SHORT CURRICULUM VITAE

Education

1971-1975	B.Sc. in Chemical Engineering, summa cum laude, BGU, Israel
1975-1976	M.Sc. in Chemical Engineering, University of California, Davis, USA
1976-1978	Ph.D. in Chemical Engineering, University of California, Davis, USA

Positions Held

1979-1982	Lecturer, Chemical Engineering, BGU, Israel
1981-1982	Visiting Scientist, Chemical Engineering, University of Cambridge, England
1982-1986	Senior Lecturer, Chemical Engineering, BGU, Israel
1982-1984	Visiting Scientist, Institute of Chemical Reaction Engineering, Friedrich-Alexander-Universität, Germany
1986-1992	Associate Professor, Chemical Engineering, BGU
1992-2018	Professor, Chemical Engineering, BGU
1984-1986	Visiting Scientist, Exxon Research and Engineering Co., USA
1986-2002	Consultant, ExxonMobil Research and Engineering Co., USA
1987-1989	Consultant, Bromine Compounds Co., Israel
1988-1994	Consultant, Nuclear Research Negev, Israel
1989-1993	Chairman, Chemical Engineering, BGU, Israel
1995-	Director of the Blechner Center for Industrial Catalysis and Process Development, BGU
1997	Visiting Scientist, Chemical Engineering, Nagoya University, Japan
2003-2014	Vice-President and Dean for Research and Development, BGU, Israel
2006-2018	Israel Cohen Chair in Chemical Engineering, BGU, Israel
2011-2014	Head of the Energy Committee at the Israel National Council for R&D
2016-2017	Director of the National Institute of Biotechnology, BGU, Israel
2017	Visiting Scientist, Chemical Engineering, North Carolina State University, USA
2017-2022	Head of Israel Committee for IIASA
2018-	Professor Emeritus, Chemical Engineering, BGU, Israel
2018-2021	Consultant, Adama Ltd., Israel
2023-	Chief Scientist, NGV, Israel

Research Funding (total over 22 million $) only relevant to Fuels R&D

1983-1986	Synthetic fuels from syngas, Ministry of Energy, Israel
1990-1992	Modeling of polymerization processes, Exxon Chem. Co., USA
1996-2001	Testing of Fischer-Tropsch catalysts, ExxonMobil Res. & Eng. Co., USA
2002-2011	Ultradeep Desulfurization, ExxonMobil Res. & Eng. Co., USA
2004-2007	Hydrodesulfurization, UOP, USA
2004-2007	Green Diesel from triglycerides, Ormat, Israel
2005-2007	Fischer-Tropsch testing, ExxonMobil Res. & Eng. Co., USA
2008-2009	Hydrotreating, Accelergy, USA
2011-2014	Catalytic conversion of vegetable oils to renewable liquid fuels**,** MOST, Israel
2011-2016	Solar fuels, I-CORE, Israel
2013-2016	Partial oxidation of methane, Ministry of Energy, Israel
2012-2015	Catalytic process for the hydrogenation of CO_2 to jet fuel, I-SAEF, USA
2013-2016	Catalytic materials for the hydrogenation of carbon dioxide to liquid fuels, ISF, Israel
2014-2016	Fischer–Tropsch process for converting syngas into liquid fuels, Nexen, Canada
2015-2017	CO_2 hydrogenation to higher hydrocarbons on Fe-based catalysts, MOST, Israel
2017-2018	Organic Waste to Green Diesel, Ecolin, Israel
2016-2019	WASTE2FUELS, European Commission, Horizon 2020
2018-2020	Production of hydrogen from methanol by novel process, MAFAT, Israel
2019-2023	Lattice Oxygen Assisted Methane Activation for Modular Production of Fischer-Tropsch Ready Syngas, NSF-BSF and Manufacturing USA
2023-2025	Production of SAF, NGV, Israel

Selected Publications only relevant to Alternative Fuels (out of 166 publications)

1. Landau, M. V., Berger, D. and Herskowitz, M., “Hydrodesulfurization of methyl-substituted dibenzothiophenes: fundamental study of routes to deep desulfurization”, Journal of Catalysis 159(1), 236-45 (1996).

2. Landau, M. V., Herskowitz, M., Givoni, D., Laichter, S. and Yitzhaki, D., “Medium-severity hydrotreating and hydrocracking of Israeli shale oil. 1. Novel catalyst systems”, Fuel 75(7), 858-866 (1996).

3. Landau, M. V., Herskowitz, M., Givoni, D., Laichter, S. and Yitzhaki, D., “Medium severity hydrotreating and hydrocracking of Israeli shale oil-II. Testing of novel catalyst systems in a trickle bed reactor”, Fuel 77(1/2), 3-13 (1997).

4. Landau, M. V., Herskowitz, M., Givoni, D., Laichter, S. and Yitzhaki, D., “Medium severity hydrotreating and hydrocracking of Israeli shale oil. III. Hydrocracking of hydrotreated shale oil and its atmospheric residue for full conversion to motor fuels”, Fuel 77(14), 1589-1597 (1998).

5. Vradman, L., Landau, M.V. and Herskowitz, M., "Deep desulfurization of diesel fuels: kinetic modeling of model compounds in trickle-bed" Catalysis Today 48, 41 – 48 (1999).

6. Vradman, L., Landau, M.V., Herskowitz, M., Ezersky, V., Talianker, M., Nikitenko, S., Koltypin, Y., and A. Gedanken, "High loading of short WS_2 slabs inside SBA-15: promotion with nickel and performance in hydrodesulfurization and hydrogenation“, Journal of Catalysis, 213, 163-175(2003).

7. Vradman, L., Landau, M.V. and Herskowitz, M. “Hydrodearomatization of petroleum fuel fractions on silica supported Ni-W-sulfide with increased stacking number of WS_2 phase”, Fuel 82, 633–639 (2003)

8. Landau, M. V., Herskowitz, M., Agnihotri, R. and Kegerreis, J. E., "Ultradeep adsorption-desulfurization of gasoline with Ni/Al-SiO_2 material catalytically facilitated by ethanol", Industrial & Engineering Chemistry Research 47(18), 6904-16 (2008).

9. Landau, M. V., Herskowitz, M., Hoffman, T., Fuks, D., Liverts, E., Vingurt, D., Froumin, N., "Ultradeep hydrodesulfurization and adsorptive desulfurization of diesel fuel on metal-rich nickel phosphides", Industrial & Engineering Chemistry Research 48(11), 5239-5249 (2009).

10. Herskowitz, M., Landau, M.V., Reizner, Y. and Berger, D., "A commercially-viable, one-step process for production of green diesel from soybean oil on Pt/SAPO-11", Fuel 111, 157–164 (2013).

11. Landau, M.V., Vidruk, R. and Herskowitz, M., "Sustainable production of green feed from carbon dioxide and hydrogen", ChemSusChem 7, 785 – 794 (2014).

12. Zarchin, R., Rabaev, M., Vidruk-Nehemya, R., Landau, M.V. and Herskowitz, M. "Hydro-processing of soybean oil on nickel-phosphide supported catalysts" Fuel 139, 684-691 (2014).

13. Rabaev, M., Landau, M.V., Vidruk-Nehemya, R., Koukouliev, V., Zarchin, R. and M. Herskowitz, “Conversion of vegetable oils on Pt/Al_2O_3/SAPO-11 to diesel and jet fuels containing aromatics”, Fuel 161, 287–294 (2015).

14. Meiri, N., Dinburg, Y., Amoyal, M., Koukouliev, V., Nehemya Vidruk, R., Landau, M. V. and Herskowitz, M., "Novel process and catalytic materials for converting CO_2 and H_2 containing mixtures to liquid fuels and chemicals", Faraday Discussions 183 197-215 (2015).

15. Rabaev, M., Landau, M. V., Vidruk-Nehemya, R., Goldbourt, A. and Herskowitz, M., "Improvement of hydrothermal stability of Pt/SAPO-11 catalyst in hydrodeoxygenation-isomerization-aromatization of vegetable oil", Journal of Catalysis 332, 164–176 (2015).

16. Rabaev, M., Landau, M.V., Vidruk-Nehemya, R., Koukouliev, V., Zarchin, R. and M. Herskowitz, "Conversion of vegetable oils on Pt/Al2O3/SAPO-11 to diesel and jet fuels containing aromatics", Fuel 161, 287–294 (2015).

17. Utsis, N., Nehemya Vidruk, R., Landau, M. V. and Herskowitz, M., "Novel bifunctional catalysts based on crystalline multi-oxide matrices containing iron ions for CO_2 hydrogenation to liquid fuels and chemicals", Faraday Discussions 188, 545-563 (2016).

18. Haynes, B.S., Herskowitz, M., Maschmeyer, T., de Nys, R., Yuen, A. K. L., et al "From macroalgae to liquid fuel via waste-water remediation, hydrothermal upgrading, carbon dioxide hydrogenation and hydrotreating", Energy & Environmental Science 9, 1828 – 1840 (2016). Highlighted in Nature Energy, doi:10.1038/nenergy.2016.62

19. Meiri, N., Radus, R and Herskowitz, M. "Simulation of novel process of CO_2 conversion to liquid fuels", Journal of CO_2 Utilization 17, 284–289 (2017).

20. Amoyal, M., Vidruk-Nehemya, R., Landau, M.V. and Herskowitz, M., "Effect of potassium on the active phases of Fe catalysts for carbon dioxide conversion to liquid fuels through hydrogenation", Journal of Catalysis 348, 29–39 (2017).

21. Landau, M.V, Meiri, N., Utsis, N., Vidruk Nehemya, R. and Herskowitz, M., "Conversion of CO_2, CO and H_2 in CO_2 hydrogenation to fungible liquid fuels on Fe-based catalyst", Industrial & Engineering Chemistry Research, 56(45), 13334-13355 (2017).

22. Samanta, A., Landau, M.V., Vidruk-Nehemya, R. and Herskowitz, M., "CO2 hydrogenation to higher hydrocarbons on K/Fe-Al-O spinel catalysts promoted with Si, Ti, Zr, Hf, Mn and Ce", Catalysis Science & Technology, 7, 4048–4063 (2017).

23. Rabaev, M., Landau, M.V., Vidruk-Nehemya, R., Koukouliev, V., Zarchin, R. and M. Herskowitz, "Production of aromatic drop-in jet and diesel fuel from vegetable oils", Proceedings of International Conference on Stability, Handling and Use of Liquid Fuels, 14th, Charleston, SC, United States, Oct. 4-8, 2015, 1-13 (2017).

24. Utsis, N., Landau, M. V., Erenburg, A., Vidruk-Nehemya, R. and Herskowitz, M., "Performance of Reverse Water Gas Shift on Coprecipitated and C-Templated BaFe-Hexaaluminate: The Effect of Fe Loading, Texture, and Promotion with K", ChemCatChem, 10, 3795– 3805 (2018).

25. Ohayon Dahan, H., Porgador, B., Landau, M.V. and Herskowitz, M., "Conversion of hydrous bio-ethanol on ZnxZryOz catalyst to renewable liquid chemicals and additives to gasoline", Fuel Processing Technology 198, 106246 (2020).

26. Elishav, O., Shener, Y., Beilin, V., Landau, M.V., Herskowitz, M., Shter, G. and Grader, G.S., "Electrospun Fe-Al-O Nanobelts for Selective CO2 Hydrogenation to Light Olefins", ACS Applied Materials & Interfaces 12(22), 24855-24867 (2020).

27. Elishav, O., Shener, Y., Beilin, V., Shter, G. E., Ng, B., Mustain, W. E., Landau, M. V., Herskowitz, M. and Grader, G. S., "Electrospun Nanofibers with Surface Oriented Lamellar Pattern and Potential Applications", Nanoscale 12(24), 12993-13000 (2020).

28. Utsis, N., Miron, M.V., Erenburg, A. and Herskowitz, M. "Reverse Water Gas Shift by Chemical Looping with Iron-Substituted Hexaaluminate Catalysts", Catalysts 10, 1082 (2020).

29. Kulkarni, A. P., Hos, T., Landau, M.V., Fini, D., Giddey, S. and Herskowitz, M. "Techno-Economic Analysis of a Sustainable Process for Converting CO_2 and H_2O to Feedstock for Fuels and Chemicals", Sustainable Energy Fuels 5, 486-500 (2021).

30. Ohayon Dahan, H., Landau, M.V., Herskowitz, M. "Effect of surface acidity-basicity balance in modified $Zn_xZr_yO_z$ catalyst on its performance in the conversion of hydrous ethanol to hydrocarbons", Journal of Industrial and Engineering Chemistry 95, 156-169 (2021).

31. Landau, M. V., Hos, T., Vidruk Nehemya, R., Nomikos, G. and Herskowitz, M. "Eco-Friendly and Sustainable Process for Converting Hydrous Bioethanol to Butanol", Catalysts 11, 498 (2021)

32. Hos, T., Herskowitz, M., "Utilization of CO-rich waste gases from the steel industry for production of renewable liquid fuels", Energy Conversion and Management 240, 114233 (2021)

33. Ohayon Dahan, H., Landau, M.V., Vidruk Nehemya, R., Edri, E., Herskowitz, M., Ruan, C. and Li, F. "Core-Shell Fe_2O_3@$La_{1-x}Sr_xFeO_{3-\delta}$ Material for Catalytic Oxidations: Coverage of Iron Oxide Core, Oxygen Storage Capacity and Reactivity of Surface Oxygens", Materials 14, 7355 (2021).

34. Hos, T., Landau, M.V. and Herskowitz, M. "Hydrogenation of CO_2 on Fe-Based Catalysts: Preferred Route to Renewable Liquid Fuels", Industrial & Engineering Chemistry Research 61(29), 10387-10399 (2022).

35. Ohayon Dahan, H, Sror, G., Landau, M.V. and Herskowitz, M. "Chemical looping reaction of methane with oxygen from $La_{0.8}Sr_{0.2}FeO_{3-\delta}$ and $La_{0.8}Sr_{0.2}FeO_{3-\delta}$ -Fe_2O_3 systems to syngas, Discover Chemical Engineering, 2, 3 (2022).

36. Hos, T., Herskowitz, M., "Techno-economic Analysis of Biogas Conversion to Liquid Hydrocarbon Fuels through Production of Lean-Hydrogen Syngas" ACS Engineering Au 2(5), 450-460 (2022).

37. Yevilevich, Y., Vradman, L., Zana, J., Weinstock, I. A. and Herskowitz, M., "Investigation into La(Fe/Mn)O3 Perovskites Formation over Time during Molten Salt Synthesis" Inorganic Chemistry 61(17), 6367-6375 (2022).

38. Hen Ohayon Dahan, Gal Sror, Miron V. Landau, Eran Edri, and Moti Herskowitz, "Selective Partial Oxidation of Methane with CO_2 Using Mobile Lattice Oxygens of LSF", ACS Engineering Au 3, 265−277 (2023).

39. G. Sror, O. Cohen, H. Ohayon Dahan, M. V. Landau and M. Herskowitz, "Methane conversion to syngas by chemical looping on $La_{0.8}Sr_{0.2}Fe_xCo_{1-x}O_3$ (x = 0, 0.25, 0.50, 0.75) perovskites with CO_2 co-feeding" Discover Chemical Engineering, 3, 17 (2023).

40. Tomy Hos, Gal Sror, Moti Herskowitz, “Autothermal reforming of methanol for on-board hydrogen production in marine vehicles”, International Journal of Hydrogen Energy 49 (2024) 1121 – 1132

41. Gal Sror, Leonid Vradman, Miron V. Landau, Moti Herskowitz, “Performance of $LaFeO_3$ and $La_{0.8}Sr_{0.2}FeO_3$ perovskites in Reverse Water-Gas Shift”, Journal of Environmental Chemical Engineering 13 (2025) 115421

Selected Patents relevant to Alternative Fuels (out of 27 patents)

1. Berhmann, W.C., Mauldin, C.H., Arcuri, K. and Herskowitz, M. “Surface-supported particulate metal compound catalysts, their preparation and their use in hydrocarbon synthesis reactions", EP0266898 (1988), Assignee: Exxon Research and Engineering Co.

2. Herskowitz, M., "Method for Hydrocarbon Synthesis Reactions", US 5,652,193 (1997), Assignee: Exxon Research and Engineering Co.

3. Landau, M.V. and Herskowitz. M., "Process and Catalysts for the Production of Motor Fuels from Shale Oils", WO 9719150 (1997).

4. Kaliya, M., Landau, M.V. and Herskowitz, M., "Catalyst for Oxidative Dehydrogenation of Paraffinic Hydrocarbons and Use of this Catalyst", EP804287B1 (1998).

5. Herskowitz, M., Landau, M. and Kaliya, M., “Catalyst for oxidative dehydrogenation of paraffinic hydrocarbons and use of this catalyst” US 6130183 (2000).

6. Herskowitz, M. and Kogan S., “Catalysts for Converting Paraffinic Hydrocarbons into Corresponding Olefins”, EP1051252A1 (2000).

7. Berhmann, W.C., Mauldin, C.H., Arcuri, K. and Herskowitz, M., "Method for Hydrocarbon Synthesis Reactions", US 6,319,960 (2001). Assignee: Exxon Research and Engineering Co.

8. Herskowitz, M. and Kogan, S., “Catalysts for converting paraffinic hydrocarbons into corresponding olefins”, US 6414209 (2002).

9. Wiesman, Z., Herskowitz, M., Grinberg, S., **"**Production of biodiesel from Balanites aegyptiaca",WO2006126206 (2006).

10. Landau, M., Herskowitz, M., Reizner, I., Hou, Z. and Kegerreis, J. E. "Process for removing sulfur compounds from hydrocarbon streams and adsorbent used in this process "US 7897538 (2011), Assignee: ExxonMobil Research and Engineering Company.

11. Landau, M.V., Herskowitz, M., Reizner, I., Konra, Y., Gupta, H., Agnihotri, R. Berlowitz, P.J., Kegerreis, J.E. “Process for adsorption of sulfur compounds from hydrocarbon streams” US 8,524,071 (2013), Assignee: ExxonMobil Research and Engineering Company.

12. Herskowitz, M., Landau, M.V., Reizner, I. and Kaliya, M. "Production of diesel fuel from vegetable and animal oil" US 8,142,527 (2012).

13. Herskowitz, M., Landau, M., Reizer, I., Ravella, A. and Kegerreis, J.E. “Novel adsorbent for ultra-deep removal of sulfur compounds from distillate fuels” US 8,877,153 (2014), Assignee: ExxonMobil Research and Engineering Company.

14. Landau, M., Herskowitz, M. and Vidruk, R., "A catalyst and a process for catalytic conversion of

carbon dioxide-containing gas and hydrogen streams to hydrocarbons", US 9,522,386 B2 (2016).

15. Landau, M., Herskowitz, M., Rabaev, M. and Vidruk, R., “Catalysts based on silico-aluminophosphate SAPO-11 and uses thereof”, US 10,399,067 (2019).
16. Herskowitz, M., Landau, M., Vidruk, R., Amoyal, M., "Catalyst composition and catalytic processes for producing liquid hydrocarbons", US 10,589,257 (2020).
17. Herskowitz, M and Hos, T., "Novel, highly efficient, eco-friendly processes for converting CO_2 or CO-rich streams to liquid fuels and chemicals", US Patent 10,865,107 (2020).
18. Herskowitz, M., Hos, T., Landau, M., Vidruk, R., “Versatile and flexible, environmentally friendly and economically viable process for converting sour natural gas to sweet natural gas, green hydrogen and carbon disulfide”, WO 2023161927 A1 (2023).

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