CURRICULUM VITAE

Enrique Iglesia

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Research group: iglesia.purdue.com; iglesia.cchem.berkeley.edu

BIRTH DATE: August 27, 1954, Havana, Cuba

EDUCATION: **Ph.D., Chemical Engineering**, 1982; **Stanford University**
(Professor Michel Boudart)
Dissertation: "Catalytic and Temperature-Programmed Decomposition of Formic Acid on Copper, Nickel, and Copper-Nickel Alloys"

Master of Science, Chemical Engineering, 1979; **Stanford University**

Bachelor of Science, Chemical Engineering, 1977; **Princeton University** s*umma cum laude* (highest ranking graduate in School of Engineering and Applied Sciences) Thesis: *"The Permeation of Hydrogen Isotopes through Stainless Steels"*

PROFESSIONAL EXPERIENCE:

Purdue University
Michel Boudart Distinguished Professor (2023-date)
Davidson School of Chemical Engineering
Presidential Advisor for Energy Transitions (2023-date)

University of California at Berkeley
Distinguished Professor of the Graduate School (2022-date)
Distinguished Professor of Chemical Engineering (2019-2022)
Theodore Vermeulen Chair in Chemical Engineering (2009-2022; Emeritus Chir)
Chancellor Professor (2005-2009)
Professor of Chemical Engineering (1993-2022)
Director, Berkeley Catalysis Center (2006-2016)

Laboratory Fellow, Pacific Northwest National Laboratory
U.S. Department of Energy (2019-2023)

Faculty Senior Scientist, E.O. Lawrence Berkeley National Laboratory
U.S. Department of Energy (2005-2019)

Exxon Research and Engineering Co., Corporate Research Laboratories
Research Associate; Head, Catalysis Science (1982-1993)

Stanford University
Consulting Professor of Chemical Engineering **(**1988-1993)

HONORS AND AWARDS

Academies and Honorary Degrees

Member, Real Academia de Ciencias, Spain (2021)
Doctor Honoris Causa**,** Technical University of Munich (2018)
Member, National Academy of Inventors (2016)
Member, American Academy of Arts and Sciences (2015)
Honorary Fellow, Chinese Chemical Society (2013)
Member, National Academy of Engineering (2008)
Doctor Honoris Causa**,** Universidad Politecnica de Valencia (2007)
Honorary Professor, Universidad Nacional del Litoral (Argentina) (2006)

Research

Faraday Lectureship Prize, Royal Society of Chemistry (2023)
Fellow, Royal Society of Chemistry (2022)
NACS Award for Distinguished Service in the Advancement of Catalysis, North American Catalysis Society (2021)
E.V. Murphree Award for Industrial and Engineering Chemistry, American Chemical Society (2020)
Michel Boudart Award for the Advancement of Catalysis, North American Catalysis Society and European Federation of Catalysis Societies (2019)
William H. Walker Institute Award for Excellence in Contributions to the Chemical Engineering Literature, American Institute of Chemical Engineers (2018)
Fellow, American Institute of Chemical Engineers (2014)
Fellow, Japan Society for the Promotion of Science (2013)
ENI Prize, New Frontiers in Hydrocarbons (2012)
Gabor Somorjai Award for Creative Research in Catalysis, American Chemical Society (2012)
Francois Gault Lectureship Award, European Federation of Catalysis Societies (2011)
Alpha Chi Sigma Institute Award, American Institute of Chemical Engineers (2011)
Cross Canada Lectureship Award, Chemical Institute of Canada (2011)
Fellow, American Chemical Society (2010)
Tanabe Prize in Acid-Base Catalysis (2009)
Humboldt Senior Scientist Research Award, Alexander von Humboldt Foundation (2007)
Robert Burwell Lectureship Award, North American Catalysis Society (2006)
George A. Olah Award in Hydrocarbon Chemistry, American Chemical Society (2005)

Award for Excellence in Natural Gas Conversion (2004)
Richard H. Wilhelm Institute Award in Chemical Reaction Engineering, American Institute of Chemical Engineers (2003)
Paul Emmett Award in Fundamental Catalysis; North American Catalysis Society (1997)
Award for Excellence in Catalysis and Eminent Visitor Award, Chemical Society of South Africa (1998)
1992 Golden Tiger Award (Annual Exxon Award for: "Inspirational Leadership and Outstanding Contributions in Catalytic Science and Technology")
Silver Medal of the Royal Society of Arts (1977, highest-ranked graduating senior in the Schools of Engineering and Architecture, Princeton University)
Phi Beta Kappa (1977); **Tau Beta Pi** (1976; Princeton Chapter President, 1976-77)

Teaching

Best Teacher Award, College of Chemistry, University of California at Berkeley (2010)
Donald Sterling Noyce Prize for Excellence in Undergraduate Teaching, University of California (2005) (highest teaching award in the physical sciences at Berkeley)
Best Teacher Award, Berkeley Chapter, American Institute of Chemical Engineers (1999)
AIChE Award for Chemical Engineering Excellence in Academic Teaching (California Chapter) (1995-96)

LECTURESHIPS AND PROFESSORSHIPS

Peiyang Lcturer, Tianjin University (2025)
Barrer Lecturer, Penssylvannia State University (2024)
Katz Lecturer, University of Michigan (2023)
Neil Armstrong Distinguished Lecturer, Purdue University (2023)
Pregl Lecturer, National Institute of Chemistry, Slovenia (2023)
Patten Distinguished Lecturer, University of Colorado-Boulder (2022)
2021 Overseas Distinguished Lecturer, Peking University (2021)
BASF Distinguished Lecturer, Wayne State University (2020)
Holtz Lecturer, Johns Hopkins University (2020)
Neil Armstrong Distinguished Visiting Professorship, Purdue University (2018)
Wolfgang Sachtler Inaugural Lecturer, Northwestern University (2017)
T.W. Leland Lecturer, Rice University (2017)
Eastman Chemicals Lecturer, University of Virginia (2016)
UCR Distinguished Lecturer, University of California-Riverside (2016)
Cary Lecturer, Georgia Institute of Technology (2015)
Lanning Distinguished Lecturer, Washington State University (2015)
Lowrie Lecturer, Ohio State University (2015)
Richard H. Wilhelm Lecturer, Princeton University (2014)
Kelly Lecturer, Purdue University (2014)
Gaden Lecturer, Columbia University (2013)
Dow Lecturer, Carnegie Mellon University (2013)

Xingda Lecturer, Peking University (2013)
Vladimir Haensel Lecturer, UOP (2013)
Wohl Lecturer, University of Delaware (2012)
Fellow, Technical University of Munich, Institute for Advanced Studies (2012)
David Mason Lecturer, Stanford University (2012)
UOP Invitational Lecturer, UOP (2011)
Sussman Lecturer, Tufts University (2010)
William Flowers Hand Lecturer, Mississippi State University (2010)
ExxonMobil Lecturer, University of Massachusetts (2009)
Distinguished Lindsay Lecturer, Texas A&M University (2009)
Hess Lecturer, University of Virginia (2009)
Texas Distinguished Faculty Lecturer, University of Texas-Austin (2008)
Pfizer Lecturer, Purdue University (2007)
Sasol Lecturer, University of Ottawa (2006)
Honorary Professor, Universidad Nacional del Litoral, Santa Fe, Argentina (2005)
V.N. Ipatieff Professorship, Northwestern University (2004/2005)
Wilhelm Manchot Chemistry Professorship, Technical University of Munich (2004)
Hwa-Ying Visiting Scholar, Nanjing, Xiamen, and Tsinghua Universities, China, 2001
Harry G. Fair Memorial Lecture, University of Oklahoma (2000)
Distinguished Lecturer, Departments of Applied Chemistry and Chemical Engineering, University of Toronto (1999)
UOP Invitational Lecturer, UOP (1998)
Visiting Professor, CONICET Distinguished Lecturer, Universidad Nacional del Litoral, Santa Fe, Argentina (1994)
Consulting Professor of Chemical Engineering, Stanford University (1988-1993)

PLENARY AND AWARD LECTURES

Keynote Lecture, CISTAR Meeting, Chicago, IL (2025)
Plenary Lecture, Asia-Pacific Catalysis Society Meeting, Singapore (2025)
Plenary Lecture, 100 Years of the Fischer-Tropsch Process, Mülheim an der Ruhr (2025)
Faraday Lectureship Prize, Royal Society of Chemistry, London, UK (2024) (presented at Liverpool, Cardiff, Leeds, Oxford Univesitites and Imperial College London)
Plenary Lecture, XII Symposium, Catalysis Society of Colombia (virtual) (2022)
Plenary Lecture, Annual Congress, Mexican Academy of Catalysis (virtual) (2021)
William H. Walker Institute Award Lecture, Annual Meeting of the American Institute of Chemical Engineers, San Francisco CA (2020).
E.V. Murphree Award Lecture, American Chemical Society Meeting (2020)
Distinguished Overseas Plenary Lecturer, Beijing, China (2021)
Michel Boudart Award Plenary Lecture, North American Meeting, Catalysis Society, Chicago IL (2019).
Michel Boudart Award Plenary Lecture, Europacat, Aachen, Germany (2019).
Plenary Lecture, Natural Gas Conversion Symposium, San Antonio, TX (2019).
Otto Fischer Centennial Symposium and Honorary Doctorate Plenary, Munich, Germany (2018).

Plenary Lecture, Nordic Catalysis Society Annual Meeting, Oslo, Norway (2017).
Plenary Lecture, Discussions Faraday Society, Cape Town, South Africa (2017).
Opening Plenary Lecture, SECAT, Oviedo, Spain (2017).
International Symposium on Chemical Reaction Engineering, Minneapolis, MN (2016).
Plenary Lecture, International Conference on Chemical Kinetics, Ghent, Belgium (2015).
Plenary Lecture, International Conference on Environmental Catalysis, Asheville, NC (2014).
Francois Gault Award Plenary Lecture, Europacat, Lyon, France (2013).
Alpha Chi Sigma Award Lecture, Annual Meeting of the American Institute of Chemical Engineers, Pittsburgh, PA (2012)
Gabor Somorjai Award Lecture, American Chemical Society Meeting, San Diego, CA (2012)
ENI Prize Plenary Lecture, University of Naples, Naples Italy (2012).
Plenary Lecture, Cat4Bio Conference, Thessaloniki, Greece (2012).
Plenary Lecture, Canadian Symposium on Catalysis, Banff, Canada (2010).
Opening Plenary Lecture, Iberoamerican Catalysis Congress, Vina del Mar, Chile (2010).
Kozo Tanabe Prize Plenary Lecture, International Acid-Base Catalysis Conference, Genova, Italy (2009).
Plenary Lecture, Europacat, Salamanca, Spain (2009).
Plenary Lecture, Fifth Tokyo Conference on Advanced Catalytic Science and Technology, Tokyo, Japan (2006).
Plenary Lecture, 12th Nordic Symposium on Catalysis, Trondheim, Norway (2006).
Opening Plenary Address, Fifth Tokyo Conference on Advanced Catalytic Science and Technology (TOCAT-5), Tokyo, Japan (2006).
Opening Plenary Address, International Symposium on "Perspectives on Heterogeneous Oxidation Catalysis", Sapporo, Japan (2005).
Manchot Chemistry Prize Address, Technical University of Munich, Munich, Germany (2005).
Opening Plenary Lecture, 6th International Symposium on Acid-Base Catalysis, Puerto Vallarta, Mexico (2005).
George A. Olah Award Lecture, American Chemical Society Meeting, San Diego, CA (2005).
Opening Plenary Lecture, XIV Argentinian Catalysis Congress, Santa Fe, Argentina (2005).
V.N. Ipatieff Award Address, Northwestern University, Evanston, IL (2005).
Natural Gas Conversion Symposium. Award and Opening Plenary Lecture, 7th International Natural Gas Conversion Symposium, Dalian, China (2004).
Richard H. Wilhelm Award Lecture, Annual Meeting of the American Institute of Chemical Engineers, Austin, TX (2004)
Plenary Lecture, Oxide-Based Systems at the Crossroads of Chemistry Comference, Como, Italy (2004)).
Plenary Lecture, 13th International Congress on Catalysis, Paris, France (2004).
Plenary Lecture, XIX Iberoamerican Catalysis Congress, Merida, Mexico, (2004).
Opening Plenary Lecture, 12th Brazilian Catalysis Congress, Angra dos Reis, Brazil (2003).
Opening Plenary Lecture, 12th National Chinese Conference on Catalysis, Hangzhou, China (2002).
Opening Plenary Lecture, International Symposium on Catalytic Science and Technology Marching into the New Century, Xiamen, China (2001).
Plenary Lecture, 16th Canadian Catalysis Symposium, Banff, Alberta, Canada (2000).
Opening Plenary Lecture, International Congress on Catalytic Membrane Reactors, Zaragoza, Spain (2000).

Plenary Lecture, International Symposium on Acid-Base Catalysis-III, Rolduc, Germany (1997).
Emmett Award Lecture, 15th North American Meeting of the Catalysis Society, Chicago, IL (1997).
Plenary Lecture, Asia-Pacific Congress on Catalysis (APCAT'97), Seoul, Korea (1997).
Opening Plenary Lecture, XV Iberoamerican Congress on Catalysis, Cordoba, Argentina (1996).
Plenary Lecture, 4th International Natural Gas Conversion Symposium, Kruger, South Africa (1995).

SERVICE TO PROFESSIONAL SOCIETIES

Chemical Engineering in the 21st Century, National Academies Studies Report, Panel/Committee Member (2020-2021)
17th International Congress on Catalysis, Meeting Chair (2020)
DOE Basic Research Needs: Cayalysis, Panel/Committee Chair (2017-2018)
11th International Congress on Catalysis, Executive Organizing Committee and Program Co-Chair (1996)
6th International Natural Gas Conversion Symposium, Meeting Co-Chair and Technical Program Chair (2001)
7th International Natural Gas Conversion Symposium, Technical Program Chair (2004)

National Academy of Engineering
Chair, Section 3 (2020)
Vice Chair, Section 3 (2019)
Chair, Canvassing Committee (2018)
Vice Chair, Canvassing Committee (2017)
Section 3 Peer Committee (2011-2014)

International Association of Catalysis Societies
Vice-President (2016-2022)
President (2020-2024; 2022, resignation in protest of unappoved violations of succession rules)
Meeting Chair, International Congress on Catalysis (2016-2020)

North American and Catalysis Society
Director-at-Large (2025-2029)
Board Member (2017-date)
President (2009-2017)
Vice-President (2005-2009)
California Catalysis Society Representative to National Society (1999-2005)
Meeting Co-Chair; 2009 North American Meeting of the Catalysis Society (2009)

American Institute of Chemical Engineers
Director, Catalysis and Reaction Engineering Division (1997-2001)
Awards Committee Chair, Catalysis and Reaction Engineering Division (1998-99)

Walker, Alpha Chi Sigma, Colburn, Wilhelm Award Sub-Committees (1997-date)

American Chemical Society

Chairman, Division of Petroleum Chemistry (1995-96)
Chairman-Elect and Program Chairman, Division of Petroleum Chemistry (1994) Chairman, Program Committee, and Member, Executive Committee, Division of Petroleum Chemistry (1991-1993); Coordinator, Catalysis Symposia, Division of Colloid and Surface Chemistry (1991-1993); Delegate, Catalysis Secretariat (1992-1997); Member, Long Range Planning Committee, Petroleum Chemistry (1995-1998).

EDITORIAL ACTIVITIES

Editor-in-Chief, **Journal of Catalysis** (1997-2010)

Associate Editor, **"Encyclopedia of Catalysis"** Wiley (2002) (2003 Award for Best Multi-Volume Reference from the Association of American Publishers)

Guest Editor**, Topics in Catalysis**, Vol. 2 (1995)

Editor, "Synthesis and Properties of Advanced Catalytic Materials," **Materials Research Society Symposium** Proceedings (Iglesia, E., Lednor, P.W., Nagaki, D., and Thompson, L.T. Eds.) , Vol. 368 (1995)

Editor, **Proceedings of the 11th International Congress on Catalysis; Studies in Surface Science and Catalysis** (Hightower, J.W., Delgass, W.N., Iglesia, E., and Bell, A.T., Eds.), Academic Press (1996)

Editor, **Proceedings of the 6th Natural Gas Conversion Symposium: Studies in Surface Science and Catalysis** (Iglesia, E., Spivey, J.J., and Fleisch, T.H., Eds.), Elsevier (2001)

Editorial Advisory Board, **Encyclopedia of Nanoscience and Nanotechnology**, Marcel Dekker (2003)

Editorial Advisory Boards

Journal of Catalysis (2010-date)
Advances in Catalysis (2007-date)
Journal of Energy Chemistry (2012-date)
Catalysis Book Series, Royal Society of Chemistry (2007-date)
Catalysis Monograph Series (Imperial College Press) (2001-date)
Catalysis Surveys (Japan) (1998-date)
Industrial Catalysis News (1998-2001)
Catalysis Today (1993-1998)
Energy and Fuels (1997-2001)

CONSULTING AND ADVISORY ACTIVITIES

Scientific Advisory Board**, Nanogap. (2023-date)**
Co-Author, **National Academies Report**, "Future Directions in Chemical Engineering" (2022)
Technology Advisory Council, Non-Executive Director, **BP p.l.c (2007-2015)**
Panel Co-Chair, "Report on Basic Research Needs-Catalysis", **U.S. Department of Energy** (2018)
Advisory Board, **Norwegian National Catalysis Institute** (2017-date)
Member, **ENI Prize Selection Committee** (2014-2021)
International Technology Advisory Board, **World Gold Council (2010-date)**
Advisory Board, **German Society of Petroleum and Coal Science and Technology (DGMK)** (2017-date)
Fachbeirat, **Fritz Haber Institute, Max Planck Gesellschaft (2005-2012)**
Advisory Board, College of Engineering, **Stanford University (2010-date)**
Scientific Advisory Board**, Nanostellar, Inc. (2004-2009)**
Scientific Advisory Board**, Range Fuels. (2006-2010)**
Senior Scientific Advisor, **Catalytica, Inc. (1995-2001)**
Senior Scientific Advisor, **Catalytica Advanced Technologies (1997-2001)**
Senior Scientific Advisor, **Catalytica NovoTec (1999-2002)**
Consultant**: BP, ExxonMobil, Nanogap, Vertellus, Nanostellar, Novodynamics, Novotec, Catalytica Energy Systems, Range Fuels, UPM, Honeywell/UOP**
Advisory Board, **International Conference on Environmental Catalysis** (2000-date)
Advisory Board, **Natural Gas Conversion Symposium** (1996-2010); Chair (2005-2010)
International Scientific Board, **International Congress on Catalysis** (1998-date)
International Scientific Board, **"Oxide-Based Catalysts at the Crossroads of Chemistry",** Como Conference, Como, Italy, October 8-11, 2000
National Research Council Standing Committee, U.S. Department of Energy Vision 21 Research and Development Program (2002-date)
International Advisory Board, **World Congress on Oxidation Catalysis** (2003-date).
Scientific Advisory Board**, International Symposium Acid-Base Catalysis (2002-date)**
Advisory Board**, Asia Pacific Catalysis Conferences** (1997-date)

BIOGRAPHICAL NOTE

Enrique Iglesia

Enrique Iglesia received a B.S. from Princeton University (1977, summa cum laude) and a Ph.D. from Stanford University (1982) in Chemical Engineering, with Professor Michel Boudart as his mentor and in the areas of catalysis and chemical reaction engineering. In 1993, he joined the University of California at Berkeley as Professor of Chemical Engineering, after twelve years of research and management experience at the Exxon Corporate Research Laboratories, where he ultimately led the Catalysis Research Section with stewardship responsibility for the deployment of catalytic technologies in the downstream and chemicals sectors of Exxon Corporation.

He is currently the Michel Boudart Distinguished Professor in the Davidson School of Chemical Engineering and the Presidential Fellow on Energy Transitions at Purdue University. He is also the Theodore Vermeulen Chair (emeritus) in Chemical Engineering and a Distinguished Professor of the Graduate School at the University of California at Berkeley. He has held positions as Laboratory Fellow at the Pacific Northwest National Laboratory and as Faculty Senior Scientist at the E.O. Lawrence Berkeley National Laboratory of the U.S. Department of Energy.

He holds *doctor honoris causa* degrees from the Universidad Politecnica de Valencia and the Technical University of Munich. He is a member of the National Academy of Engineering, the American Academy of Arts and Sciences, the National Academy of Inventors, and the Real Sociedad de Ciencias Exactas (Spain). He is a Fellow of the American Chemical Society (ACS), the American Institute of Chemical Engineers (AIChE), and the Royal Society of Chemistry and one of nearly 100 scientists chosen as Honorary Fellows of the Chinese Chemical Society. He has served as Editor-in-Chief of Journal of Catalysis (1997-2013) and as a member and chair of committees addressing “Basic Research Needs in Energy” and “Future Directions in Chemical Engineering”, sponsored by the U.S. Department of Energy and the National Academies. He has served as Vice-President and President of the North American Catalysis Society and as Vice-President and President-Elect of the International Association of Catalysis Societies.

His research has been recognized with the George A. Olah Award in Hydrocarbon Chemistry, the Gabor Somorjai Award for Creative Research in Catalysis, and the E.V. Murphree Award for Industrial and Engineering Chemistry of the American Chemical Society. He has received the Richard H. Wilhelm Award in Chemical Reaction Engineering, the Alpha Chi Sigma Award for Outstanding Research in Chemical Engineering, and the William H. Walker Award for Excellence in Contributions to the Chemical Engineering Literature from the American Institute of Chemical Engineers. The North American Catalysis Society has recognized the scientific achievements of his research group with the Paul H. Emmett Award in Fundamental Catalysis, the Robert Burwell Lectureship, the Award for Distinguished Service in the Advancement of Catalysis, and, jointly with the European Federation of Catalysis Societies, with the Michel Boudart Award for the Advancement of Catalysis. The latter society also recognized him with the Francois Gault Lectureship, the only recipient from outside Europe in its history. His conceptual and practical contributions to catalysis were noted by the Kozo Tanabe Prize in Acid-Base Catalysis, the ENI Frontiers in Energy Prize, and the Award for Excellence in Natural Gas Conversion. He was named the V.N. Ipatieff Distinguished Professorship at Northwestern University, the Neil Armstrong

Distinguished Fellow at Purdue University, and the Cross Canada Lecturer by the Chemical Institute of Canada.

His teaching awards include the Donald Sterling Noyce Prize, the highest recognition in the Berkeley campus for teaching excellence in the physical sciences, as well as the Best Teacher Award of the College of Chemistry on three separate occasions and the Award for Excellence in Teaching of the American Institute of Chemical Engineers. He has served the National Academies as member of panels for the National Research Council and of the Peer Committee and as Chair and Vice Chair of the Nominations Committee and of the Chemical Engineering Section of NAE.

He has coauthored more than 360 publications and nearly 50 U.S patents. His conceptual and practical contributions to catalysis and chemical reaction engineering address some of the most significant challenges in energy conversion and use, in the synthesis of chemicals and intermediates, and in the protection of the environment through kinetic, spectroscopic, isotopic and theoretical methods and novel catalyst architectures. His research group addresses the design, synthesis, and structural and mechanistic characterization of inorganic solids useful as catalysts for chemical reactions important in the production, conversion, and use of energy carriers, in sustainable petrochemical syntheses, and in the protection of the environment. These studies exploit novel synthetic protocols for the synthesis of active nanostructures and of isolated single-site catalysts within microporous and mesoporous solids, as well as techniques for the characterization of the local structure and atomic connectivity in these inorganic solids, in most instances during catalytic reactions. These studies also involve steady-state and transient kinetic methods and isotopically labeled reactants and products in order to elucidate the mechanism of catalytic reactions on surfaces, at the level of primary and secondary reaction networks and of elementary surface steps using a seamless combination of systematic experimental assessments benchmarked against rigorous analysis by density functional theory and higher-level theoretical methods. The relevance of his research to the practice of catalysis is evident from his many patents, several of which have provided enabling intellectual property for processes involved in the conversion of natural gas, in applications of zeolite catalysis to petrochemicals synthesis and environmental control, and in the conversion of renewable oxygenate feedstocks to fuels and chemicals.

365+ refereed publications; 53 Patents; 4 edited works, 49,000 citations; h-index 123 (Google Scholar); >100 citations per article; 550 scientific presentations; 100+ keynote/plenary/named lectures.

List of Publications and Patents

BOOKS EDITED

Encyclopedia of Catalysis, Horvath, I.T., Iglesia, E., Klein, M.T., Lercher, J.A., Russell, A.J., and Stiefel, E.I., Eds. John Wiley and Sons, Inc., New York (2002).

Natural Gas Conversion: VI, Iglesia, E., Spivey, J.J., Fleisch, T.H., Elsevier (2001)

Proceedings 11th International Congress on Catalysis, Hightower, W., Delgass, W.N., Bell, A.T., Iglesia, E., Elsevier (1996)

"Synthesis and Properties of Advanced Catalytic Materials", Iglesia, E., Lednor, P.W., Nagaki, D.A., Thompson, L.T., Editors, Materials Research Society (1995).

PUBLICATIONS

372. Chen, S., Zhang, Z., Otto, T., and Iglesia, E., **Journal of Catalysis (submitted)** ("Elementary Steps and Bifunctional Scavenging Pathways in Catalytic Methylcyclohexane Dehydrogenation on Dispersed Pt Nanoparticles")

371. Hwang, A., Getsoian, A., Wu, J., and Iglesia, E., **Central Science (submitted) (**"Non-equilibrium Thermodynamic Treatment of Lattice Diffusion Dynamics in Ceria-Zirconia"*)*

370. Artsiusheuski, M.A., Jaegers, N.R., Lizandara Pueyo, C., and Iglesia, E., **Angewandte Chemie (submitted**) ("Selective Ethylbenzene Dehydrogenation to Styrene at Lewis Acid-Base Site Pairs on Zirconia Surfaces")

369. Zhang, Z., Chen, S., and Iglesia, E., **ACS Catalysis 15 (2024) 676** ("Elementary Steps, Site Requirements, and Support Effects in Methylcyclohexane Dehydrogenation on Dispersed Pd Nanoparticles"). DOI: 10.1021/acscatal.4c07240

368. Hu, W., Tate, G., and Iglesia, E., **Central Science (submitted)** ("Kinetic Assessment and Mechanistic Analysis in CO_2 Hydrogenation on Dispersed Ru, Co, and Ni Nanoparticles")

367. Jaegers, N.R., Artsiusheuski, M., Danghyan, V., Shangguan, J., Lizandara Pueyo, C., and Iglesia, E., **ACS Catalysis (accepted) (2025)** ("Catalytic Hydrogenation Reactions on Lewis Acid-Base Pairs and Mechanistic and Thermodynamic Links to Dehdydrogenation Recations")

366. Hu, W., Tate, G., and Iglesia, E., **Journal of the American Chemical Society (2025)** ("Selectivity Control in CO_2-H_2 Reactions on Ru, Co, and Ni Nanoparticles through Tailoring of CO Concentration Gradients at Bed and Aggregate Scales") DOI: 10.1021/jacs.5c04698

365. Hwang, A., Geosoian, A., and Iglesia, E., **ACS Catalysis 14 (2024) 16184** ("Kinetics, Mechanism, and Thermodynamics of Ceria-Zirconia Reduction") DOI: 10.1021/acscatal.4c04771

364. Liu, Y., Luo, C., Iglesia, E., and Liu, H **Journal of the American Chemical Society 146 (2024) 35185** ("Acid Catalysis Mediated by Aqueous Hydronium Ions Formed by Contacting Zeolite Crystals with Liquid Water") DOI: 10.1021/jacs.4c11705

363. Hu, W. and Iglesia, E., **Journal of the American Chemical Society 146 (2024) 22064** ("Dynamics of Elementary Steps on Metal Surfaces at High Coverages:The Prevalence and Kinetic Competence of Contiguous Bare-Atom Ensembles"). DOI: 10.1021/jacs.4c07788.

362. Jaegers, N.R., Danghyan, V., Shangguan, J., Lizandara Pueyo, C., and Iglesia, E., **Journal of the American Chemical Society 146 (2024) 25710** ("Hterolytic C-H Activation Routes

in Catalytic Dehydrogenation of Alight Alkanes on Lewis Acid-Base pairs at ZrO_2 Surfaces) DOI: 10.1021/jacs.4c07766

361. Hwang, A., Klaucke, J., Lizadara-Pueyo, C., Karpov, A., and Iglesia, E., **ChemCatChem (Invited Article) 16 (2024) e202301369 ((Invited Article)** ("Roles of Re and Cs promoters and organochlorine moderators in the synthesis of ethylene oxide processes on Ag-based catalysts"). DOI: 10.1002/cctc.202301369

360. Leung, S. and Iglesia, S., **Journal of Physical Chemistry C 45 (2023) 21881** ("The Mechanism of H/D Exchange in Dihydrogen-Water Mixtures on Pt Nanoparticles") DOI: 10.1021/acs.jpcc.3c04678

359. Hwang, A. Wu, J., Getsoian, A.B., and Iglesia, E., **Journal of Physical Chemistry C 127 (2023) 2923** ("Kinetic Relevance of Surface Reactions and Lattice Diffusion in the Dynamics of Ce–Zr Oxides Reduction–Oxidation Cycles") DOI: 10.1021/acs.jpcc.2c08117

358. Jaegers, N. R. and Iglesia, E., **Journal of the American Chemical Society 145 (2023) 5989.** ("Theoretical Assessment of the Mechanism and Active Sites in Alkene Dimerization on Ni Monomers Grafted onto Aluminosilicates: $(Ni\text{-}OH)^+$ Centers and C-C Coupling Mediated by Lewis Acid-Base Pairs") DOI: 10.1021/jacs.2c13487

357. Mansour, H. and Iglesia, E., **Journal of Physical Chemistry C 127 (2023) 4553** ("Theoretical and Experimental Assessments of Elementary Steps and Bound Intermediates in Catalytic H_2-O_2 Reactions on Dispersed Pt Nanoparticles") DOI: 10.1021/acs.jpcc.2c08826

356. Fischer, A. and Iglesia, E., **Journal of Catalysis 420 (2023) 68** ("The Nature of "Hydrogen Spillover": Site Proximity Effects and Gaseous Intermediates in Hydrogenation Reactions Mediated by Inhibitor-Scavenging Mechanisms") doi: 10.1016/j.jcat.2022.11.013.

355. Kadam, S.A., Hwang, A., and Iglesia, E., **ChemCatChem 14 (2022) e202200059** ("Consequences of Intrapore Liquids on Reactivity, Selectivity, and Stability for Aldol Condensation Reactions on Anatase TiO_2 Catalysts") doi.org/10.1002/cctc.202200059

354. Otto, T., Zhou, X., Zones, S.I., and Iglesia, E., **Journal of Catalysis 410 (2022) 206** ("Synthesis, Characterization, and Function of Au Nanoparticles Encapsulated within TS-1 Zeotype Frameworks as Catalysts for Propene Epoxidation with O_2/H_2O Reactants") doi.org/10.1016/j.jcat.2022.04.002

353. Leung, S.L., Garcia-Dieguez, M., Hibbitts, D., and Iglesia, E., **Journal of Physical Chemistry C 126 (2022) 3923** ("H_2-D_2 Isotopic Exchange Pathways and Thermodynamic Isotope Effects for Hydrogen Chemisorption on Pt Nanoparticles") doi.org/10.1021/acs.jpcc.1c09131

352. Hibbitts, D. and Iglesia E., **Journal of Catalysis 405 (2022) 614** ("The Fischer-Tropsch synthesis: Some enduring mechanistic conundrums revisited") doi.org/10.1016/j.jcat.2021.10.033

351. Ling, T.C., De La Torre, U., Hejazi, A., Kwon, S., and Iglesia, E., **Journal of Catalysis 404 (2021) 814** ("Unimolecular and Bimolecular Formic Acid Decomposition Routes on Dispersed Cu Catalysts") doi.org/10.1016/j.jcat.2021.08.049

350. Mansour, H. and Iglesia, E., **Journal of the American Chemical Society 143 (2021) 11582** ("Mechanistic Connections between CO_2 and CO Hydrogenation on Dispersed Ruthenium Nanoparticles") doi.org/10.1021/jacs.1c04298

349. Yik, E., Wang H., Hibbitts, D., and Iglesia, E., **Applied Catalysis B 291 (2021) 119797 (Invited)** (Hydrogenation and C-S bond Activation Pathways in Thiophene and Tetrahydrothiophene Reactions on Sulfur-Passivated Surfaces of Ru, Pt. and Re nanoparticles") doi.org/10.1016/j.apcatb.2020.119797

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