Catal.) and the creation of a 10 M$ Center for Interfacial Reaction Engineering at the University of Oklahoma. Before graduation I conducted a research internship at Phillips 66 R&D center that resuled in the filling of one patent application based on the results of my stay at the company. Then, I decided to move to industry to developed innovation technology at the Corporate R&D of Center of Abengoa, which is a multinational company on renewable energies. In this exciting position, I developed innovative processes for biomass valorization that led to a number of patents (6) and publications (10), some of which were instrumental for the commercial lignocellulosic bioethanol technology employed by Abengoa worldwide. Later, I became the Group Leader of the Hydrogen Technological Area where I led a group of scientists and engineers (R&D budget of~2M€/year) in the development of ethanol reforming for compact H2 production units and water electrolysis, currently employed by the Spaniard Navy in the state-of-art submarines class S-80 as stealth propulsion systems. The innovative character of my scientific work led to the acquisition of external funding (EU-FP7 and Spanish government) for ~1.7M€ that supported the development of advanced catalytic materials and processes. This experience gave me a critical sense for innovation technology and management-skills that now I am leveraging in my current position as Tenure-Track Assistant Professor at the University of Twente to develop high-risk/high-gain research. Now, my research group is focused on the multi-phasic reaction systems and intensified catalytic reactors for biomass valorization, polymers upcycling, and chemical energy storage (ammonia and methane).

FELLOWSHIPS AND AWARDS

2018 Best oral contribution of the symposium *Conversion of Biomass Derived Molecules to Chemicals & Fuels* in the ACS Annual Meeting, New Orleans, USA. Includes an invitation to submit a full-article in the Journal Industrial & Engineering Chemistry Research. *Front cover of the journal.*
2008-2012 Graduate Assistantship, University of Oklahoma, USA, **96 K€**
2011-2012 Robert Hughes Centennial Fellowship Award, University of Oklahoma, USA, **15 K€** (Recognition given to the top 5 % of graduate students – size 6000 students - 2 times

awarded)

2011-2012 BP Graduate Student Excellence Award, British Petroleum, USA, **7.5 K€** (Recognition given to the best graduate student – size 100 students)

2011 Graduate Student Award Symposium, Industrial and Engineering Chemistry Division (I&Ec), American Chemical Society, USA

2011 Research Award at the OK-EPSCOR-NSF State Conference, USA

2009 Research Award of the Student Research Performance Day, University of Oklahoma, USA

2006 First Place. 6th Session of the International School of Polymers. University of "Los Andes". Venezuela

2007 Research and Development Excellence Award, Universidad Nacional Experimental Politécnica "Antonio José de Sucre", Venezuela

2003-2005 Scholarship for the Academic Excellence, Universidad Nacional Experimental Politécnica "Antonio José de Sucre", Venezuela (Recognition to the best student of each semester – class size 120 students – 5 times awarded)

INSTITUTIONAL RESPONSIBILITIES

I am external reviewer of the German Academic Exchange Service (DAAD), Postdoc-Program PRIME of Germany, the National Commission of Scientific Research and Technology (Comisión Nacional de Investigación Científica y Tecnológica – CONICYT) of the Republic of Chile, the Spanish National Evaluation and Foresight Agency from the Ministry of Economic Affairs, Expert reviewer for KAUST university, Jury member of the David Reinhoudt poster award, MESA+ Conference. Expert reviewer for the science foundation of Israel.

TEACHING/TRAINING ACTIVITIES

Since 2017 I teach the courses of Advanced Catalysts, Reaction kinetics and catalysis in the BSc grogram of CSE and Fundamentals of Inorganic Chemistry in the BSc program of CSE and BMT at the University of Twente, The Netherlands.

ORGANISATION OF SCIENTIFIC MEETINGS

2022 ACS Catalysis Science and Technology Division Symposia of the ACS – Fall Meeting in Chicago, USA

2020-21 NextGenChem meeting, CHAINS meeting. The Netherlands.

2020 Organizer of the Symposium solvation effects in thermo-, electro-, and photo- catalysis in the ACS Catalysis Science and Technology Division Symposia of the ACS – Fall Meeting in San Francisco, USA

2020 Organizer of the RESILIENT-Island workshop at the University of Curaçao on sustainable production of water, energy, and food. Supported by the NWO.

2019 Organizer of the Symposium Catalytic conversion of biomass-derived oxygenates in the ACS Catalysis Science and Technology Division Symposia of the ACS – Fall Meeting in San Diego, USA

2019 Chair of the session of *"Catalysis Reaction Engineering"* in the Netherlands' Catalysis and Chemistry Conference (NCCC), Netherlands (+*500 attendees*).

2018 Chair of the Session *"Catalysis Engineering"* in *CHAIN* the annual scientific chemistry conference organized by Netherlands Organization for Scientific Research (NWO), Netherlands (+*1500 attendees*).

2018 Organizer of the Symposium Water (Greenest Solvent): Single and Biphasic Reactions in the ACS Catalysis Science and Technology Division Symposia of the ACS – Fall Meeting in Boston, USA

2014 Organizer of the workshop on Chemistry for Biomass Conversion (Chem4Bio) in collaboration with the Agency of Innovation and Development of Andalusia (IDEA), Spain

2014 Organizer of the Summer-school in Catalysis at Abengoa Research, Spain

PEER REVIEW CONTRIBUTIONS

I am invited editor of Catalysis Today special issue on our symposium in the ACS meeting in San Diego 2019 on Biomass Conversion. In addition, I am a scientific reviewer of Advanced Energy Materials, Journal of Catalysis, Journal of Applied Catalysis A: General, Journal of Industrial & Engineering Chemistry, Industrial & Engineering Chemistry Research, ACS Sustainable Chemistry & Engineering, ACS Catalysis, Energy & Fuels, ChemCatChem, Catalysis Science and Technology, Journal of Electrochemistry Society, International Journal of Molecular Sciences, Catalysts, Energies, Energy Technology, Frontiers, Fuel

Processing Technology, Materials, Polymers, Processes, Polyhedron, and Resources.

RESEARCH GRANTS

Before my appointment at UT, I secured research grants for a total value of **1.8** M€ from competitive funding schemes of the European Union, Spanish Minister of Economic Affairs, and the Chinese Government. Since 2017 I have received **2.0 M€** on research funding directly for my group at University of Twente. In addition, I have **2.6 M€** pending for decision funding.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES/NETWORKS

I am a member of the Science and Catalysis Technology division of the American Chemical Society, American Institute of Chemical Engineers, Dutch Catalysis Society, the Netherlands Institute for Catalysis Research (NIOK), and Royal Netherlands Chemical Society.

INVITED CONFERENCE PRESENTATIONS AND SEMINARS AT LEADING INSTITUTIONS

I have been invited to ten (10) international conferences and seminars in leading scientific conferences and research institutions in the field of heterogeneous catalysis. The most important ones are listed below:

2021 "Renaissance of ammonia synthesis for sustainable production of energy and fertilizers" Invited seminar from the Netherlands Process Technology from KIVI. The Netherlands.

2021 "Tunning solvation effects using polymer functionalized catalysts" Invited seminar at the Department of Chemical, Biological, and Materials Engineering of the University of Oklahoma, USA.

2019 Invited speaker at the ACS Symposium on solvation effects of the ACS Annual Meeting, San Diego, USA.

2018 "Catalysis in water-oil emulsion systems", Invited seminar at the Department of Chemical Engineering of the University of Groningen, Netherlands, USA.

2018 "Biphasic reaction systems", Invited seminar at the Department of Chemical Engineering of the University of New York, New York, USA.

2018 "Catalytic Strategies for Biomass Conversion in Liquid Environments", Invited Keynote Speaker at the Netherlands Process Technology Symposium, University of Twente

2017 "Catalytic Strategies for Biomass Conversion in Liquid Environments", invited seminar at Max-Planck-Institut für Kohlenforschung, Germany.

LIST OF PUBLICATIONS

I have (co-)authored 35 publications in international peer-reviewed journals (12 as corresponding author) and 4 book chapters. The journals in which these papers were published (Science, JACS, Angewandte Chemie, ACS Catalysis) are highly ranked in the chemistry and catalysis engineering fields. It is very interesting to see the evolution of my role in these papers from first author (mainly during my PhD years) to middle author, mainly as a result of the research collaboration that I stablished between Abengoa and Prof. D. E. Resasco's group at University of Oklahoma, to the last author as daily supervisor in my current position at University of Twente. The total number of citations has been steadily growing (1225 citations, h-index of 13, average citations per article is 58, Source: Publons). Now that I have returned to academia, I expect the trend to accelerate, as I fully establish my independent research group.

I) Journal articles

***: Corresponding author. †: Collaboration project. @: equal contributor.**

35. Victor N. Sagel, Kevin H.R. Rouwenhorst, **Jimmy A. Faria** "Renewable Electricity Generation in Small Island Developing States: The Effect of Importing Ammonia", Energies 2022, 15(9), 3374; doi.org: 10.3390/en15093374.
34. M. Pilar Ruiz, **Jimmy A. Faria** "Catalysis at the Solid–Liquid–Liquid Interface of Water–Oil Pickering Emulsions: A Tutorial Review", ACS Engineering Au (2022). doi: 10.1021/acsengineeringau.2c00010
33. Victor N. Sagel, Kevin H.R. Rouwenhorst, **Jimmy A. Faria** "Green ammonia enables sustainable energy production in small island developing states: A case study on the island of Curaçao", Renewable and Sustainable Energy Reviews 161 (2022) 112381. doi: 10.1016/j.rser.2022.112381
32. Maria Joao Enes da Silva, Aayan Banerjee, Leon Lefferts, **Jimmy Alexander Faria Albanese***, "*In-situ* ATR-IR Spectroscopy Reveals Complex Absorption-Diffusion Dynamics in Model Polymer-Membrane-Catalyst Assemblies (PCMA)", ChemCatChem, (2022), doi: 10.1002/cctc.202101835.
31. Maria João Enes da Silva, Leon Lefferts, **Jimmy Alexander Faria Albanese*,** "N-isopropylacrylamide polymer brushes alter the micro-solvation environment during aqueous nitrite hydrogenation on Pd/Al_2O_3 catalyst", Journal of Catalysis 402, (2021), doi:10.1016/j.jcat.2021.08.003

30. **Jimmy Faria-Albanese*,** “Renaissance of Ammonia Synthesis for Sustainable Production of Energy and Fertilizers”, Curr. Opin. Green Sustain. Chem. (2021) doi:10.1016/j.cogsc.2021.100466.
29. Nuria García-Moncada, Juan Carlos Navarros, José Antonio Odriozola, Leon Lefferts, **Jimmy A. Faria***, “Enhanced catalytic activity and stability of nanoshaped Ni/CeO_2 for CO_2 methanation in micro-monoliths”, Catal. Today, (2021) doi:10.1016/j.cattod.2021.02.014.
28. Azam Anaraki Firooz,* Masoumeh Ghalkhani,* Jimmy A. Faria Albanese, Maryam Ghanbari, "High electrochemical detection of dopamine based on Cu doped single phase hexagonally ZnO plates", Materials Today Communications, (2021), 10.1016/j.mtcomm.2020.101716.
27. Maria Pappaterra, Pengyu Xu, Walter van der Meer, Jimmy A. Faria,* David Fernandez Rivas,* Cavitation intensifying bags improve ultrasonic advanced oxidation with Pd/Al2O3 catalyst", Ultrasonics Sonochemistry 70, (2021), 10.1016/j.ultsonch.2020.105324.
26. David Fernandez Rivas, Daria C. Boffito, **Jimmy Faria-Albanese**, Jarka Glassey, Nona Afraz, Henk Akse, Kamelia.V.K. Boodhoo, Rene Bos, Judith Cantin, Yi Wai (Emily) Chiang, Jean-Marc Commenge, Jean-Luc Dubois, Federico Galli, Jean Paul Gueneau de Mussy, Jan Harmsen, Siddharth Kalra, Fred Keil, Ruben Morales-Menendez, Francisco J. Navarro-Brull, Timothy Noël, Kim Ogden, Gregory S Patience, David Reay, Rafael M. Santos, Ashley Smith-Schoettker, Andrzej I. Stankiewicz, Henk van den Berg, Tom van Gerven, Jeroen van Gestel, Michiel van der Stelt, Mark van de Ven, R. S. Weber, “Process intensification education contributes to sustainable development goals. Part 2”, Education for Chemical Engineers 32, 15–24 (2020). 10.1016/j.ece.2020.05.001
25. David Fernandez Rivas, Daria C. Boffito, **Jimmy Faria-Albanese**, Jarka Glassey, Nona Afraz, Henk Akse, Kamelia.V.K. Boodhoo, Rene Bos, Judith Cantin, Yi Wai (Emily) Chiang, Jean-Marc Commenge, Jean-Luc Dubois, Federico Galli, Jean Paul Gueneau de Mussy, Jan Harmsen, Siddharth Kalra, Fred Keil, Ruben Morales-Menendez, Francisco J. Navarro-Brull, Timothy Noël, Kim Ogden, Gregory S Patience, David Reay, Rafael M. Santos, Ashley Smith-Schoettker, Andrzej I. Stankiewicz, Henk van den Berg, Tom van Gerven, Jeroen van Gestel, Michiel van der Stelt, Mark van de Ven, R. S. Weber, “Process intensification education contributes to sustainable development goals. Part 1”, Education for Chemical Engineers 32, 1–14, (2020). 10.1016/j.ece.2020.04.003.
24. Daniel Santhanaraj, Maria P. Ruiz, Mallik R. Komarneni, Tu Pham, Gengnan Li, Daniel E. Resasco, and **Jimmy Faria***, "Synthesis of α,β- and β-Unsaturated Acids and Hydroxy Acids by Tandem Oxidation, Epoxidation, and Hydrolysis/Hydrogenation of Bioethanol Derivatives", Angew. Chem. Int. Ed., 59 (2020), 1-6, 9, 11, (2019). 10.1002/anie.202002049.
23. Pengyu Xu, Shilpa Agarwal, **Jimmy Faria Albanese**, Leon Lefferts, "Enhanced transport in Gas-Liquid-Solid catalytic reaction by structured wetting properties: Nitrite hydrogenation", Chemical Engineering and Processing: Process Intensification, 148 (2020) 107802, 10.1016/j.cep.2020.107802.
22. Daniel Goma,Juan José Delgado, Leon Lefferts, **J. Faria**, José Juan Calvino, and Miguel Ángel Cauqui, "Catalytic Performance of Ni/CeO2/X-ZrO2 (X = Ca, Y) Catalysts in the Aqueous-Phase Reforming of Methanol", Nanomaterials, 9, 11, (2019) 1582, 10.3390/nano9111582.
21. Manuel Antonio Díaz-Pérez, Javier Moya, Juan Carlos Serrano-Ruiz , and **J Faria*,** "Interplay of Support Chemistry and Reaction Conditions on Copper Catalyzed Methanol Steam Reforming", Ind. Eng. Chem. Res., 57, 45 (2018), 15268. 10.1021/acs.iecr.8b02488.
20. Zheng Zhao, Lu Zhang, Qiaohua Tan, Feifei Yang, **J. Faria**, Daniel Resasco, "Synergistic bimetallic Ru–Pt catalysts for the low-temperature aqueous phase reforming of ethanol", AIChE Journal (2018), 10.1002/aic.16430.
19. Beatriz Gómez-Monedero, M. Pilar Ruiz, Fernando Bimbela, **J. Faria***, "Selective depolymerization of industrial lignin-containing stillage obtained from cellulosic bioethanol processing", Fuel Process. Technol., 173 (2018) 165.
18. B. Gómez-Monedero, M. P. Ruiz, **J. Faria***, “Catalytic hydroprocessing of lignin β-O-4 ether bond model compound phenethyl phenyl ether over ruthenium catalysts”, Biomass Conversion and Biorefinery, 10.1007/s13399-017-0275-5 (2017).
17. N. Aranda-Pérez, M. Pilar Ruiz, J. Echave, and **J. Faria*** “Enhanced Activity and Stability of Ru-TiO_2 Rutile for Aqueous Phase Ketonization”, Applied Catalysis A: General, 531 (2017) 106.
16. B. Gómez-Monedero, M. P. Ruiz, J. **Faria***, “Selective Hydrogenolysis of a-O-4, b-O-4, 4-O-5 C-O Bonds of Lignin-Model Compounds and Lignin-containing Stillage Derived from Cellulosic Bioethanol Processing”, Applied Catalysis A: General http://dx.doi.org/10.1016/j.apcata.2017.04.022 (2017).
15. T. N. Pham, Z. Lu, D. Shi, M. R. Komarneni, M. P. Ruiz, **J. Faria*** and D. E. Resasco “Fine-Tuning the Acid-Base Properties of Boron-Doped Magnesium Oxide Catalyst for Selective Aldol-Condensation”, ChemCatChem 8 (2016) 3611.

14. L. Zhang, T. N. Pham, **J. Faria**†, D. Santhanaraj, T. Sooknoi, Q. Tan, Z. Zhao, and D. E. Resasco "Synthesis of C4 and C8 Chemicals from Ethanol on MgO Incorporated Faujasite Catalysts with Balanced Confinement Effects and Basicity" ChemSusChem, 10.1002/cssc.201501518 (2016).
13. **J. Faria**†, M.P. Ruiz, D.E. Resasco "Carbon Nanotube-Zeolite Hybrid Catalysts for Glucose Conversion in Water/Oil Emulsions", ACS Catalysis 5 (2015) 4761.
12. Zhang, T. N. Pham, **J. Faria**†, and D. E. Resasco "Improving the selectivity to C4 products in the aldol condensation of acetaldehyde in ethanol over faujasite zeolites", Applied Catalysis A: General 504 (2014) 119.
11. F. Bimbela, B. Gómez-Monedero, J. Arauzo, **J. Faria**, M. P. Ruiz. "Fast pyrolysis of red Eucalyptus, Camelina straw and Wheat straw in an ablative reactor", Energy & Fuels 29 (2015) 1766.
10. D. Shi, **J. Faria**†, T. N. Pham, D. E. Resasco "Enhanced Activity and Selectivity of Fischer−Tropsch Synthesis Catalysts in Water/Oil Emulsions", ACS Catalysis 6 (2014) 1944.
9. D. Shi, **J. Faria**†, A. A. Rownaghi, R. L. Huhnke, and D. E. Resasco "Fischer–Tropsch Synthesis Catalyzed by Solid Nanoparticles at the Water/Oil Interface in an Emulsion System", Energy & Fuels 27 (2013), 10.
8. M.T. Jimaré, F. Cazaña, A. Ramirez, C. Royo, E. Romeo, **J. Faria**, D. Resasco and A. Monzón "Modeling experimental vanillin hydrodeoxygenation reactions in water/oil emulsions. Effects of mass transport", Catalysis Today 210 (2013), 89.
7. S. Drexler, **J. Faria**, M.P. Ruiz, J. Harwell, and D.E. Resasco. "Amphiphilic nanohybrids catalysts for reactions at the water/oil interface in subsurface reservoirs", Energy & Fuels, 26 (2012) 2231.
6. P. Zapata, **J. Faria**, M. P. Ruiz, D.E. Resasco. "Condensation/hydrogenation of biomass-derived oxygenates in water/oil emulsions stabilized by nanohybrid catalysts", Topic in Catalysis 55 (2011), 38.
5. P. Zapata@, **J. Faria**@, M.P. Ruiz and D.E. Resasco "Hydrophobic Zeolites for Biofuel Upgrading Reactions at the Liquid–Liquid Interface in Water/Oil Emulsions", Journal of American Chemical Society 134 (2012) 8570.
4. J. Baez, M. P. Ruiz, **J. A. Faria**, J. Harwell, B. Shiau, D. E. Resasco. "Stabilization of interfacially-active-nanohybrids/polymer suspensions and transport through porous media" Proceedings - SPE Symposium on Improved Oil Recovery 1 (2012), 766.
3. M.P. Ruiz, **J. Faria**, M. Shen, S. Drexler, T. Prasomsri, D.E. Resasco. "Nanostructured Carbon-Metal Oxide Hybrids as Amphiphilic Emulsion Catalysts", ChemSusChem 4 (2011) 964.
2. **J. Faria**, M.P. Ruiz, D.E. Resasco. "Phase-Selective Catalysis in Emulsions Stabilized by Janus Silica-Nanoparticles" Advanced Synthesis and Catalysis 352 (2010) 2359.
1. S. Crossley, **J. Faria**, M. Shen and D.E. Resasco. "Solid Nanoparticles that Catalyze Biofuel Upgrade Reactions at the Water/Oil Interface" Science 327 (2010) 68.

II) Book Chapters and Editorial work (*Edited Books and @Book Chapters)

4. **J. A. Faria A.*,** M. P. Ruiz, "Climate Change Mitigation: Greenhouse Gas Reduction and Biochemicals", 2015, ISBN-13: 978-1771882422, Apple Academic Press, UK.
3. **J. A. Faria A.***, M. P. Ruiz, "Solid Waste as a Renewable Resource: Methodologies", 2015, ISBN-13: 978-1771882439, Apple Academic Press, UK.
2. J. C. Serrano-Ruiz, M. P. Ruiz, **J. Faria**@, "An introduction to Green chemistry methods", 2013, ISBN: 978-1-909453-11-1. Editors: R. Luque and J. C. Colmenares, Future Science Ltd, UK.
1. D.E. Resasco, **J. Faria**@, S. Sitthisa, T. Prasomsri, M.P. Ruiz. "Furfurals as chemical platform for biofuel production", in "Heterogeneous catalysis in biomass to chemicals and fuels", 2011, ISBN: 978-81-308-0462-0, Editors: David Kubička and Iva Kubičkova, Research Signpost, Kerala, India.

LIST OF PATENTS

7. **J. A. Faria***, M.P. Ruiz, B. Gómez, M. Lecea, "A catalytic process for the depolymerization of lignin", Spanish Patent Office (Spanish Patent Application Number P201630455). 2015.
6. **J. A. Faria***, M.P. Ruiz, D.E. Resasco, T. N. Pham, M. R. Komarneni, D. S. Bakiaraj, "Process of obtainment of an unsaturated acid", Spanish Patent Office (Spanish Patent Application Number P201531162). 2015.
5. D.E. Resasco, **J. A. Faria**†, M.P. Ruiz, "Catalytic conversion of carbohydrates to diketones and hydroxyacids", Spanish Patent Office (Spanish Patent Application Number P201431785). 2014.
4. D.E. Resasco, T. N. Pham, Zhang L., **J. A. Faria**†, M.P. Ruiz, "Microporous catalyst with selective encapsulation of metal oxides useful for producing butadiene precursors", ES application number P201431595 and US application number 62/072,574. 2014.

3. D.E. Resasco, T. N. Pham, Zhang L., **J. A. Faria**†, M.P. Ruiz, “Mixed oxides comprising magnesium and boron, and their use as catalysts for producing butadiene precursors”, ES application number P201431594 and US application number 62/072,538. 2014.
2. **J. A. Faria**, J. M. Nelson, U. P. Paul, D. K. Smith, “Catalysts for renewable hydrogen production from oxygenated feedstocks”. PTC/US2013/068380. 2012.
1. D.E. Resasco, S. Drexler, J. Harwell, B. Shiau, M. Kadhum, **J. Faria**, M.P. Ruiz. “Method and Foam composition for recovering hydrocarbons from a subterranean reservoir”. US 20150175876 A1. 2011.