CURRICULUM VITAE

Enrique Iglesia

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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:

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)
College of Chemistry, University of California at Berkeley

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 (1993-2019)

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

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

Katz Lecturer, University of Michigan (2023)
Neil Armstrong Distinguished Lecturer, Purdue University (2023)
Pregl Lecturer, National Institute of Chemistry, Slovenia (2022)
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)

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

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)
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)**
Technology Advisory Council, **BP p.l.c (2007-2014)**
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 currently holds the title of Distinguished Professor and Theodore Vermeulen Chair in Chemical Engineering at the University of California at Berkeley and the distinction of Laboratory Fellow at the Pacific Northwest National Laboratory of the U.S. Department of Energy. He was a Faculty Senior Scientist at the E.O. Lawrence Berkeley National Laboratory until 2019.

Professor Iglesia has served as the Editor-in-Chief of the Journal of Catalysis (1997-2010), as the Founding Director of the Berkeley Catalysis, as President of the North American Catalysis Society (2009-2017) and ast Vice-President and President-Elect of the International Association of Catalysis Societies. He has also served as Chair of the Chemical Engineering Section of the National Academy of Engineering and in several other leadership position since his election in 2008. He co-chaired the 2001 Natural Gas Conversion Symposium, the 2009 North American Meeting of the Catalysis Society and acted as the Meeting Chair for the 2020 International Congress on Catalysis, the premier world-wide gathering of academic and industrial researchers in the field of catalysis.

Professor Iglesia is a member of the National Academy of Engineering, the highest national distinction conferred upon an engineer. He has also been elected to the American Academy of Arts and Sciences, the National Academy of Inventors, and the Real Academia de Ciencias (Spain). He is a Fellow of the American Chemical Society, the American Institute of Chemical Engineers, and the Royal Sociaty of Chemistry (UK), as well as one of fewer than 100 scientists worldwide named as an Honorary Fellow of the Chinese Chemical Society. He has received a Senior Scientist Award from the Alexander von Humboldt Foundation and Doctor Honoris Causa degrees from the Universidad Politecnica de Valencia and the Technical University of Munich.

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 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.

Professor Iglesia has co-authored more than 350 articles in the leading journals in chemistry and chemical engineering and is a co-inventor of more than 50 patents. 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 treatments. 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.

360 refereed publications; 50 Patents; 4 edited works, 45,000 citations; h-index 115 (Google Scholar); 90 mean 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

360. Fischer, A. and Iglesia, E., **Journal of Catalysis (submitted)** ("Catalytic Hydrogenation of Arenes on Densely-Covered Pt Nanoparticles: Kineticaly-Relevant Steps, Landing Sites, and Unusual Temperature Effects on Turnover Rates")

361. Leung, S. and Iglesia, S., **Journal of the American Chemical Society (submitted)** ("The Mechanism of H/D Exchange in Dihydrogen-Water Mixtures on Pt Nanoparticles")

360. De La Torre, U., Kwon, S., and Iglesia, E., **Applied Catalysis B (submitted)** ("Formic Acid Dehydrogenation on Pt Catalysts: Mechansim and Catalytic Consequences of Co-adsorbed CO")

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 (on line)** ("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** ("Perspectives on "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)** ("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 (in press)** ("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

348. Leung, S. L., Wei, J., Holstein, W. L., Avalos-Borja, M., and Iglesia, E., **Journal of Physical Chemistry C 124 (2020) 20143** (Dynamics and Mechanism of Carbon Filament Formation during Methane Reforming on Supported Nickel Clusters"). doi.org/10.1021/acs.jpcc.0c05590.

347. Kwon, S., Lin, T.C., and Iglesia, E., **Journal of Physical Chemistry C 124 (2020) 20161** ("Formic Acid Dehydration Rates and Elementary Steps on Lewis Acid-Base Site Pairs at Anatase and Rutile TiO_2 Surfaces"). doi.org/10.1021/acs.jpcc.0c05721

346. Deshlahra, P., and Iglesia, E., **Chem. Comm. (Feature Article) 56 (2020) 7371** ("Reactivity Descriptors in Acid Catalysis: Acid Strength, Proton Affinity and Host-Guest Interactions") doi.org/10.1039/d0cc02593c.

344. Kester, P.M., Gounder, R., and Iglesia, E., **Journal of Physical Chemistry C 124 (2020) 15839** ("Alkane Dehydrogenation Catalyzed by Brønsted Acidic and Reaction-Derived Carbonaceous Active Sites in Zeolites") doi.org/10.1021/acs.jpcc.0c01808.

343. Aguirrezabal, I., and Iglesia, E., **Journal of Catalysis 389 (2020) 690** ("Mechanistic insights and consequences of an intrapore liquid phase in ethane, propene, and butane dimerization on Ni(II) cations grafted within ordered aluminosilicate mesopores") doi.org/10.1016/j.jcat.2020.06.038

342. Kwon, S., Lin, T. C., and Iglesia, E., **Journal of Catalysis, 383 (2020) 60** ("Elementary Steps and Site Requirements in Formic Acid Dehydration Reactions") doi.org/10.1016/j.jcat.2019.12.043

341. Garcia-Dieguez, M., Hibbitts, D., and Iglesia, E., **Journal of Physical Chemistry C, 123 (2019) 8447** ('Hydrogen Chemisorption Isotherms on Pt Particles at Catalytic Temperatures: Langmuir and Two-Dimensional Gas Models Revisited") doi.org/10.1021/acs.jpcc.8b10877

340. Kwon, S., Deshlahra, P., and Iglesia, E., **Journal of Catalysis, 377 (2019) 692** ("Reactivity and Selectivity Descriptors of Dioxygen Activation Routes on Metal Oxides") doi.org/10.1016/j.jcat.2019.07.048

339. Noh, G., Zones, S.I., and Iglesia, E., **Journal of Catalysis, 377 (2019) 255** ("Isomer Sieving and the Prevalence of Terminal Methyl Branches in Reactions of Linear Alkanes Within Small Voids Containing Acid Sites") doi.org/10.1016/j.jcat.2019.07.022

338. Herrmann, S.T. and Iglesia, E., **Journal of Catalysis 360 (2018) 66** ("Selective conversion of acetone to isobutene and acetic acid on aluminosilicates: Kinetic coupling between acid-catalyzed and radical-mediated pathways") doi.org/10.1016/j.jcat.2018.01.032

337. Iglesia, E., **Proceedings of the 24th Solvay Conference on Chemistry (2018) 148** ("Consequences of Confinement for Catalysis within Voids of Molecular Dimensions") (https://www.worldscientific.com/worldscibooks/10.1142/10907) doi.org/10.1142/9789813237179_0023

336. Kwon, S., Deshlahra, P., and Iglesia, E., **Journal of Catalysis 364 (2018) 228** ("Dioxygen Activation Routes in Mars-van Krevelen Redox Cycles Catalyzed by Metal Oxides"**)** doi.org/10.1016/j.jcat.2018.05.016

335. Maestri, M. and Iglesia, E., **Physical Chemistry and Chemical Physics 20 (2018) 15725** ("First-Principles Assessment of Catalysis by Confinement: NO Oxidation on Silicate Frameworks Containing Voids of Molecular Dimensions") doi.org/10.1039/C8CP01615A

334. Noh, G., Shi, Z., Zones, S., and Iglesia, E.,**Journal of Catalysis 368 (2018) 389** ("Isomerization and β-Scission Reactions on Bifunctional Metal-Acid Catalysts: Consequences of Confinement and Diffusional Constraints on Reactivity and Selectivity") doi.org/10.1016/j.jcat.2018.03.033

333. Noh, G., Zones, S.I., and Iglesia, E., **Journal of Physical Chemistry C** 122 **(2018) 25475** ("Consequences of acid strength and diffusional constraints for alkane isomerization and β-scission turnover rates and selectivitis on bifunctional metal-acid catalysts") doi.org/10.1021/acs.jpcc.8b08460

332. Otto, T., Zones, S.I., and Iglesia, E., **Microporous and Mesoporous Materials 270 (2018) 10** ("Synthetic Strategies for the Encapsulation of Nanoparticles of Ni, Co, and Fe Oxides within Crystalline Microporous Aluminosilicates") doi.org/10.1016/j.micromeso.2018.04.045

331. Sarazen, M. and Iglesia, E., **ChemCatChem 10 (2018) 4028** ("Effects of Charge, Size, and Shape of Transition States, Bound Intermediates, and Confining Voids in Reactions of Alkenes on Solid Acids") doi.org/10.1002/cctc.201800401

330. Wang, S. and Iglesia, E., **Journal of the American Chemical Society 140 (2018) 775** ("Entropy-Driven High Reactivity of Formaldehyde in Nucleophilic Attack by Enolates on Oxide Catalysts") doi.org/10.1021/jacs.7b11749

329. Yik, E.S. and Iglesia, E., **Journal of Catalysis 368 (2018) 411** ("Mechanism and Site Requirements for Thiophene Desulfurization on Supported Re Domains in Metal or Sulfide Forms") doi.org/10.1016/j.jcat.2018.03.031

328. Sarazen, M.L. and Iglesia, E., **Journal of Catalysis 354 (2017) 287** ("Experimental and Theoretical Assessment of the Mechanism of Hydrogen Transfer in Alkane-Alkene Coupling on Solid Acids") doi.org/10.1016/j.jcat.2017.08.002

327. Wang, S. and Iglesia, E., **Journal of Physical Chemistry C 121 (2017) 18030** (*"*Experimental and Theoretical Evidence for Reactivity of Bound Intermediates in Ketonization of Carboxylic Acids and Consequences of Acid-base Properties of Oxide Catalysts*"*) doi.org/10.1021/acs.jpcc.7b05987

326. Liu, J., Hibbitts, D., and Iglesia, E., **Journal of the American Chemical Society 139 (2017) (11789)** ("Dense CO Adlayers as Enablers of CO Hydrogenation Turnovers on Ru Surfaces") doi.org/10.1021/jacs.7b04606

325. Wang, S. and Iglesia, E., **Journal of Catalysis 352 (2017) 415** (*"*Catalytic Diversity Conferred by Confinement of Protons within Porous Aluminosilicates in Prins Condensation Reactions*"*) doi.org/10.1016/j.jcat.2017.06.012

324. Agirrezabal-Telleria, I. and Iglesia, E., **Journal of Catalysis 352 (2017) 505** ("Stabilization of active, selective, and regenerable Ni-based dimerization catalysts by condensation within ordered mesopores") doi.org/10.1016/j.jcat.2017.06.025

323. Tao, Z., Chemburkar, A., Hibbitts, D.D., Iglesia, E., and Neurock, M., **Faraday Discussions 197 (2017) 59** ("Theoretical Insights into the Sites and Mechanisms for Base Catalyzed Esterification and Aldol Condensation Reactions over Cu") doi.org/10.1039/C6FD00226A

322. Sarazen, M.L. and Iglesia, E., **Proceedings of the National Academy of Sciences 114 (2017) E3900** ("Stability of Bound Species during Alkene Reactions on Solid Acids") doi.org/10.1073/pnas.1619557114

321. Wang. S., Agirrezabal-Telleria, I., Bhan, A., Simonetti, D., Takanabe, K., and Iglesia, E., **Faraday Discussions 197 (2017) 9** ("Catalytic Routes to Fuels from C_1 and Oxygenate Molecules") doi.org/10.1039/C7FD00018A

320. Wang, S. and Iglesia, E., **Journal of Catalysis 345 (2017) 183** (*"*Experimental and Theoretical Assessment of the Mechanism and Site Requirements for Ketonization of Carboxylic Acids on Oxides*"*) doi.org/10.1016/j.jcat.2016.11.006

319. Otto, T., Zones, S., Hong Y., and Iglesia, E., **Journal of Catalysis 356 (2017) 173** ("Synthesis of Highly Dispersed Cobalt Oxide Clusters Encapsulated within LTA Zeolites") doi.org/10.1016/j.jcat.2017.10.017

318. Herrmann, S.T. and Iglesia, S., **Journal of Catalysis 346 (2017) 134** ("Elementary Steps in Acetone Condensation Reactions Catalyzed by Aluminosilicates with Diverse Void Structures") doi.org/10.1016/j.jcat.2016.12.011

317. Hibbitts, D.D., Flaherty, D.W., and Iglesia, E., **ACS Catalysis 6 (2016) 469** ("Role of Branching on the Rate and Mechanism of C-C Cleavage in Alkanes on Metal Surfaces") doi.org/10.1021/acscatal.5b01950

316. Hibbitts, D.D., Dybeck, E., Lawlor, T., Neurock, M., and Iglesia, E., **Journal of Catalysis 337 (2016) 91** ("Preferential Activation of Carbon Monoxide near Hydrocarbon Chains during Fischer-Tropsch Synthesis on Ru") doi.org/10.1016/j.jcat.2016.01.010

315. Knaeble, W. and Iglesia, E., **Journal of Physical Chemistry C 120 (2016) 3371** ("Kinetic and Theoretical Insights into the Mechanism of Alkanol Dehydration on Solid Bronsted Acid Catalysts") doi.org/10.1021/acs.jpcc.5b11127

314. Hibbitts, D.D., Flaherty, D.W., and Iglesia, E., **Journal of Physical Chemistry C 120 (2016) 8125** ("Effects of Chain Length and van der Waals Interactions on the Mechanism and Rates of Metal-Catalyzed Hydrogenolysis of n-Alkanes") doi.org/10.1021/acs.jpcc.6b00323

313. Otto, T., Zones S., and Iglesia, E., **Journal of Catalysis 339 (2016) 195** ("Challenges and Strategies in the Encapsulation and Stabilization of Monodisperse Au Clusters within Zeolites") doi.org/10.1016/j.jcat.2016.04.015

312. Wang, S. and Iglesia, E., **Journal of Catalysis, 340 (2016) 302** ("Condensation and Esterification Reactions of Oxygenates on TiO_2: Elementary Steps, Site Requirements, and Synergistic Effects of Bifunctional Strategies") doi.org/10.1016/j.jcat.2016.05.026

311. Deshlahra, P., and Iglesia, E., **Journal of Physical Chemistry C, 120 (2016) 16741** ("Reactivity and Selectivity Descriptors for the Activation of C-H Bonds in Hydrocarbons and Oxygenates on Metal Oxides") doi.org/10.1021/acs.jpcc.6b04604

310. Deshlahra, P. and Iglesia, E., **ACS Catalysis, 6 (2016) 5386** ("Toward More Complete Descriptors of Reactivity in Catalysis by Solid Acids") doi.org/10.1021/acscatal.6b01402

309. Iwasaki, M. and Iglesia, **Journal of Catalysis 342 (2016) 84** ("Mechanistic Assessments of NO Oxidation Turnover Rates and Active Site Densities on WO_3Promoted CeO_2 Catalysts") doi.org/10.1016/j.jcat.2016.07.011

308. Otto, T., Ramallo-Lopez, J.M., Giovanetti, L., Requejo, F.G., Zones, S., and Iglesia**, Journal of Catalysis 342 (2016) 125** ("Synthesis of Stable Monodisperse AuPd, AuPt and PdPt Bimetallic Clusters Encapsulated with LTA-Zeiolites") doi.org/10.1016/j.jcat.2016.07.017

307. Landry, A.M. and Iglesia, E., **Chemistry of Materials, 28, (2016) 5872** ("Synthesis of Bimetallic AuPt Clusters with Clean Surfaces via Sequential Displacement-Reduction Processes") doi.org/10.1021/acs.chemmater.6b02346

306. Knaeble, W. and Iglesia, **Journal of Catalysis 344 (2016) 817** ("Acid Strength and Metal-Acid Proximity Effects on Methylcyclohexane Ring Contraction Turnover Rates and Selectivities") doi.org/10.1016/j.jcat.2016.08.007

305. Wang, S. and Iglesia, E., **ACS Catalysis, 6 (2016) 7664** ("Mechanism of Isobutanal-Isobutene Prins Condensation on Solid Bronsted Acids") doi.org/10.1021/acscatal.6b02171

304. Landry, A.M. and Iglesia, E., **Journal of Catalysis 344 (2016) 389** ("Displacement-Reduction Routes to PtPd Clusters and Mechanistic Inferences for the Synthesis of Other Bimetallic Compositions") doi.org/10.1016/j.jcat.2016.10.007

303. Wang, S. and Iglesia, E., **Journal of Physical Chemistry C, 120 (2016) 21589** ("Substituent Effects and Molecular Descriptors of Reactivity in Condensation and Esterification Reactions of Oxygenates on Acid-Base Pairs at TiO_2 and ZrO_2 Surfaces") doi.org/10.1021/acs.jpcc.6b07304

302. Sarazen, M.L., Doskocil, E., and Iglesia, E., **ACS Catalysis, 6 (2016) 7059** ("The Effects of Void Environment and Acid Strength on Alkene Oligomerization Selectivity") doi.org/10.1021/acscatal.6b02128

301. Chin,Y.-H., García-Diéguez, M. and Iglesia, E., **Journal of Physical Chemistry C 120 (2016) 1446** ("Dynamics and Therodynamics of Pd-PdO Phase Transition: Effects of Pd Cluster Size and Kinetic Implications for Catalytic Methane Combustion") doi.org/10.1021/acs.jpcc.5b06677

300. Sarazen, M.L, Doskocil, E. and Iglesia, E., **Journal of Catalysis 344 (2016) 553** ("Catalysis on Solid Acids: Mechanism and Catalyst Descriptors in Oligomerization Reactions of Light Alkenes") doi.org/10.1016/j.jcat.2016.10.010

299. Deshlahra, P., Carr, R., Chai, S.-H., and Iglesia, E., **ACS Catalysis 5 (2015) 666** ("Mechanistic Details and Reactivity Descriptors in Oxidation and Acid Catalysis of Methanol") doi.org/10.1021/cs501599y

298. Flaherty, D., and Iglesia, E., **Journal of Physical Chemistry C 119 (2015) 2597** ("Catalytic Ring Opening of Cycloalkanes on Ir Clusters: Alkyl Substitution Effects on the Structure and Stability of C-C Bond Cleavage Transition States") doi.org/10.1021/jp511688x

297. Hibbitts, D.D. and Iglesia, E., **Accounts of Chemical Research 48 (2015) 1254** ("The Prevalence of Bimolecular Routes in the Activation of Diatomic Molecules with Strong Chemical Bonds on Catalytic Surfaces") doi.org/10.1021/acs.accounts.5b00063

296. Gurbuz, E.I., Hibbitts, D.D., and Iglesia, E., **Journal of the American Chemical Society 137 (2015) 11984** ("Kinetic and Mechanistic Assessment of Alkanol/Alkanal Decarbonylation and Deoxygenation Pathways on Metal Catalysts") doi.org/10.1021/jacs.5b05361

295. Goel, S., Zones, S., and Iglesia, E., **Chemistry of Materials 27 (2015) 2056** ("Synthesis of Zeolites via Interzeolite Transformations without Organic Structure-Directing Agents") doi.org/10.1021/cm504510f

294. Jones, A. and Iglesia, E., **ACS Catalysis 5 (2015) 5741** ("The Strength of Brønsted Acids Sites in Zeolites") doi.org/10.1021/acscatal.5b01133

293. Wu, Z., Goel, S., Choi, M., and Iglesia, E., **Journal of Catalysis 311 (2014) 458** ("Hydrothermal Synthesis of LTA-Encapsulated Metal Clusters and Consequences for Catalyst Stability, Reactivity and Selectivity") doi.org/10.1016/j.jcat.2013.12.021

292. Jones, A., Carr, R., Zones, S., and Iglesia, E., **Journal of Catalysis 312 (2014) 58** ("Acid Strength and Solvation in Catalysis by MFI Zeolites and Effects of the Identity, Concentration and Location of Framework Heteroatoms") doi.org/10.1016/j.jcat.2014.01.007

291. Knaeble, W., Carr, R., and Iglesia, E., **Journal of Catalysis 319 (2014) 283** ("Effects of Acid Strength and Solvation on the Isomerization of Hexane Isomers on Solid Brønsted Acids") doi.org/10.1021/ja900829x

290. Kunz, S. and Iglesia, E., **Journal of Physical Chemistry C 118 (2014) 7468** ("Mechanistic Evidence for Sequential Displacement-Reduction Routes in the Synthesis of Pd-Au Clusters with Uniform Size and Clean Surfaces") doi.org/10.1021/jp500537v

289. Flaherty, D.W., Hibbitts, D.D., and Iglesia, E., **Journal of the American Chemical Society**, **136 (2014) 9664** ("Metal-Catalyzed C-C Bond Cleavage in Alkanes: Effects of

Methyl Substitution on Transition State Structures and Stability") doi.org/10.1021/ja5037429

288. Hibbitts, D.D., Jimenez, R., Yoshimura, M., Weiss, B.M., and Iglesia, E., **Journal of Catalysis 319 (2014) 95** ("Catalytic NO Activation and NO-H_2 Reaction Pathways") doi.org/10.1016/j.jcat.2014.07.012

287. Deshlahra, P., Carr, R.T, and Iglesia, E., **Journal of the American Chemical Society 136 (2014) 15229** ("Ionic and Covalent Stabilization of Intermediates and Transition States in Catalysis by Solid Acids"). doi.org/10.1021/ja506149c

286. Goel, S., Zones, S.I., and Iglesia, E., **Journal of the American Chemical Society 136 (2014) 15280** ("Encapsulation of Metal Clusters within MFI via Interzeolite Transformations and Catalytic Consequences of Cluster Confinement") doi.org/10.1021/ja507956m

285. Jones, A., Zones, S.I., and Iglesia, E., **Journal of Physical Chemistry C**, **118 (2014) 17787** ("Implications of Transition State Confinement within Small Voids for Acid Catalysis"). doi.org/10.1021/jp5050095

284. Deshlahra, P., and Iglesia, E., **Journal of Physical Chemistry C 118 (2014) 26115** ("Methanol Oxidative Dehydrogenation on Oxide Catalysts: Molecular and Dissociative Routes and Hydrogen Addition Energies as Descriptors of Reactivity") doi.org/10.1021/jp507922u

283. Flaherty, D., Hibbitts, D., Gurbuz, E., and Iglesia, E., **Journal of Catalysis 311 (2014) 350** ("Theoretical and Kinetic Assessment of the Mechanism of Ethane Hydrogenolysis on Metal Surfaces Saturated with Chemisorbed Hydrogen") doi.org/10.1016/j.jcat.2013.11.026

282. Jones, A. and Iglesia, E., **Angewandte Chemie Int. Ed. 126 (2014) 12177** ("Kinetic, Spectroscopic, and Theoretical Assessment of Associative and Dissociative Methanol Dehydration Routes in Zeolites") doi.org/10.1002/anie.201406823

281. Jones, A. J., Oustrouchov, C., Haranczyk, M., and Iglesia, E., **Microporous and Mesoporous Materials, 181 (2013) 208** ("From Rays to Structures: Representation and Selection of Void Structures in Zeolites using Stochastic Methods") doi.org/10.1016/j.micromeso.2013.07.033

280. Pinheiro, M., Martin, R., Rycroft, C. H., Jones, A. J., Iglesia, E., and Haranczyk, M., **Journal of Molecular Graphics and Modeling, 44 (2013) 208** ("Characterization and comparison of pore landscapes in crystalline porous materials") doi.org/10.1016/j.jmgm.2013.05.007

279. Gounder, R., and Iglesia, E., **Chemical Communications, 49 (2013) 3491 (Feature Article)** ("The Catalytic Diversity of Zeolites: Confinement and Solvation Effects within Voids of Molecular Dimensions") doi.org/10.1039/C3CC40731D

278. Garcia-Dieguez, M., and Iglesia, E., **Journal of Catalysis, 301 (2013) 198** ("Structure sensitivity via decoration of low-coordination exposed metal atoms: CO oxidation catalysis on Pt clusters") doi.org/10.1016/j.jcat.2013.02.014

277. Loveless, B., Buda, C., Neurock, M., and Iglesia, E., **Journal of the American Chemical Society, 135 (2013) 6107** ("CO Chemisorption and Dissociation at High Coverages during CO Hydrogenation on Ru Catalysts") doi.org/10.1021/ja311848e

276. Chin,Y.-H., Buda,C., Neurock, M., and Iglesia, E., **Journal of the American Chemical Society, 135 (2013) 15425** ("Consequences of Metal-Oxide Interconversion for C-H Bond Activation during CH_4 Reactions on Pd Catalysts") doi.org/10.1021/ja405004m

275. Flaherty, D. and Iglesia, E., **Journal of the American Chemical Society 135 (2013) 18586** ("Transition State Enthalpy and Entropy Effects on Reactivity and Selectivity in Hydrogenolysis of n-Alkanes") doi.org/10.1021/ja4093743

274. Artioli, N., Lobo, R. F., and Iglesia, E., **Journal of Physical Chemistry C, 117 (2013) 20666** ("Catalysis by Confinement: Enthalpic Stabilization of NO Oxidation Transition States by Microporous and Mesoporous Silicates") doi.org/10.1021/jp406333d

273. Hibbitts, D., Loveless, B., Neurock, M., and Iglesia, E., **Angewandte Chemie, 52 (2013) 12273** ("Mechanistic Role of Water on the Rate and Selectivity of Fischer-Tropsch Synthesis on Ruthenium Catalysts") doi.org/10.1002/anie.201304610

272. Garcia-Dieguez, M., Chin, Y.-H., and Iglesia, E., **Journal of Catalysis, 285 (2012) 260-272** ("Catalytic Reactions of Dioxygen with Ethane and Methane on Platinum Clusters: Mechanistic Connections, Site Requirements, and Consequences of Chemisorbed Oxygen") doi.org/10.1016/j.jcat.2011.09.036

271. Gounder, R., and Iglesia, E., **Accounts of Chemical Research, 45 (2012) 229-238** ("The Roles of Entropy and Enthalpy in Stabilizing Ion-Pairs at Transition States in Zeolite Acid Catalysis") doi.org/10.1021/ar200138n

270. Gounder, R., Jones, A., Carr, R., and Iglesia, E., **Journal of Catalysis, 286 (2012) 214-223** ("Solvation and Acid Strength Effects on Catalysis by Faujasite Zeolites") doi.org/10.1016/j.jcat.2011.11.002

269. Hazari, N., Labinger, J., Simonetti, D., and Iglesia, E., **Accounts of Chemical Research, 45 (2012) 653-662** ("Selective Homogeneous and Heterogeneous Catalytic Conversion of Methanol/Dimethyl Ether to Triptane") doi.org/10.1021/ar2002528

268. Ojeda, M., Zhan, B.-Z., and Iglesia, E., **Journal of Catalysis, 285 (2012) 92-102** ("Mechanistic Interpretation of CO Oxidation Turnover Rates on Supported Au Clusters") doi.org/10.1016/j.jcat.2011.09.015

267. Simonetti, D. A., Carr, R., and Iglesia, E., **Journal of Catalysis, 285 (2012) 19-30** ("Acid Strength and Solvation Effects on Methylation, Hydride Transfer, and Isomerization Rates during Catalytic Homologation of C1 Species") doi.org/10.1016/j.jcat.2011.09.007

266. Goel, S., Wu, Z., Zones, S., and Iglesia, E., **Journal of the American Chemical Society, 134 (2012) 17688-17695** ("Synthesis and Catalytic Properties of Metal Clusters Encapsulated within Small-Pore (SOD, GIS, ANA) Zeolites") doi.org/10.1021/ja307370z

265. Weiss, B., Artioli, N., and Iglesia, E., **ChemCatChem, 4 (2012) 1397-1404** ("Catalytic NO Oxidation on Dispersed Rh and Co Oxides") doi.org/10.1002/cctc.201200050

264. Carr, R.T., Neurock, M., and Iglesia, E**., Journal of Catalysis, 278 (2011) 78-93** ("Catalytic Consequences of Acid Strength in the Conversion of Methanol to Dimethyl Ether") doi.org/10.1016/j.jcat.2010.11.017

263. Chin, Y.-H., Buda, C., Neurock, M., Iglesia, E. **Journal of Catalysis, 283 (2011) 10** ("Selectivity of Chemisorbed Oxygen in C-H Bond Activation and CO Oxidation and Kinetic Consequences for CH_4-O_2 Catalysis on Pt and Rh Clusters") doi.org/10.1016/j.jcat.2011.06.011

262. Chin, Y.-H., Buda, C., Neurock, M., Iglesia, E. **Journal of the American Chemical Society, 133 920110 15958** ("Reactivity of Chemisorbed Oxygen Atoms and their Catalytic Consequences during CH4-O2 Catalysis on Supported Pt Clusters") doi.org/10.1021/ja202411v

261. Chin, Y.-H., Iglesia, E. **Journal of Physical Chemistry C, 115 (2011) 17845** ("Elementary Steps, the Role of Chemisorbed Oxygen, and the Effects of Cluster Size in Catalytic CH4-O2 Reactions on Palladium") doi.org/10.1021/jp203324y

260. Gounder, R. and Iglesia, E., **Journal of Catalysis 277 (2011) 36** ("Catalytic Hydrogenation of Alkenes on Acidic Zeolites: Mechanistic Connections to Monomolecular Alkane Dehydrogenation Reactions") doi.org/10.1016/j.jcat.2010.10.013

259. Gounder, R., and Iglesia, E., **ChemCatChem, 3 (2011) 1134** ("Catalytic Alkylation Routes via Carbonium-Ion-Like Transition States on Acidic Zeolites"). First published 5 May, 2011. doi.org/10.1002/cctc.201100051

258. Luts, T., Katz, A., and Iglesia, E., **Journal of Materials Chemistry 21 (2011) 982** ("Silica Supported Aminoxyls as Reactive Materials for NO_x Removal") doi.org/10.1039/C0JM02826F

257. Sad, M., Neurock, M., Iglesia, E. **Journal of the American Chemical Society, 133 (2011) 20384** ("Formation of C-C and C-O Bonds and Oxygen Removal in Reactions of Alkanediols, Alkanols, and Alkanals on Copper Catalysts") doi.org/10.1021/ja207551f

256. Simonetti, D. A., Ahn, J. H., and Iglesia, E., **Chem. Cat. Chem., 3 (2011) 704** ("Catalytic Co-Homologation of Alkanes and Dimethyl Ether and Promotion by Adamantane as Hydride Transfer Co-Catalyst") doi.org/10.1002/cctc.201000383

255. Simonetti, D. A., Ahn, J. H., and Iglesia, E., **Journal of Catalysis, 277 (2011) 173** ("Mechanistic details of acid-catalyzed reactions and their role in the selective synthesis of triptane and isobutane from dimethyl ether") doi.org/10.1016/j.jcat.2010.11.004

254. Wang, H. and Iglesia, E., **ChemCatChem, 3, (2011) 1166** ("Mechanism and Site Requirements of Thiophene Hydrodesulfurization Catalyzed by Supported Pt Clusters") doi.org/10.1002/cctc.201100027

253. Allian, A., Takanabe, K., Fujdala, K., Hao, X., Truex, T., Cai, J., Buda, C., Neurock, M., and Iglesia, E., **Journal of American Chemical Society, 113 (2011) 4498** ("Chemisorption of CO and Mechanism of CO Oxidation on Supported Platinum Nanoclusters") doi.org/10.1021/ja110073u

252. Weiss, B., Caldwell, K., and Iglesia, E. **Journal of Physical Chemistry C, 115 (2011) 6561-6570** ("NOx Interactions with Dispersed BaO: Adsorption Kinetics, Chemisorbed Species, and Effects of Oxidation Catalyst Sites") doi.org/10.1021/jp110604j

251. Iglesia, E., **Journal of Catalysis, 269 (2010) 254** ("A Farewell (of Sorts)"). doi.org/10.1016/j.jcat.2010.01.014

250. Ojeda, M., Nabar, R., Nilekar, A.U., Ishikawa, A., Mavrikakis, M., and Iglesia, E., **Journal of Catalysis 272 (2010) 287** ("CO Activation Pathways and the Mechanism of the Fischer-Tropsch Synthesis") doi.org/10.1016/j.jcat.2010.04.012

249. Weiss, B. M. and Iglesia, E., **Journal of Catalysis 272 (2010) 274** ("Mechanism and Site Requirements for NO Oxidation on Pd Catalysts") doi.org/10.1016/j.jcat.2010.03.010

248. Yamaguchi, A., and Iglesia, E., **Journal of Catalysis 274 (2010) 52** ("Catalytic Activation and Reforming of Methane on Supported Palladium Clusters") doi.org/10.1016/j.jcat.2010.06.001

247. Wang, H. and Iglesia, E, **Journal of Catalysis 273 (2010) 245** ("Thiophene Hydrodesulfurization Catalysis on Supported Ru Clusters: Mechanism and Site Requirements for Hydrogenation and Desulfurization Pathways") doi.org/10.1016/j.jcat.2010.05.019

246. Diaz, E., Sad, M.E., and Iglesia, E., **Chem. Sus. Chem. 3 (2010) 1063** ("Homogeneous Reactions of Propanediols at Low Temperatures") doi.org/10.1002/cssc.201000142

245. Choi, M., Wu, Z., and Iglesia, E., **Journal of the American Chemical Society, 132 (2010) 9129** ("Mercaptosilane-Assisted Synthesis of Metal Clusters within Zeolites and Catalytic Consequences of Encapsulation") doi.org/10.1021/ja102778e

244. Gounder, R., and Iglesia, E., **Angew. Chemie Int. Ed., 49 (2010) 808** ("Effects of Partial Confinement on the Specificity of Monomolecular Alkane Reactions for Acid Sites in Side Pockets of Mordenite") doi.org/10.1002/anie.200905869

243. Ojeda, M., Li, A., Nabar, R., Nilekar, A.U., Mavrikakis, M., and Iglesia, E., **Journal of Physical Chemistry C, 114 (2010) 19761** ("Kinetically-Relevant Steps and H_2/D_2 Isotope Effects in the Fischer-Tropsch Synthesis on Fe and Co Catalysts") doi.org/10.1021/jp1073076

242. daRosa, C.P., Iglesia, E., and Maboudian, R. **Electrochimica Acta, 54 (2009), 3270-3277** ("Copper Deposition onto Silicon by Galvanic Displacement: Effect of Cu Complex Formation in NH_4F Solutions") doi.org/10.1016/j.electacta.2008.12.037

241. Gounder, R., and Iglesia, E., **Journal of the American Chemical Society, 2009, 131 (5), 1958-1971** ("Catalytic Consequences of Spatial Constraints and Acid Site Location for Monomolecular Alkane Activation on Zeolites") doi.org/10.1021/ja808292c

240. Ahn, J., Temel, B., and Iglesia, E., **Angewandte Chemie International Edition (VIP article), 48, 3814 (2009)** ("Selective Homologation Routes to 2,2,3-Trimethylbutane on Solid Acids") doi.org/10.1002/anie.200900541

239. Janik, M., Macht, J., Iglesia, E., and Neurock, M., **Journal of Physical Chemistry, 113 (5) (2009) 1872-1885** ("Correlating Acid Properties and Catalytic Function: A First-Principles Analysis of Alcohol Dehydration Pathways on Polyoxometalates") doi.org/10.1021/jp8078748

238. Kilos, B., Bell, A. T., and Iglesia, E., **Journal of Physical Chemistry C, 113 (2009) 2830.** ("Mechanism and Site Requirements for Ethanol Oxidation on Vanadium Oxide Domains") doi.org/10.1021/jp8078056

237. Macht, J., Carr, R. T., and Iglesia, E., **Journal of Catalysis, 264 (2009) 54** (" doi.org/10.1016/j.jcat.2009.03.005

236. Macht, J., Carr, R. T., and Iglesia, E., **Journal of the American Chemical Society, 131 (2009) 6554** ("Consequences of Acid Strength for Isomerization and Elimination Catalysis on Solid Acids") doi.org/10.1021/ja900829x

235. Ojeda, M., and Iglesia, E., **Angewandte Chemie, 48 (2009) 4800** ("Formic Acid Dehydrogenation on Au-based Catalysts at Near-Ambient Temperatures") doi.org/10.1002/anie.200805723

234. Ojeda, M., and Iglesia, E., **Chemical Communications, 3 (2009) 352** ("Catalytic Epoxidation of Propene with H_2O-O_2 Reactants on Au/TiO_2") doi.org/10.1039/B813589D

233. Takanabe, K., and Iglesia, E., **Journal of Physical Chemistry C, 113 (2009) 10131** ("Mechanistic Aspects and Reaction Pathways for Oxidative Coupling of Methane on $Mn/Na_2WO_4/SiO_2$ Catalysts") doi.org/10.1021/jp9001302

232. Weiss, B. M. and Iglesia, E., **Journal of Physical Chemistry, 113 (2009) 13331** ("NO Oxidation Catalysis on Pt Clusters: Elementary Steps, Structural Requirements, and Synergistic Role of NO_2 Adsorption Sites") doi.org/10.1021/jp902209f

231. Zboray, M., Bell, A. T., and Iglesia, E., **Journal of Physical Chemistry C, 113 (2009) 12380** ("The Role of C-H Bond Strength in the Oxidative Dehydrogenation of Alkanes") doi.org/10.1021/jp901595k

231. Bhan, A., Gounder, R., Macht, J., and Iglesia, E., **Journal of Catalysis, 253, 221 (2008)** ("Entropy Considerations in Monomolecular Cracking of Alkanes on Acidic Zeolites") doi.org/10.1016/j.jcat.2007.11.003

230. Bhan, A. and Iglesia, E. **Accounts of Chemical Research, 41, 559 (2008)** ("A Link Between Reactivity and Local Structure in Acid Catalysis by Zeolites") doi.org/10.1021/ar700181t

229. daRosa, C.P., Iglesia, E., and Maboudian, R. **Journal of the Electrochemical Society, 155 (2008) E70.** ("Dynamics of Cu deposition onto Si by Galvanic Displacement: Non-Oxidized Si Surfaces") doi.org/10.1149/1.2829907

228. daRosa, C.P., Iglesia, E., and Maboudian, R. **Journal of the Electrochemical Society, 155 (2008) D244.** ("Copper Deposition onto Silicon by Galvanic Displacement: Effect of Si Dissolution Rates") doi.org/10.1149/1.2907155

227. Li, X. and Iglesia E., **Chemical Communications 5 (2008) 594.** ("Pt/[Fe]ZSM-5 Modified by Na and Cs Cations: An Active and Selective Catalyst for Dehydrogenation of n-Alkanes to n-Alkenes") doi.org/10.1039/B715543C

226. Li, X. and Iglesia E., **Applied Catalysis A 334 (2008) 339.** ("Support and Promoter Effects in the Selective Oxidation of Ethane to Acetic Acid Catalyzed by Mo-V-Nb Oxides") doi.org/10.1016/j.apcata.2007.10.021

225. Kim, D. K., and Iglesia, E., **Journal of Physical Chemistry C, 112 (2008) 17235.** ("Isotopic and Kinetic Assessment of the Mechanism of CH_3OH-H_2O Catalysis on Supported Copper Clusters") doi.org/10.1021/jp8062178

224. Li, X. and Iglesia E., **Journal of Physical Chemistry C 112 (2008) 15001.** ("Kinetics and Mechanism of Ethane Oxidation to Acetic Acid on Catalysts Based on Mo-V-Nb Oxides") doi.org/10.1021/jp801488y

223. Li, X. and Iglesia E., **Journal of Catalysis, 255, 134 (2008)** ("Catalytic Dehydroisomerization of n-Alkanes to Isoalkenes") doi.org/10.1016/j.jcat.2008.01.021

222. Macht, J., Janik, M., Neurock, M., and Iglesia, E., **Journal of the American Chemical Society 130, 31 (2008)** ("Mechanistic Consequences of Composition in Acid Catalysis by Polyoxometalate Keggin Clusters") doi.org/10.1021/ja803114r

221. Macht, J., and Iglesia, E., **Physical Chemistry Chemical Physics (Invited Perspective Article) 10, 5331 (2008)** ("Structure and Function of Oxide Nanostructures: Catalytic Consequences of Size and Composition") doi.org/10.1039/B805251D

220. Takanabe, K., and Iglesia, E., **Angewandte Chemie, 47, 7689 (2008)** ("Rate and Selectivity Enhancements Mediated by OH Radicals in Oxidative Coupling of Methane Catalyzed by $Mn/Na_2WO_4/SiO_2$") doi.org/10.1002/anie.200802608

219. Cheung, P., Bhan, A., Sunley, G.L., and Iglesia, E., **Journal of Catalysis, 245 (2007) 110.** ("Site Requirements and Elementary Steps of Dimethyl Ether Carbonylation to Methyl Acetate Catalyzed by Acid Zeolites") doi.org/10.1016/j.jcat.2006.09.020

218. Lacheen, H.S., and Iglesia, E., **Chemistry of Materials, 19 (2007) 1877.** ("Structure of Zirconium Exchanged H-ZSM5 Prepared by Vapor Exchange of $ZrCl_4$") doi.org/10.1021/cm060467u

217. Modén, B., Zhan, B.-Z., Dakka, J., Santiesteban, J., and Iglesia, E., **Journal of Physical Chemistry C, 111 (2007) 1402.** ("Reactant Selectivity and Regioselectivity in Oxidation of Alkanes on MeAPO Catalysts") doi.org/10.1021/jp062869v

216. Notestein, J.M., Andrini, L.R., Requejo, F.G., Kalchenko, V.I., Katz, A., and Iglesia, E., **Journal of the American Chemical Society**, **129 (2007) 1122.** ("Structural Assessment and Catalytic Consequences of the Oxygen Coordination Environment in Grafted Ti-Calixarenes") doi.org/10.1021/ja065830c

215. Lacheen, H.S., Cordeiro, P.J., and Iglesia, E., **Chemistry: A European Journal, 13 (2007) 3048.** ("Isolation of Rhenium and ReO_x Species within ZSM-5 Channels and their Catalytic Function in the Activation of Alkanes and Alkanols") doi.org/10.1002/chem.200601602

214. Zhan, B.-Z., Modén, B., Dakka, J., Santiesteban, J., and Iglesia, E., **Journal of Catalysis, 245 (2007) 316.** ("Catalytic Oxidation of n-Hexane on Mn-exchanged Zeolites: Turnover Rates, Regioselectivity, and Spatial Constraints") doi.org/10.1016/j.jcat.2006.10.019

213. Li, X. and Iglesia, E., **Chemistry: A European Journal 13 (2007) 9324.** ("Selective Catalytic Oxidation of Ethanol to Acetic Acid on Dispersed Mo-V-Nb Mixed Oxides") doi.org/10.1002/chem.200700579

212. Bhan, A., Allian, A., Sunley, G., Law, D., and Iglesia, E., **Journal of the American Chemical Society, 129 (2007) 419.** ("Specificity of Sites Within Eight-Membered Ring Zeolite Channels for the Carbonylation of Methyls to Acetyls") doi.org/10.1021/ja070094d

211. Zhan, B.-Z. and Iglesia, E., **Angewandte Chemie, 46 (2007) 3697.** ("RuO_2 Clusters within LTA Zeolites Cages: Consequences of Encapsulation on Catalytic Reactivity and Selectivity") doi.org/10.1002/anie.200700128

210. Ishikawa, A. and Iglesia, E., **Chemical Communications, 28 (2007) 2992.** ("Bifunctional Synergy between Pt Clusters and Al_2O_3 Supports in Catalytic Combustion of Dimethyl Ether"). doi.org/10.1039/B702693E

209. Li, X. and Iglesia E., **Angewandte Chemie, 46 (2007) 1.** ("Synergistic Effects of TiO_2 and Pd-Based Co-Catalysts on the Selective Oxidation of Ethene to Acetic Acid on Mo-V-Nb Oxide Domains") doi.org/10.1002/ange.200700593

208. Lichtenberger, J. and Iglesia E., **Physical Chemistry Chemical Physics Chemistry, 9 (2007) 4902.** ("Catalytic Oxidation of Methanol on Pd Metal and Oxide Clusters at Near Ambient Temperature") doi.org/10.1039/B707465D

207. Ishikawa, A., Neurock, M., and Iglesia, E., **Journal of the American Chemical Society, 129 (2007) 13201.** ("Structural Requirements and Reaction Pathways in Dimethyl Ether Combustion Catalyzed by Supported Pt Clusters") doi.org/10.1021/ja073712z

206. Ishikawa, A. and Iglesia, E., **Journal of Catalysis 252 (2007) 49.** ("Structural Requirements and Reaction Pathways in Dimethyl Ether Combustion Catalyzed by Supported Pd, Rh, Pt Clusters") doi.org/10.1021/ja073712z

205. Macht, J., Janik, M., Neurock, M., and Iglesia, E., **Angewandte Chemie, 46 (2007) 7864.** ("Catalytic Consequences of Composition in Polyoxometalate Clusters with Keggin Structure") doi.org/10.1002/anie.200701292

204. Notestein, J.M., Iglesia, E. and Katz, A., **Chemistry of Materials, 19 (2007) 4998.** ("Photoluminescence and Charge Transfer Complexes of Calixarenes Grafted on TiO2 Nanoparticles") doi.org/10.1021/cm070779c

203. Notestein, J.M., Requejo, F.J., Solovyov, A. and Katz, A., **Journal of American Chemical Society 129 (2007) 15585.** ("The Role of Outer Sphere Surface Acidity in

Alkene Epoxidation Catalyzed by Calixarene-Ti(IV) Complexes") doi.org/10.1021/ja074614g

202. Cheung, P.C., Bhan, A., Sunley, G.L., and Iglesia, E., **Angewandte Chemie, International Edition 45 (2006) 1617.** ("Selective Carbonylation of Dimethyl Ether to Methyl Acetate Catalyzed by Acidic Zeolites") doi.org/10.1002/anie.200503898

201. Chica, A., Moden, B., Gatti, G., Marchese, L., and Iglesia, E., **Chemistry: A European Journal 12 (2006) 1960.** ("Selective Catalytic Oxidation of Organosulfur Compounds using tert-Butyl Hydroperoxide") doi.org/10.1002/chem.200500858

200. Yang, S., Iglesia, E., and Bell, A.T., **Journal of Physical Chemistry B, 110 (2006) 2732.** ("Nature, Density, and Catalytic Role of Exposed Species on Dispersed VO_x-CrO_x-Al_2O_3 Catalysts") doi.org/10.1021/jp0582538

199. Herrera, J.E., Kwak, J.H., Hu, J.Z., Wang, Y., Peden, C.H.F., Macht, J., and Iglesia, E., **Journal of Catalysis 239 (2006) 200.** ("Synthesis, Characterization, and Catalytic Function of Novel Highly Dispersed Tungsten Oxide Catalysts on Mesoporous Silica") doi.org/10.1016/j.jcat.2006.01.034

198. Lacheen, H., and Iglesia, E., **Journal of Physical Chemistry B 110 (2006) 5462.** ("Synthesis and Structure of Isolated V(V)-Oxo Species in V-ZSM5 Prepared by $VOCl_3$ Sublimation") doi.org/10.1021/jp0554700

197. Moden, B., Zhan, B.-Z., Dakka, J., Santiesteban, J., and Iglesia, E., **Journal of Catalysis 239 (2006) 390.** ("Kinetics and Mechanism of Cyclohexane and n-Hexane Oxidation on MnAPO Catalysts") doi.org/10.1016/j.jcat.2006.02.006

196. Notestein, J.M., Katz, A., and Iglesia, E., **Langmuir 22 (2006) 4004.** ("Energetics of Small Molecule and Water Complexation in Hydrophobic Calixarene Cavities") doi.org/10.1021/la053093c

195. Zalc, J.M., Green, W.H., and Iglesia, E., **Industrial and Engineering Chemistry 45 (2006) 2677.** ("NO_x-Mediated Homogeneous Pathways for Formaldehyde Synthesis from Methane-Oxygen Mixtures") doi.org/10.1021/ie050885t

194. Li, W., Liu, H., and Iglesia, E., **Journal of Physical Chemistry B, 110 (2006) 23337.** ("Structure and Properties of Zirconia-Supported Ruthenium Oxide Catalysts for the Selective Oxidation of Methanol to Methylformate") doi.org/10.1021/jp0648689

193. Lacheen, H.S., Cordeiro, P., and Iglesia, E., **Journal of the American Chemical Society, 128 (2006) 15802.** ("Structure and Catalytic Function of Re-Oxo Species Grafted onto H-MFI Zeolite by Sublimation of Re_2O_7**)** doi.org/10.1021/ja065832x

192. Argyle, M.D., Chen, K., Iglesia, E., and Bell, A.T., **Journal of Physical Chemistry, 109 (2005) 2414.** ("*In situ* UV-Visible Spectroscopic Measurements of Kinetic

Parameters and Active Sites for Catalytic Oxidation of Alkanes on Vanadium Oxides") doi.org/10.1021/jp040166c

191. Ramallo-López, J.M., Requejo, F.G., Craievich, A.F., Wei, J., Avalos-Borja, M., and Iglesia, E., **Journal of Molecular Catalysis A, 228 (2005) 299. ("**Complementary Methods for Cluster Size Distribution Measurements: Supported Platinum Nanoclusters in Methane Reforming Catalysts") doi.org/10.1016/j.molcata.2004.09.032

190. Lacheen, H. and Iglesia, E., **Physical Chemistry and Chemical Physics, 7 (2005) 538.** ("Isothermal Activation of $Mo_2O_5^{2+}$-ZSM-5 Precursors During Methane Reactions: Effects of Reaction Products on Structural Evolution and Catalytic Properties") doi.org/10.1039/b415166f

189. Liu, H. and Iglesia, E., **Journal of Physical Chemistry 109 (2005) 2155.** ("Selective Oxidation of Methanol and Ethanol on Supported Ruthenium Oxide Clusters at Low Temperatures") doi.org/10.1021/jp0401980

188. Lacheen, H. and Iglesia, E., **Journal of Catalysis, 230 (2005) 173.** ("Stability, Structure, and Oxidation State of Mo/H-ZSM5 During Reactions of CH_4 and CH_4-CO_2 Mixtures) doi.org/10.1016/j.jcat.2004.11.037

187. Pedrero, C., Waku, T., and Iglesia, E., **Journal of Catalysis 233 (2005) 242.** ("Oxidation of CO in H_2-CO Mixtures Catalyzed byPlatinum: Alkai Effects on Rates and Selectivity") doi.org/10.1016/j.jcat.2005.04.005

186. Yang, S., Iglesia, E., and Bell, A.T., **Journal of Physical Chemistry B 109 (2005) 8987.** ("Oxidative Dehydrogenation of Propane over $V_2O_5/MoO_3/Al_2O_3$ and $V_2O_5/Cr_2O_3/Al_2O_3$: Structural Characterization and Catalytic Function") doi.org/10.1021/jp040708q

185. Chica-Lara, A., Strohmaier, K.G., and Iglesia, E., **Applied Catalysis B 60 (2005) 231.** ("Effects of Zeolite Structure and Aluminum Content on Thiophene Adsorption, Desorption, and Reaction Processes") doi.org/10.1016/j.apcatb.2005.02.031

184. Wei, J. and Iglesia, E., **Journal of Catalysis 224 (2004) 370.** ("Isotopic and Kinetic Assessment of the Mechanism of Reactions of CH_4 with CO_2 or H_2O to form Synthesis Gas and Carbon on Nickel Catalysts") doi.org/10.1016/j.jcat.2004.02.032

183. Wei, J. and Iglesia, E., **Angewandte Chemie 43 (2004) 3685.** ("Structural and Mechanistic Requirements for Methane Activation and Chemical Conversion on Supported Iridium Clusters") doi.org/10.1002/anie.200352703

182. Wei, J. and Iglesia, E., **Journal of Physical Chemistry 108 (2004) 4094.** ("Mechanism and Site Requirements for Activation and Chemical Conversion of Methane on Supported Pt Clusters and Turnover Rate Comparisons among Noble Metals") doi.org/10.1021/jp036985z

181. Notestein, J., Katz, A., and Iglesia, E., **Journal of the American Chemical Society, 126(50) (2004) 16478.** ("Grafted MetalloCalixarenes as Single-Site Surface Organometallic Catalysts") doi.org/10.1021/ja0470259

180. Cheung, P., Liu, H., and Iglesia, E., **Journal of Physical Chemistry 108 (2004) 18650.** ("Kinetics and Mechanism of Dimethylether Oxidaiton to Formaldehyde on Supported Molybdenum Oxide Domains") doi.org/10.1021/jp0477405

179. Dai, H.X., Chen, L., Tilley, T.D., and Iglesia, E. **Studies in Surface Science and Catalysis 147 (2004) 679.** ("Effects of Additives on the Activity and Selectivity of Supported Vanadia Catalysts for the Oxidative Dehydrogenation of Propane") doi.org/10.1016/s0167-2991(04)80131-9

178. Wei, J. and Iglesia, E., **Physical Chemistry Chemical Physics 6 (2004) 3754.** ("Isotopic and Kinetic Assessment of the Mechanism of Methane Reforming and Decomposition Reactions on Supported Iridium Catalysis") doi.org/10.1039/b400934g

177. Chica-Lara A., Strohmeier, K., and Iglesia, E., **Langmuir 20 (2004) 10982.** ("Adsorption, Desorption, and Conversion of Thiophene on H-ZSM5") doi.org/10.1021/la048320+

176. Dai, H., Bell, A.T., and Iglesia, E., **Journal of Catalysis 221 (2004) 491.** ("Effects of Molybdena on the Catalytic Properties of Vanadia Domains Supported on Alumina for Oxidative Dehydrogenation of Propane") doi.org/10.1016/j.jcat.2003.09.020

175. Waku, T., Biscardi, J.A., and Iglesia, E., **Journal of Catalysis 222 (2004) 481.** ("Catalytic Dehydrogenation of Alkanes on Pt/Na-[Fe]ZSM5 and Staged O_2 Introduction Strategies for Selective H_2 Removal") doi.org/10.1016/j.jcat.2003.12.011

174. Argyle, M.D., Chen, K., Resini, C., Krebs, C., Bell, A.T., and Iglesia, E., **Journal of Physical Chemistry 108 (2004) 2345.** ("Extent of Reduction of Vanadium Oxides During Catalytic Oxidation of Alkanes Determined by In Situ UV-Visible Spectroscopy") doi.org/10.1021/jp030989m

173. Liu, H. and Iglesia, E., **Journal of Catalysis 223 (2004) 161.** ("Effects of Support on Bifunctional Methanol Oxidation Pathways Catalyzed by Polyoxometalltate Keggin Clusters") doi.org/10.1016/j.jcat.2004.01.012

172. Wei, J. and Iglesia, E., **Journal of Physical Chemistry 108 (2004) 7252.** ("Reaction Pathways and Site Requirements for the Activation and Chemical Conversion of Methane on Ru-Based Catalysts") doi.org/10.1021/jp0307831

171. Zalc, J.M., Reyes, S.C., and Iglesia, E., **Chemical Engineering Science 59 (2004) 2947.** ("The Influence of Diffusion Regime and Void Structure on the Estimation of Tortuosity Factors in Heterogeneous Media") doi.org/10.1016/j.ces.2004.04.028

170. Moden, B., Oliviero, L., Dakka, J., Santiesteban, J., and Iglesia, E., **Journal of Physical Chemistry 108 (2004) 5552.** ("Structural and Functional Characterization of Redox Mn and Co Sites in AlPO Materials and Their Role in Alkane Oxidation Catalysis") doi.org/10.1021/jp037257e

169. Wei, J. and Iglesia, E., **Journal of Catalysis 225 (2004) 116.** ("Structural Requirements and Reaction Pathways in Methane Activation and Chemical Conversion Catalyzed by Rhodium") doi.org/10.1016/j.jcat.2003.09.030

168. Macht, J., Baertsch, C.D., May-Lozano, M., Soled, S.L., Wang, Y., and Iglesia, E., **Journal of Catalysis, 227 (2004) 479.** ("Support Effects on Brønsted Acid site densities and Alcohol Dehydration Turnover Rates on Tungsten Oxide Domains") doi.org/10.1016/j.jcat.2004.08.014

167. Yu, S.Y., Waku, T., and Iglesia, E., **Applied Catalysis 24 (2003) , 111.** ("Catalytic Desulfurization of Thiophene using Alkanes as Co-Reactants") doi.org/10.1016/s0926-860x(02)00507-0

166. Li, L. and Iglesia, E., **Chemical Engineering Science 58 (2003) 1977.** ("Modeling and Characterization of Hydrogen Permeation through Proton-Electronic Conductors: Model Development and Simulations") doi.org/10.1016/s0009-2509(03)00057-5

165. Soled, S.L., Iglesia, E., Fiato, R.A., Baumgartner, J.E., Vroman, H., and Miseo, S., **Topics in Catalysis 26 (2003) 101.** ("Control of Fischer-Tropsch Synthesis Activity and Selectivity and the Solid-State Chemistry of Supported Cobalt").

164. Argyle, M.D., Chen, K., Resini, C., Krebs, C., Bell, A.T., and Iglesia, E., **Chemical Communications 2082 (2003)** ("I*n situ* UV-Visible Assessment of Extent of Reduction during Oxidation Reactions on Oxide Catalysts") doi.org/10.1039/b305264h

163. Liu, H., Cheung, P., and Iglesia, E., **Journal of Physical Chemistry B 107 (2003) 4118.** ("Zirconia-Supported MoO_x Catalysts for the Selective Oxidation of Dimethylether to Formaldehyde: Structure, Redox Processes, and Reaction Pathways") doi.org/10.1021/jp0221744

162. Li, L. and Iglesia, E., **Chemical Engineering Science 58 (2003) 1977.** ("Modeling and Characterization of Hydrogen Permeation through Proton-Electronic Conductors: Model Predictions and Experimental Hydrogen Permeation Rates") doi.org/10.1016/s0009-2509(03)00057-5

161. Waku, T., Yu, Sara and Iglesia, E., **Industrial and Engineering Chemistry 42 (2003) 3680.** ("Staged O_2 Introduction and Selective H_2 Combustion during Catalytic Reactions of Alkanes on Cation-Exchanged H-ZSM5") doi.org/10.1021/ie030255w

160. Liu, H. and Iglesia, E., **Journal of Physical Chemistry, B 107 (2003) 10840.** ("Selective One-Step Synthesis of Dimethoxymethane via Methanol or Dimethyl ether Oxidation on $H_{3+n}V_nMo_{12-n}PO_{40}$ Keggin Structures") doi.org/10.1021/jp0301554

159. Zalc, J.M., Reyes, S.C., and Iglesia, E., **Chemical Engineering Science 58 (2003) 4605.** ("Monte Carlo Simulations of Surface and Gas Phase Diffusion in Complex Porous Structures") doi.org/10.1016/j.ces.2003.07.008

158. Waku, T., Biscardi, J.A., and Iglesia, E., **Chemical Communications 1764 (2003)** ("Active, Selective, and Stable Pt/Na-[Fe]ZSM5 Catalyst for Dehydrogenation of Light Alkanes") doi.org/10.1039/b303506a

157. Liu, H., Cheung, P., and Iglesia, E., **Physical Chemistry and Chemical Physics 5 (2003) 3795.** ("Effects of Al_2O_3 Modifications on MoO_x and VO_x Catalysts for Dimethylether Oxidation to Formaldehyde") doi.org/10.1039/b302776g

156. Waku, T., Argyle, M.D., Bell, A.T., and Iglesia, E., **Industrial and Engineering Chemistry 42 (2003) 5462.** ("Effects of O_2 Concentration on the Rate and Selectivity in Oxidative Dehydrogenation of Ethane Catalyzed by Vanadium Oxide: Implications for O_2 Staging and Membrane Reactors") doi.org/10.1021/ie0304661

155. Liu, H. and Iglesia, E., **Angewandte Chemie International Edition 42, 5072 (2003)** ("Site Titration with Organic Bases During Catalysis: Selectivity Modifier and Structural Probe in Methanol Oxidation on Keggin Clusters") doi.org/10.1002/anie.200352393

154. Liu, H., Cheung, P., and Iglesia, E., **Physical Chemistry Chemical Physics 5 (2003) 3795.** ("Effects of Al_2O_3 Support Modification on MoO_x and VO_x Catalysts for Dimethylether Oxidation ot Formaldehyde"). doi.org/10.1039/b302776g

153. Ding, W., Meitzner, G.D., and Iglesia, E., **Journal of Catalysis 206 (2002) 14.** ("The Effects of Silanation of External Acid Sites on the Structure and Catalytic Behavior of Mo/H-ZSM5") doi.org/10.1006/jcat.2001.3457

152. Li, S., Ding, W., Meitzner, G.D., and Iglesia, E., **Journal of Physical Chemistry B 106 (2002) 85.** ("Spectroscopic and Transient Kinetic Studies of Site Requirements in Iron-Catalyzed Fischer-Tropsch Synthesis") doi.org/10.1021/jp0118827

151. Baertsch, C.D., Komala, K.T., Chua, Y.-H., and Iglesia, E., **Journal of Catalysis 205 (2002) 44.** ("Genesis of Bronsted Acid Sites during Dehydration of 2-Butanol on Tungsten Oxide Catalysts") doi.org/10.1006/jcat.2001.3426

150. Li, L., Borry, R.W., and Iglesia, E., **Chemical Engineering Science 57 (2002) 4595.** ("Design and Optimization of Catalysts and Membrane Reactors for the Non-Oxidative Conversion of Methane") doi.org/10.1016/S0009-2509(02)00314-7

149. Moden, B., DaCosta, P., Fonfe, B., Lee, D.K., and Iglesia, E., **Journal of Catalysis, 209 (2002) 75.** ("Kinetics and Mechanism of Steady-State NO Decomposition Reactions on Cu-ZSM5") doi.org/10.1006/jcat.2002.3622

148. Li, W., Yu, S.Y., and Iglesia, E., **Journal of Catalysis 207 (2002) 31.** ("Deuterium Isotopic Tracer Studies of Thiophene Desulfurization Pathways using Propane or Dihydrogen as Co-Reactants ") doi.org/10.1006/jcat.2001.3504

147. Yu. S.Y., Yu. G.J., Li, W., and Iglesia, E., **Journal of Physical Chemistry 106 (2002) 4714.** ("Kinetics and Reaction Pathways for Propane Dehydrogenation and Aromatization on Co/H-ZSM5 and H-ZSM5") doi.org/10.1021/jp013245m

146. Yu, S.Y., Garcia-Martinez, J., Li, W., Meitzner, G.D., and Iglesia, E., **Physical Chemistry and Chemical Physics 4 (2002) 1241.** ("Kinetic, Infrared and X-Ray Absorption Studies of Adsorption, Desorption, and Reactions of Thiophene on H-ZSM5 and Co/H-ZSM5") doi.org/10.1039/b108640p

145. Chen, K., Bell, A.T., and Iglesia, E., **Journal of Catalysis 209 (2002) 35**. ("The Relationship between the Electronic and Redox Properties of Dispersed Metal Oxides and their Turnover Rates in Oxidative Dehydrogenation Reactions") doi.org/10.1006/jcat.2002.3620

144. Argyle, M.D., Chen, K., Iglesia, E., and Bell, A.T., **Journal of Catalysis 208 (2002) 139.** ("Effect of Catalyst Structure on Oxidative Dehydrogenation of Ethane and Propane on Alumina-Supported Vanadia") doi.org/10.1006/jcat.2002.3570

143. Krishnamoorthy, S., Li, A., and Iglesia, E., **Catalysis Letters 80 (2002) 77.** ("Pathways for CO_2 Formation and Conversion During Fischer-Tropsch Synthesis on Iron-Based Catalysts") doi.org/10.1023/a:1015382811877

142. Modén, B., Da Costa, P., Lee, D.K., and Iglesia, E., **Journal of Physical Chemistry 106 (2002) 9633** ("Transient Studies of Oxygen Removal Pathways and Redox Cycles during NO Decomposition on Cu-ZSM5") doi.org/10.1021/jp020731g

141. Krishnamoorthy, S., Pinna, D., Ojeda, M., and Iglesia, E., **Journal of Catalysis 211 (2002) 422.** ("An Investigation of the Effects of Water on Rate and Selectivity for the Fischer-Tropsch Synthesis on Cobalt-Based Catalysts") doi.org/10.1006/jcat.2002.3749

140. Argyle, M.D., Chen, K., Bell, A.T., and Iglesia, E., **Journal of Physical Chemistry B 106 (2002) 5421.** ("Ethane Oxidative Dehydrogenation Pathways on Vanadium Oxide Catalysts") doi.org/10.1021/jp0144552

139. Liu, H. and Iglesia, E., **Journal of Catalysis 208 (2002) 1.** (Priority Communication: "Selective Oxidation of Dimethylether to Formaldehyde on Small Molybdenum Oxide Domains") doi.org/10.1006/jcat.2002.3574

137. Liu, Z., Li, L., and Iglesia, E., **Catalysis Letters 82 (2002) 175.** ("Catalytic Pyrolysis of Methane on Mo/H-ZSM5 with Continuous Hydrogen Removal by Permeation through Dense Oxide Films") doi.org/10.1023/a:1020510810548

137. Liu, Z., Nutt, M.A., and Iglesia, E., **Catalysis Letters 81 (2002) 271.** ("The Effects of CO_2, CO and H_2 Co-Reactant Effects on Methane Reactions Catalyzed by Mo/H-ZSM5") doi.org/10.1023/a:1016553828814

136. Li, S., Krishnamoorthy, S., Li, A., Meitzner, G.D., and Iglesia, E., **Journal of Catalysis 206 (2002) 202.** ("Promoted Iron-Based Catalysts for the Fischer-Tropsch Synthesis: Synthesis, Site Densities, and Catalytic Properties") doi.org/10.1006/jcat.2001.3506

135. Da Costa, P., Moden, B., Meitzner, G.D., Lee, D.K., and Iglesia, E., **Physical Chemistry and Chemical Physics 4 (2002) 4590.** ("Spectroscopic and Chemical Characterization of Active Cu Species in NO Decomposition Catalysts Based on Cu-ZSM5") doi.org/10.1039/b203700a

134. Yu, S.Y., Biscardi, J.A., and Iglesia, E., **Journal of Physical Chemistry B 106 (2002) 9642.** (Kinetic Relevance of Hydrogen Desorption and Virtual Pressures During Catalytic Reactions of Light Alkanes") doi.org/10.1021/jp020780t

133. Hamakawa, S., Li, L., Li, A., and Iglesia, E., **Solid State Ionics 48 (2001) 71.** ("Synthesis and Hydrogen Permeation Properties of Membranes Based on Dense $SrCe_{0.95}Yb_{0.05}O_3$ Thin Films") doi.org/10.1016/S0167-2738(02)00047-4

132. Li, S., Li, A., Krishnamoorthy, S., and Iglesia, E., **Catalysis Letters, 77 (2001) 197.** ("Effects of Zn, Cu and K Promoters on the Structure, and on the Reduction, Carburization, and Catalytic Behavior of Iron-based Fischer-Tropsch Synthesis Catalysts") doi.org/10.1023/a:1013284217689

131. Lu, E.C. and Iglesia, E., **Journal of Materials Science 36 (1), 77 (2001)** ("Synthesis of Yttria-Doped Strontium-Zirconium Oxide Powders via Ammonium Glycolate Combustion Methods as Precursors for Dense Ceramic Membranes") doi.org/10.1023/a:1004886608705

130. Stallons, J.M. and Iglesia, E., **Chemical Engineering Science 56 (2001) 4205.** ("Simulations of the Structure and Properties of Amorphous Silica Surfaces") doi.org/10.1016/s0009-2509(01)00021-5

129. Li, L., Borry, R.W., and Iglesia, E., **Chemical Engineering Science 56(5), 1869 (2001)** ("Reaction-Transport Simulations of Non-Oxidative Methane Conversion with Continuous Hydrogen Removal – Homogeneous – Heterogeneous Reaction Pathways") doi.org/10.1016/s0009-2509(00)00465-6

128. Li, W., Yu, S.Y., Meitzner, G.D., and Iglesia, E., **Journal of Physical Chemistry B 105 1176 (2001)** ("Structure and Properties of Cobalt-Exchanged H-ZSM5 Catalysts for the Dehydrogenation and Dehydrocyclization of Alkanes") doi.org/10.1021/jp002102h

127. Chen, K. Iglesia, E., and Bell, A.T., **Journal of Physical Chemistry B 105 (2001) 646** ("Isotopic Tracer Studies of Reaction Pathways for Propane Oxidative Dehydrogenation on Molybdenum Oxide Catalysts") doi.org/10.1021/jp002100x

126. Baertsch, C.D., Soled, S.L., and Iglesia, E., **Journal of Physical Chemistry B 105 (2001) 1320.** ("Isotopic and Chemical Titration of Acid Sites in Tungsten Oxide Domains Supported on Zirconia") doi.org/10.1021/jp003073d

125. Chen, K., Xie, S., Bell, A.T., and Iglesia, E., **Journal of Catalysis 198 (2001) 232.** ("Structure and Properties of Oxidative Dehydrogenation Catalysts Based on MoO_3/Al_2O_3") doi.org/10.1006/jcat.2000.3125

124. Ding, W., Li, S., Meitzner, G.D., and Iglesia, E., **Journal of Physical Chemistry B 105 (2001) 506.** ("Methane Conversion to Aromatics on Mo/H-ZSM5: Structure of Molybdenum Species in Working Catalysts") doi.org/10.1021/jp0030692

123. Xie, S., Iglesia, E., and Bell, A.T., **Journal of Physical Chemistry B 105 (2001) 5144.** ("Effect of Temperature on the Raman Spectra and Dispersed Oxides") doi.org/10.1021/jp004434s

122. Ding, W., Meitzner, G.D., and Iglesia, E., **Journal of Physical Chemistry B 105 (2001) 3928.** ("Synthesis, Structural Characterization, and Catalytic Properties of Tungsten-Exchanged HZSM-5") (*Special Festschrift Issue in Honor of Professor John Yates) doi.org/10.1021/jp003413v

121. Li, L. and Iglesia, E., **Studies of Surface Science and Catalysis 136 (2001) 357.** ("Synthesis and Characterization of Proton Conducting Oxides as Hydrogen Transport Membranes") doi.org/10.1016/s0376-7388(03)00343-0

120. Li, S., Meitzner, G.D., and Iglesia, E., **Studies of Surface Science and Catalysis 136 (2001) 387.** ("Fischer-Tropsch Synthesis Catalysts Based on Fe oxides Modified by Cu and K: Structure and Site Requirements")

119. Chen, K., Bell, A.T., and Iglesia, E., **Studies of Surface Science and Catalysis 136 (2001) 507.** ("Structure and Properties of MoO_3 Catalysts for Oxidative Dehydrogenation of Propane") doi.org/10.1006/jcat.1999.2720

118. Li, S., Meitzner, G.D., and Iglesia, E., **Journal of Physical Chemistry B 105 (2001) 5743.** ("Structure and Site Evolution of Iron Oxide Catalyst Precursors during the Fischer-Tropsch Synthesis") doi.org/10.1021/jp010288u

117. Li, S., O'Brien, R.J., Meitzner, G.D., Hamdeh, H., Davis, B.H., and Iglesia, E., **Applied Catalysis A 219 (2001) 215.** ("Structural Analysis of Unpromoted Fe-Based Fischer-Tropsch Catalysts using X-Ray Absorption Spectroscopy") doi.org/10.1016/s0926-860x(01)00694-9

116. Li, W., Yu, S.Y., and Iglesia, E., **Journal of Catalysis 203 (2001) 175.** ("Isotopic Tracer Studies of Thiophene Desulfurization Pathways Using Hydrogen from Alkanes on H-ZSM5 and Co/H-ZSM5") doi.org/10.1006/jcat.2001.3309

115. Kim, Y.-H., Borry, R.W., and Iglesia, E., **Microporous Materials 35/36, 495 (2000)** ("Genesis of Methane Activation Sites in and Mo-Exchanged H-ZSM5 Catalysts") (*Special Issue in Honor of Werner O. Haag).

114. Xie, S., Chen, K., Bell, A.T., and Iglesia, E., **Journal of Physical Chemistry B 104 (2000) 10059.** ("Structural Characterization of Molybdenum Oxide Supported on Zirconia") doi.org/10.1021/jp002419h

113. Wilson, R.D., Barton, D.G., Baertsch, C.D., and Iglesia, E., **Journal of Catalysis 194 (2000) 175.** ("Reaction and Deactivation Pathways in Xylene Isomerization on Zirconia Modified by Tungsten Oxide") doi.org/10.1006/jcat.2000.2942

112. DiCosimo, J.I., Apesteguia, C.R., Gines, M.J.L., and Iglesia, E., **Journal of Catalysis 190 (2000) 261.** ("Structural Requirements and Reaction Pathways in Condensation Reactions of Alcohols on Mg_yAlO_x Catalysts") doi.org/10.1006/jcat.1999.2734

111. Chen, K., Xie, S., Iglesia, E., and Bell, A.T., **Journal of Catalysis 189 (2000) 421.** ("Structure and Properties of Zirconia-Supported Molybdenum Oxide Catalysts for Oxidative Dehydrogenation of Propane") doi.org/10.1006/jcat.1999.2720

110. Olthof, B., Khodakov, A., Bell, A.T., and Iglesia, E., **Journal of Physical Chemistry B 104 (2000) 1516.** ("Effects of Support Composition and Pretreatment Conditions on the Structure of Vanadia Dispersed on SiO_2, Al_2O_3, TiO_2, ZrO_2, and HfO_2") doi.org/10.1021/jp9921248

109. Baertsch, C. D., Barton, D. G., Wilson, R. D., Soled, S. L., and Iglesia, E., **Stud. Surface Sci. Catal. 130 (2000) 3225.** ("Structure and Surface Properties of ZrO2-supported WO3 Nanostructures") doi.org/10.1016/s0167-2991(00)80519-4

108. Chen, K., Bell, A.T., and Iglesia, E., **Journal of Physical Chemistry B 104 (2000) 1292.** ("Kinetics and Mechanism of Oxidative Dehydrogenation of Propane on Vanadium, Molybdenum, and Tungsten Oxides") doi.org/10.1021/jp9933875

107. Chen, K., Iglesia, E., and Bell, A.T., **Journal of Catalysis 192 (2000) 197.** ("Kinetic Isotope Effects in Oxidative Dehydrogenation of Propane on Vanadium Oxide Catalysts") doi.org/10.1006/jcat.2000.2832

106. Li, W., Meitzner, G.D., Borry, R.W., and Iglesia, E., **Journal of Catalysis 191 (2000) 373.** ("Raman and X-ray Absorption Studies of Mo Species in Mo/H-ZSM5 Catalysts for Non-Oxidative CH_4 Reactions") doi.org/10.1006/jcat.1999.2795

105. Li, W., Meitzner, G.D., Borry, R.W., Kim, Y.-H., and Iglesia, E., **Stud. Surface Sci. Catal. 130 (2000) 3621.** ("The Location, Structure, and Role of MoO_x and MoC_x Species in Mo/H-ZSM5 Catalysts for Methane Aromatization Reactions")

104. Li, W., Yu, S.Y., and Iglesia, E., **Stud. Surface Sci. Catal. 130 (2000) 899.** ("Coupling Alkane Dehydrogenation with Hydrogenation Reactions on Cation-Exchanged Zeolites") doi.org/10.1016/s0167-2991(00)81073-3

103. Madon, R.J. and Iglesia, E., **Journal of Molecular Catalysis A 163 (2000) 189.** ("Catalytic Reaction Rates in Thermodynamically Non-Ideal Systems") (*Special Festschrift Issue in Honor of Professor Michel Boudart) doi.org/10.1016/s1381-1169(00)00386-1

102. Xie, S., Iglesia, E., and Bell, A.T., **Chemistry of Materials 12 (2000) 2442**. ("Water-Assisted Tetragonal to Monoclinic Transformation of Zirconia at Low Temperatures") doi.org/10.1021/cm000212v

101. Xie, S., Iglesia, E., and Bell, A.T., **Langmuir 16 (2000) 7162.** ("The Effects of Hydration and Dehydration on the Structure of Silica-Supported Vanadia Species") doi.org/10.1021/la0003342

100. Chen, K., Xie, S., Bell, A.T., and Iglesia, E., **Journal of Catalysis 195 (2000) 244.** ("Alkali Effects on Molybdenum Oxide Catalysts for Oxidative Dehydrogenation of Propane") doi.org/10.1006/jcat.2000.3025

99. Kim, Y.-H., Borry, R.W., and Iglesia, E., **Journal of Industrial and Engineering Chemistry 6 (2000) 72**. ("Catalytic Properties of Mo/H-ZSM5 for Methane Aromatization")

98. Barton, D.G., Soled, S.L., Meitzner, G.D., Fuentes, G.A., and Iglesia, E., **Journal of Catalysis 181 (1999) 57.** ("Structural and Catalytic Characterization of Solid and Acids Based on Zirconia Modified by Tungsten Oxide") doi.org/10.1021/jp983555d

97. Khodakov, A., Olthof, B., Bell, A.T., and Iglesia, E., **Journal of Catalysis 181 (1999) 205.** ("Structure and Catalytic Properties of Supported Vanadium Oxides: Support Effects on Oxidative Dehydrogenation Reactions") doi.org/10.1006/jcat.1998.2295

96. Barton, D. G., Shtein, M., Wilson, R. D., Soled, S. L., Iglesia, E., **Journal of Physical Chemistry B, 103(4) (1999) 630-640.** ("Structure and Electronic Properties of Solid Acids Based on Tungsten Oxide Nanostructures") doi.org/10.1021/jp983555d

95. Meitzner, G.D. and Iglesia, E, **Catalysis Today 53 (1999) 433.** ("New Insights into Methanol Synthesis Catalysts from X-Ray Absorption Spectroscopy") doi.org/10.1016/s0920-5861(99)00135-2

94. Au-Yeung, J., Bell, A.T., and Iglesia, E., **Journal of Catalysis 185 (1999) 213**. ("The Dynamics of Oxygen Exchange with Zirconia-Supported PdO") doi.org/10.1006/jcat.1999.2512

93. Au-Yeung, J., Iglesia, E., and Bell, A.T., **Journal of Catalysis 188 (1999) 132.** ("Isotopic Studies of Methane Oxidation Pathways on PdO Catalysts") doi.org/10.1006/jcat.1999.2643

92. Biscardi, J.A. and Iglesia, E., **Journal of Catalysis 182 (1999) 117.** ("Reaction Pathways and Rate-Determining Steps in Reactions of Alkanes on H-ZSM5 and Zn/H-ZSM5 Catalysts").

91. Chen, K., Khodakov, A., Yang, J., Bell, A.T., and Iglesia, E., **Journal of Catalysis, 186 (1999) 325.** ("Isotopic Tracer and Kinetic Studies of Oxidative Dehydrogenation Pathways on Vanadium Oxide Catalysts") doi.org/10.1006/jcat.1999.2510

90. Borry, R.W., Kim, Y.-H., Huffsmith, A., Reimer, J.A., and Iglesia, E., **Journal of Physical Chemistry B, 103 (1999) 5787** ("Structure and Optimal Density of Mo and Acid Sites in Mo-Exchanged H-ZSM5 Catalysts for Nonoxidative Methane Conversion").

89. Biscardi, J.A. and Iglesia, E., **Physical Chemistry and Chemical Physics 1 (1999) 5753.** ("Non-Oxidative Reactions of Propane on Zn/Na-ZSM5") doi.org/10.1039/a906550d

88. Xu, M. and Iglesia, E., **Journal of Catalysis 188 (1999) 125**. ("Carbon-Carbon Bond Formation Pathways in CO Hydrogenation to Higher Alcohol Synthesis") doi.org/10.1006/jcat.1999.2650

87. Rulkens, R., Male, J.L., Terry, K.W., Olthof, B., Khodakov, A., Bell, A.T., Iglesia, E., and Tilley, T.D., **Chemistry of Materials, 11 (1999) 2966.** (Vanadyl *tert*-Butoxy Orthosilicate, $OV[OSi(O^tBu)_3]_3$: A Model for Isolated Vanadyl Sites on Silica and a Precursor to Vanadia-Silica Xerogels").

86. Yu, S. Y., Li, W., and Iglesia, E., **Journal of Catalysis, 187 (1999) 257**. ("Desulfurization of Thiophene via Hydrogen Transfer from Alkanes on Cation-Modified ZSM5") doi.org/10.1006/jcat.1999.2668

85. Fujimoto, K., Ribeiro, F.H., Avalos-Borja, M., and Iglesia, E., **Journal of Catalysis 179 (1998) 431.** ("Structure and Reactivity of PdO_x/ZrO_2 Catalysts for Methane Combustion at Low Temperatures") doi.org/10.1006/jcat.1998.2178

84. Xu, M. and Iglesia,E., **Catal. Lett**. **51 (1998) 47.** ("Initial Carbon-Carbon Bond Formation during Synthesis Gas Conversion to Higher Alcohols on K-Cu-Mg_5CeO_x").

83. Di Cosimo, J.L., Diez, V.K., Apesteguia, C.R., Xu, M., and Iglesia, E., **Journal of Catalysis 178 (1998) 499.** ("Structure and Surface and Catalytic Properties of Mg-A1 Basic Oxides") doi.org/10.1006/jcat.1998.2161

82. Hilmen, A.-M., Gines, M.J.L., Xu, M., and Iglesia, E., **Applied Catalysis 169 (1998) 355.** ("Synthesis of Higher Alcohols on Copper Catalysts Supported on Alkali-Promoted Basic Oxides") doi.org/10.1016/s0926-860x(98)00025-8

81. Xu, M. and Iglesia, E., **Journal of Physical Chemistry B 102 (1998) 961.** ("Readsorption and Adsorption-Assisted Desorption of Carbon Dioxide on Basic Solids") doi.org/10.1021/jp972200b

80. Barton, D.G., Soled, S.L., and Iglesia, E., **Topics in Catalysis 6 (1998) 87.** ("Solid Acids Based on Supported Tungsten Oxides") doi.org/10.1023/a:1019126708945

79. Khodakov, A., Yang, J., Su, S., Bell. A.T., and Iglesia, E., **Journal of Catalysis 177 (1998) 343**. ("Structure and Properties of Vanadium Oxide/Zirconia Catalysts for Propane Oxidative Dehydrogenation") doi.org/10.1006/jcat.1998.2143

78. Biscardi, J.A., Meitzner, G.D., and Iglesia, E., **Journal of Catalysis 179 (1998) 192**. ("Structure and Density of Active Zn Species in Zn/H-ZSM5 Propane Aromatization Catalysts") doi.org/10.1006/jcat.1998.2177

77. Gines, M.J.L., Oh H.-S., Xu, M., Hilmen, A.-M., and Iglesia, E., **Stud. Surface Sci. Catal. 119 (1998) 509.** ("Isobutanol and Methanol Synthesis on Copper Supported on Alkali-Modified MgO and ZnO Supports").

76. Iglesia, E., Wang, T., and Yu, S.Y., **Stud. Surface Sci. Catal. 119 (1998) 527**. ("Chain Growth Reactions of Methanol on SAPO-34 and H-ZSM5") doi.org/10.1016/s0167-2991(98)80485-0

75. Borry, R.W., Lu, E.C., Kim, Y.H., and Iglesia, E., **Stud. Surface Sci. Catal. 119 (1998) 403**. ("Non-Oxidative Catalytic Conversion of Methane with Continuous Hydrogen Removal").

74. Biscardi, J.A. and Iglesia, E., **Journal of Physical Chemistry B 102 (1998) 9284.** ("Isotopic Tracer Studies of Propane Reactions on H-ZSM5 Zeolite") doi.org/10.1021/jp9824860

73. Fiato, R.A., Iglesia, E., Rice, G.W., and Soled, S.L., **Studies in Surface Science and Catalysis 114 (1998) 339.** ("Iron-Catalyzed CO_2 Hydrogenation to Liquid Hydrocarbons").

72. Gines, M.J.L. and Iglesia, E., **Journal of Catalysis 176 (1998) 155.** ("Bifunctional Condensation Reactions of Alcohols on Basic Oxides Modified by Copper and Potassium") doi.org/10.1006/jcat.1998.2009

71. Cosimo, J.I., Diez, V.K., Apesteguia, C.R., Gines, M.J.L., Xu, M., and Iglesia, E., **Proc. 16th Iberoam. Catal. Symp., pp. 1425-30 (1998)** (Centeno, A., et al, Eds.) ("Effect of Surface Acid-Base Properties on the Condensation of Linear Alcohols on Mixed Oxides Prepared from Hydrotalcite Precursors")

70. Reyes, S.C. Sinfelt, J.H., DeMartin, G.J., Ernst, R.H., and Iglesia, E., **Journal of Physical Chemistry 101 (1997) 614.** ("Frequency Modulation Methods for Diffusion and Adsorption in Porous Solids") doi.org/10.1021/jp961036+

69. Iglesia, E., **Applied Catalysis, 161 (1997) 1.** ("Design, Synthesis, and Use of Cobalt-Based Fischer-Tropsch Synthesis Catalysts") doi.org/10.1016/s0926-860x(97)00186-5

68. Iglesia, E., Barton, D.G., Biscardi, J.A., and Soled, S.L., **Catalysis Today 38 (1997) 339** (1997). ("Bifunctional Pathways in Catalysis by Acids and Bases") doi.org/10.1016/s0920-5861(97)81503-7

67. Fujimoto, K., Ribeiro, F.H., Avalos-Borja, M., and Iglesia, E., **ACS Div. Petr. Chem. Prepr., 42 (1997) 190**. ("Structure and Catalytic Properties of PdO_x/ZrO_2 Catalysts for Methane Oxidation at Low Temperatures") doi.org/10.1006/jcat.1998.2178

66. Xu, M., Gines, M.L., Stephens, B.L., Hilmen, A.-M., and Iglesia, E., **Journal of Catalysis 171 (1997) 130** ("Isobutanol and Methanol Synthesis on Copper Supported on Magnesium Oxide") doi.org/10.1006/jcat.1997.1777

65. Iglesia, E., **Stud. Surface Sci. Catal. 107, 153 (1997)** ("Selectivity Control and Catalyst Design in the Fischer-Tropsch Synthesis: Sites, Pellets and Reactors") doi.org/10.1016/s0360-0564(08)60579-9

64. Biscardi, J.A. and Iglesia, E., **Catalysis Today 31 (1996) 207.** ("Structure and Function of Metal Cations in Light Alkane Reactions Catalyzed by Modified ZSM-5").

63. Iglesia, E., Barton, D.G., Soled, S.L., Miseo, S., Baumgartner, J.E., Gates, W.E., Fuentes, G.A., and Meitzner, G.D., in **Proceedings 11th International Congress of Catalysis; Studies in Surface Science and Catalysis 101 (1996) 533** ("Selective Isomerization of Alkanes on Supported Tungsten Oxide Acids") doi.org/10.1016/s0167-2991(96)80264-3

62. Fujimoto, K., Ribeiro, F.H., Bell, A.T., and Iglesia, E., **ACS Div. Petr. Chem. Prepr. 41 (1996) 110.** ("Reaction Pathways and Structural Requirements in the Catalytic Oxidation of Methane at Low Temperatures").

61. Iglesia, E., **Actas XV Iberoam. Symp. Catal. (Herrero E. and Anunziata, O., Eds.) Vol. I (1996) 17.** (Plenary Manuscript: "The Fischer-Tropsch Synthesis: Structural Requirements, Mechanistic Details, and Catalyst Design").

60. Xu, M., Stephens, B.L., Gines, M.L., and Iglesia, E., **Proc. 13th Intern. Coal Conference, pp. 1238-1246 (S.H. Chiang, Ed.) (1996).** ("Reaction Pathways and Structural Requirements in the Synthesis of Isobutanol from CO and Hydrogen").

59. Iglesia, E., Soled, S.L., Baumgartner, J.E., and Reyes, S.C., **Topics in Catalysis 2 (1995) 17.** ("Synthesis and Catalytic Properties of Eggshell Catalysts for the Fischer-Tropsch Synthesis").

58. Soled, S.L., Iglesia, E., Baumgartner, J.E., and Reyes, S.C., **Stud. Surface Sci. Catal. 91 (1995) 989.** ("Synthesis of Eggshell Cobalt Catalysts by Molten Salt Impregnation Techniques") doi.org/10.1016/s0167-2991(06)81842-2

57. Iglesia, E., Soled, S.L., Baumgartner, J.E., and Reyes, S.C., **Journal of Catalysis 153 (1995) 108**. ("Synthesis and Catalytic Properties of Eggshell Cobalt Catalysts for the Fischer-Tropsch Synthesis") doi.org/10.1006/jcat.1995.1113

56. Soled, S.L., Iglesia, E., Miseo, S., DeRites, B.A., and Fiato, R.A. **Topics in Catalysis 2 (1995) 193**. ("Selective Synthesis of α-Olefins on Fe-Zn Fischer-Tropsch Catalysts").

55. Soled, S.L., Baumgartner, J.E., Reyes, S.C., and Iglesia, E., **Materials Research Society Symposium Proceedings, Iglesia, E., Lednor, P.W., Nagaki, D.A., and Thompson, L.T., eds., 368 (1995) 113.** ("Synthetic Design of Cobalt Fischer-Tropsch Synthesis Catalysts") doi.org/10.1557/proc-368-113

54. Soled, S.L., Miseo, S., Baumgartner, J.E., Gates, W.E., Barton, D.G., and Iglesia, E., **Proc. 13th Intern. Conf. Catal. ("New Trends in Solid Superacids and Superbases")** (Izumi, Y., Ampo, M., and Izumi, Eds."). The Tanaguchi Foundation (1994) ("Comparison of Strong Solid Acids Based on Sulfate and Tungstate-Modified Zirconia").

53. Iglesia, E., Soled, S.L., and Fiato, R.A., in **"Natural Gas Conversion II," Proc. 3rd Nat. Gas Conv. Symp., 81 (1994) 433**. ("Dispersion, Support, and Bimetallic Effects in CO Hydrogenation on Cobalt Catalysts").

52. Soled, S. L., Iglesia, E., and Kramer, G. M**., Stud. Surf. Sci. Catal. (Acid-Base Catalysis II) 90 (1994) 531.** ("Modification of Isomerization Activity and Selectivity over Sulfated Zirconia Catalyst") doi.org/10.1016/s0167-2991(08)61869-8

51. Madon, R.J., and Iglesia, E., **Journal of Catalysis, 149 (1994) 428**. ("Hydrogen and CO Intrapellet Diffusion Effects in Ru-Catalyzed Hydrocarbon Synthesis") doi.org/10.1006/jcat.1994.1309

50. Iglesia, E., Baumgartner, J., and Meitzner, G.D., in **"New Frontiers in Catalysis" (Proc. 10th Intern Congr. Catal.),** Guczi, L. Solymosi, F., and Tetenyi, P. Eds. p. 2353. Akademiai Kiaido, Budapest 1993. (Also Stud. Surf. Sci. Catal. 75 (1993) 2353). ("The Role of Surface Fugacities and of Hydrogen Desorption Sites in Catalytic Reactions of Alkanes") doi.org/10.1016/s0167-2991(08)64298-6

49. Reyes, S.C., Duran, M.A., and Iglesia, E., in **Proc. XIII Iberoamerican Symp. Catal., Vol. II, pp. 705-710 (1993).** (Segovia, Spain, 1992). ("Structural Models of Porous Networks and the Optimization of Catalytic Rates and Selectivity")

48. Reyes, S.C., Iglesia, E., and Kelkar, C.P., in **Proc. XIII Iberoamerican Symp. Catal., Vol. I, pp. 473-478 (1993).** (Segovia, Spain, 1992). ("Kinetic-Transport Models of Coupled Thermal-Catalytic Reactions. Oxidative Coupling Reactions of Methane") doi.org/10.1021/ie060151w

47. Iglesia, E., Baumgartner, J., in **"New Frontiers in Catalysis" (Proc. 10th Intern Congr. Catal.)**, Guczi, L. Solymosi, F., and Tetenyi, P. Eds. p. 993. Akademiai Kiaido, Budapest 1993. (Also Stud. Surf. Sci. Catal. 75 (1993) 993). ("A Mechanistic Proposal for Alkane Dehydrocyclization Rates on Pt/L-Zeolite. Inhibited Deactivation of Pt Sites Within One-Dimensional Zeolite Channels").

46. Reyes, S.C. and Iglesia, E., **in "Computer Aided Design of Catalysts", Chapter 5, p. 89.** (R.E. Becker and C.J. Pereira, eds.) Marcel Dekker, New York, 1993. ("Simulation Techniques for the Design and Characterization of Catalyst Pellets").

45. Iglesia, E., Baumgartner, J., in **Proceedings 9th International Zeolite Conference, Vol. II, p. 421** (von Ballmoos, R., Higgins, J.B., and Treacy, M.M.J., Eds.) Butterworth, 1993. ("Inhibited Deactivation of Pt Sites Within One-Dimensional L-Zeolite Channels").

44. Iglesia, E., Reyes, S.C., and Madon, R.J., in **"Advances in Catalysis and Related Subjects" (Eley, D.D., Weisz, P.B., and Pines, H., eds.) Vol. 39, p. 221. Academic Press, 1993**. ("Selectivity Control and Catalyst Design in the Fischer-Tropsch Synthesis. Sites, Pellets, and Reactors") doi.org/10.1016/s0360-0564(08)60579-9

43. Reyes, S.C., Iglesia, E., and Kelkar, C.P., **Chemical Engineering Science 48 (1993) 2643**. ("Reaction-Transport Models of Bimodal Reaction Sequences. Oxidative Coupling of Methane").

42. Madon, R.J., Iglesia, E., and Reyes, S.C., **ACS Symp. Series "Selectivity in Catalysis" (Davis, M.E. and Suib, S.L., eds.) Vol. 517, Chapter 27, p. 383**. American Chemical

Society, Washington, D.C., 1993. ("Carbon Number Distributions of Fischer-Tropsch Synthesis Products on Co, Ru, and Fe Catalysts")

41. Madon, R.J. and Iglesia, E., **Journal of Catalysis 139 (1993) 576**. ("The Importance of Olefin Readsorption and H_2/CO Reactant Ratio for Hydrocarbon Chain Growth on Ruthenium Catalysts").

40. Meitzner, G.D., Iglesia, E., Baumgartner, J.E., and Huang, E.S., **Journal of Catalysis 140 (1993) 209**. ("The Chemical State of Ga in Working Propane Dehydrocyclodimerization Catalysts. In-Situ X-Ray Absorption Spectroscopy Studies").

39. Iglesia, E. and Reyes, S.C., **Computer-Aided Innovation of New Materials II (Doyana, M., Kihara, J., Tanaka, M., and Yamamoto, R., Eds.) p. 1053. Elsevier, 1993**. ("Structural and Reaction Models for the Design and Optimization of Catalytic Sites, Pellets, and Reactors").

38. Reyes, S.C. Kelkar, C.P., and Iglesia, E., **Catal. Let. 19 (1993) 167.** ("Kinetic-Transport Models and the Design of Catalysts and Reactors for Oxidative Coupling of Methane").

37. Reyes, S.C. and Iglesia, E., **Computer-Aided Innovation of New Materials II (Doyana, M., Mihara, J., Tanaka, M., and Yamamoto, R., eds.) p. 1007**. Elsevier, 1993. ("Simulation Techniques for the Design and Optimization of Structural and Transport Properties of Mesoporous Materials").

36. Iglesia, E. and Reyes, S.C., **Catalysis, Specialist Periodical Reports**, **(Spivey, J.J., ed.) Vol. 11, (1993).** Royal Society of Chemistry, Thomas Graham House, Cambridge, UK. ("Frequency Response Techniques for the Characterization of Porous Catalytic Solids").

35. Iglesia, E. and Baumgartner, J.E., **Catalysis Letters 21 (1993) 55.** ("Hydrogen Transfer and Activation of Propane and Methane on ZSM5-Based Catalysts").

34. Iglesia, E., Soled, S.L., Fiato, R.A., and Via, G.H., **Journal of Catalysis 143 (1993) 345**. ("Bimetallic Synergy in Cobalt-Ruthenium Fischer-Tropsch Synthesis Catalysts") doi.org/10.1006/jcat.1993.1281

33. Iglesia, E., Soled, S.L., and Kramer, G.M., **Journal of Catalysis 144 (1993) 238**. (Isomerization of Alkanes on Sulfated Zirconia. Promotion by Pt and by Adamantyl Hydride Transfer Transfer Species") doi.org/10.1006/jcat.1993.1327

32. Iglesia, E., Reyes, S.C., and Soled, S.L., in **"Computer Aided Design of Catalysts", Chapter 7, p. 199** (R.E. Becker and C.J. Pereira, eds.) Marcel Dekker, New York, 1993. ("Reaction-Transport Selectivity Models and the Design of Fischer-Tropsch Catalysts").

31. Iglesia, E. and Baumgartner, J.E., **ACS Div. Petrol. Chem. Preprints, 38 (1993) 746**. ("Hydrogen Transfer and Activation of Light Alkanes on H-ZSM5 Modified by Metal Cations")

30. Reyes, S.C., DeMartin, G., Kelkar, C.P., Ernst, R.H., and Iglesia, E., **ACS Div. Petrol. Chem. Preprints 34 (1993) 895**. ("Frequency Response Techniques for the Measurement of Diffusion and Adsorption within Porous Solids")

29. Iglesia, E., Baumgartner, J., and Price, G.L., **Journal of Catalysis 134 (1992) 549**. ("Hydrogen Surface Fugacities in Catalysis. Reactions of Alkanes on Te/NaX, H-ZSM5, and Ga/H-ZSM5").

28. Iglesia, E., Ribeiro, F.H., Boudart, M., and Baumgartner J.E., **Catalysis Today 15 (1992) 307**. ("Catalytic Reactions on Clean and Oxygen-Modified Tungsten Carbides", Special Issue on "High Surface Area Carbides and Nitrides").

27. Iglesia, E., Ribeiro, F.H., Boudart, M., and Baumgartner J.E., **Catalysis Today 15 (1992) 455**. ("Tungsten Carbides Modified by Chemisorbed Oxygen. A New Class of Bifunctional Catalysts", Special Issue: Proceedings Workshop on Advances in Catalyst Preparation).

26. Iglesia, E., Soled, S.L., and Fiato, R.A., **Journal of Catalysis 137 (1992) 212**. ("Fischer-Tropsch Synthesis on Cobalt and Ruthenium. Dispersion and Support Effects on Reaction Rate and Selectivity") doi.org/10.1016/0021-9517(92)90150-g

25. Resasco, D.E., Miranda, R., and Iglesia, E., **Catalysis Today 15 (1992) 339**. **Special Issue on "Recent Advances in Catalyst Preparation"**. ("Workshop on the Progress in Catalyst Preparation. Summary, Conclusions, and Recommendations").

24. Reyes, S.C. and Iglesia, E., **Chemical Engineering Science 46 (1991) 1089**. ("Monte Carlo Simulations of Structural Properties of Packed Beds") doi.org/10.1016/0009-2509(91)85102-4

23. Soled, S.L., Iglesia, E., Rice, G.W., and Fiato, R.A., in **Proceedings of the Seventh Annual International Coal Conference 1990, pp. 593-602 (1991)**. ("Selectivity Control in Fischer-Tropsch Synthesis")

22. Iglesia, E. Reyes, S.C., Madon, R.J., **Journal of Catalysis 129 (1991) 238**. ("Transport-Enhanced Olefin Readsorption Pathways in Ru-Catalyzed Hydrocarbon Synthesis") doi.org/10.1016/0021-9517(91)90027-2

21. Reyes, S.C., Iglesia, E., **Journal of Catalysis 129 (1991) 457**. ("Effective Diffusivities in Catalyst Pellets. New Model Porous Structures and Transport Simulation Techniques") doi.org/10.1016/0021-9517(91)90049-a

20. Ribeiro, F.H., Dalla-Betta, R.A., Boudart, M., Baumgartner, J.E., and Iglesia, E., **Journal of Catalysis 130 (1991) 86**. ("Reactions of Neopentane, Methylcyclohexane, and 3,3 Dimethylpentane on Tungsten Carbides. The Effect of Surface Oxygenon Reaction Pathways") doi.org/10.1016/0021-9517(91)90094-k

19. Ribeiro, F.H., Boudart, M., Dalla-Betta, R.A., and Iglesia, E., **Journal of Catalysis 130 (1991) 498**. ("Reactions of n-Hexane on Tungsten Carbides. The Effect of Surface Oxygen").

18. Madon, R.J., Iglesia, E., Reyes, S.C., **Journal of Physical Chemistry 95 (1991) 7795**. ("Primary and Secondary Reaction Pathways in Ru-Catalyzed Hydrocarbon Synthesis") doi.org/10.1021/j100173a046

17. Robbins, J.L., Iglesia, E., Kelkar, C.P., DeRites, B.A., **Catalysis Letters 10 (1991) 1**. ("Methanol Synthesis on Copper-Silica Catalysts")

16. Iglesia, E. and Boudart, M., **Journal of Physical Chemistry 95 (1991) 7011**. ("Structure-Sensitivity and Ensemble Effects in Reactions of Strongly Adsorbed Intermediates. Catalytic Dehydrogenation and Dehydration of Formic Acid on Nickel") doi.org/10.1021/j100171a053

15. Iglesia, E., Baumgartner, J., Ribeiro, F.H., Boudart, M., **Journal of Catalysis 131 (1991) 523**. ("Bifunctional Alkane Rearrangement Pathways on Tungsten Carbides Modified by Chemisorbed Oxygen") doi.org/10.1016/0021-9517(91)90284-b

14. Iglesia, E., Baumgartner, J., Price, G.L., Robbins, J.L., and Rose, K.D., **Journal of Catalysis 125 (1990) 95**. ("Alkane Rearrangement Pathways on Tellurium-Based Catalysts") doi.org/10.1016/0021-9517(90)90081-t

13. Reyes, S.C., Iglesia, E., Chiew, Y.C., **in Proceedings of the Materials Research Society 195 (1990) 553**. ("Monte Carlo Simulations of Effective Diffusivities in Three-Dimensional Pore Structures").

12. Soled, S.L., Iglesia, E., Fiato, R.A., **Catalysis Letters 7 (1990) 271**. ("Activity and Selectivity Control in Iron-Catalyzed Fischer-Tropsch Synthesis")

11. Iglesia, E. and Price, G.L., **Ind. Eng. Chem. Res. 28 (1989) 839**. ("A Matrix Method for Correction of Mass Spectra in Deuterium-Exchange Applications") doi.org/10.1021/ie00090a028

10. Reyes, S.C., Iglesia, E., and Jensen, K.F., **Solid State Ionics 32/33 (1989) 833**. ("Application of Percolation Concepts to the Analysis of Gas-Solid Reactions").

9. Price, G.L, and Iglesia, E., **Ind. Eng. Chem. Res. 28 (1989) 1089**. ("Use of CI-MS for the Determination of Deuterium Content in Hydrocarbons I. The Boundary Method for Hydrogen Abstraction Spectra").

8. Price, G.L, and Iglesia, E., **Ind. Eng. Chem. Res. 28 (1989) 1688**. ("Use of CI-MS for the Determination of Deuterium Content in Hydrocarbons II. Solutions for Systems Involving Multiple Ionization Processes") doi.org/10.1021/ie00095a019

7. Iglesia, E., in **Proc. XI Iberoam. Catal. Symp. p. 496 (1988)**. ("Copper Characterization by Chemisorptive Titration and Catalytic Reaction Techniques").
6. Iglesia, E. and Boudart, M., **Journal of Physical Chemistry 90 (1986) 5272**. ("Unimolecular and Bimolecular Formic Acid Decomposition on Copper").
5. Iglesia, E. and Boudart, M., **Journal of Catalysis 88 (1984) 325**. ("Decomposition of Formic Acid on Copper, Nickel, and Copper-Nickel Alloys IV. Temperature-Programmed Decomposition of Bulk Nickel Formate and of Formic Acid Preadsorbed on Nickel Powder").
4. Wachs, I.E., Dwyer, D.J., and Iglesia, E., **Applied Catalysis 12 (1984) 201**. ("Characterization of Fe, Fe-Cu, and Fe-Ag Fischer-Tropsch Catalysts") doi.org/10.1016/s0166-9834(00)80291-2
3. Iglesia, E. and Boudart, M., **Journal of Catalysis 81 (1983) 204**. ("Decomposition of Formic Acid on Copper, Nickel, and Copper-Nickel Alloys I. Preparation and Characterization of Catalysts") doi.org/10.1016/0021-9517(83)90158-6
2. Iglesia, E. and Boudart, M., **Journal of Catalysis 81 (1983) 214**. ("Decomposition of Formic Acid on Copper, Nickel, and Copper-Nickel Alloys II. Catalytic and Temperature-Programmed Decomposition of Formic Acid on Cu/SiO_2, Cu/Al_2O_3, and Cu Powder") doi.org/10.1016/0021-9517(83)90159-8
1. Iglesia, E. and Boudart, M., **Journal of Catalysis 81 (1983) 224**. ("Decomposition of Formic Acid on Copper, Nickel, and Copper-Nickel Alloys III. Catalytic Decomposition on Nickel and Copper-Nickel Alloys").

PATENTS

50. Iglesia, E., Dellamorte, J.C., Fu, T., Dutta, B., and Guang, M., **WO2021/194663 (2021)** (" Catalyst Composiitons and Methods of Preparation and Use Thereof")
49. Iglesia, E. and Shangguan, J., **WO2022/132843 (2022)** ("Pre-treating Metal Oxide Catalysts for Alkane Dehydrogenation")
48. Iglesia, E., Dellamorte, J.C., Fu, T., and Dutta, B., **WO2021/1173333 (2021)** (" Catalyst Composiitons and Methods of Preparation Thereof")
47. Otto, T., Zones, S.I., and Iglesia, E., **U.S. Patent 10,512,904 (2019)** ("Zeolitic Materials Having Encapsulated Bimetallic Clusters").
46. Goel, S., Zones, S., and Iglesia, E., **U.S. Patent 9,938,157 (2018)** ("Interzeolite transformation and metal encapsulation in the absence of a structure directing agent").
45. Goel, S., Zones, S., and Iglesia, E., **U.S. Patent 9,802,831 (2017)** ("Synthesis of high silica zeolite via interzeolite transformation without organic structure directing agents").

44. Solovyov, A. Katz, A., and Iglesia, E., **U.S. Patent 8,808,655 (2014)** ("Bifunctional Active Sites for Adsorption of NO_x").

43. Solovyov, A., Katz, A., Iglesia, E., and Fanson, P., **U.S. Patent 8,703,083 (2014)** ("Bifunctional active sites for adsorption of NO_x")

42. Zhan, B.Z., Moden, B., Dakka, J., Santiesteban, J., Reyes, S. C., Iglesia; E., **U.S. Patent 7,868,201 (2011)** ("Process and catalyst for oxidation of hydrocarbons")

41. Ahn, J. Temel, B. and Iglesia, E., **U.S. Patent 7,825,287 (2010)** ("Process for Production of Triptane and Triptene")

40. Iglesia, E., Sunley, J. G., Law, D. J., and Bhan, A., **U.S. Patent 7,507,855 (2009)** ("Process for Carbonylation of Aliphatic Alcohols and/or Ester Derivatives Thereof").

39. Cheung, P., Bhan, A., Sunley, G.L., Law, D. and Iglesia, E., **U.S. Patent 7,465, 822 (2008)** ("Process for Carbonylation of Alkyl Ether").

38. Cheung, P., Bhan, A., Sunley, G., and Iglesia, E., **U.S. Patent 7,309,798 (2007)** ("Process for Carbonylation of Alkyl Ethers")

37. Liu, H. and Iglesia, E., **U.S. Patent 6,956,134 (2005)** ("Oxidation of Methanol and/or Dimethyl Ether using Molybdenum-Containing Heteropolyacid Catalysts").

36. Notestein, J.M., Katz, A. and Iglesia, E., **U.S. Patent 6,951,690 (2005)** ("Novel Immobilized Calixarenes And Related Compounds And Process For Their Production").

35. Katz, A. and Iglesia, E., **U.S. Patent 6,951,696 (2005)** ("Immobilized Calixarenes and Related Compounds and Process for their Production")

34. Liu, H. and Iglesia, E., **U.S. Patent 6,781,018 (2004)** ("Process and Catalysts for Formation of Formaldehyde from Dimethylether").

33. Kieken, L. Iglesia, E., Neurock, M, and Trenkle, J., **U.S. Patent 6,763,309 (2004)** ("Method and System for the Development of Materials")

32. Liu, H. and Iglesia, E., **U.S. Patent 6,781,018 (2004)** ("Process and Catalysts for Formation of Formaldehyde from Dimethylether").

31. Iglesia, E., Kieken, L.D., and Neurock, M., **U.S. Patent 6,647,342 (2003); PCT Application WO 03/020417** ("Knowledge-Based Process for the Development of Materials").

30. Loffler, D.G.; Faz, C.F.; Sokolovskii, V., and Iglesia, E., **WO 2002028769** A2 (PCT Int. Appl., 44 pp.), 4/11/2002 ("Catalytic separator plate reactor and method of catalytic reforming of fuel to hydrogen").

29. Loffler, D.G., Faz, C.E., Sokolovskii, V., and Iglesia, E., **U.S. Patent 7102-002 (2000); 0168308 (2002);** ("Catalytic Separator Plate Reactor and Method of Catalytic Reforming of Fuel for Hydrogen Production").

28. Soled, S.L., Gates, W.E., and Iglesia, E., **U.S. Patent 5,648,589 (1997)** "("Group VIII Metal-Containing Tungsten Oxide and Silica-Modified Zirconia as Acid Catalyst").

27. Soled, S.L., Iglesia, E., Fiato, R.A., and Ansell, G.B., **U.S. Patent 5,397,806 (1995).** ("A Method for Stabilizing Titania-Supported Cobalt Catalysts").

26. Soled, S.L., Iglesia, E., and Gates, W.E., **U.S. Patent 5,422,327 (1995).** ("Group VIII Metal-Containing Tungsten Oxide and Silica-Modified Zirconia as Acid Catalyst").

25. Herbolzheimer, E., and Iglesia, E., **U.S. Patent 5,348,982 (1994)**. ("Slurry Bubble Column Reactors").

24. Soled, S.L., Gates, W.E., and Iglesia, E., **Eur. Pat. Appl. 306593 (1993)** ("Isomerization Catalyst of Group VIII Metal/ZrO_2/SiO_2/WO_3 and Isomerization Process Using It").

23. Soled, S.L., Iglesia, E., and Fiato, R.A., **U.S. Patent 5,248,701 (1993)**. ("Substituted Cobalt Catalysts for the Fischer-Tropsch Synthesis").

22. Soled, S.L., Iglesia, E., Miseo, S., and Fiato, R.A., **US. Patent 5,185,378 (1993).** ("Process for Converting Syngas to Alpha-Olefins on an Iron-Zinc Catalyst").

21. Soled, S.L., Iglesia, E., and Fiato, R.A., **European Patent Appl. 307,115 (1992)** ("Catalysts for Fischer-Tropsch Processes").

20. Iglesia, E. and Madon, R.J., **European Patent Appl. 202,404 (1992)** ("Process for Reducing Methane Production and Increasing Liquid Yields in Fischer-Tropsch Reactions").

19. Soled, S.L., Iglesia, E., and Fiato, R.A., **U.S. Patent 5,162,284 (1992)**. ("Copper-Promoted Cobalt-Manganese Spinel Catalysts and Method for Preparing the Catalyst for Fischer-Tropsch Synthesis").

18. Soled, S.L., Iglesia, E., Miseo, S., and Fiato, R.A., **U.S. Patent 5,100,856 (1992)**. ("Iron-Zinc Catalysts for the Selective Conversion of Synthesis Gas to Alpha-Olefins").

17. Soled, S.L., Miseo, S., Iglesia, E., and Fiato, R.A., **Intern. Patent PCT/WO 92/05869 (1992)**. ("Iron-Zinc Based Catalysts and Conversion of Synthesis Gas to Alpha-Olefins Using These Catalysts").

16. Iglesia, E., Soled, S.L., Fiato, R.A., and Ansell, G.B., **U.S. Patent 5,169,821 (1992)**. ("Method for Stabilizing Titania-Supported Cobalt Catalysts and the Catalyst for Use in the Fischer-Tropsch Synthesis").

15. Soled, S.L., Iglesia, E., Fiato, R.A., and Ansell, G.B., **Eur. Pat. Appl. 92310296.6 (1992)** ("Titania-Supported Cobalt Catalysts").

14. Iglesia, E., Soled, S.L., Kramer, G.M., and Gates, W.E., **U.S. Patent 5,157,199 (1992) and European Patent 302,722 (1992)**. ("Isomerization of Paraffins with Strong Solid Acid and Added Adamantane").

13. Iglesia, E., Soled, S.L., Fiato, R.A., and Baumgartner, J.E., **U.S. Patent 5,118,715 (1992)**. ("Selective Fischer-Tropsch Synthesis with High Specific Surface Area, Cu- and K-promoted Iron-Manganese Spinels").

12. Herbolzheimer, E. and Iglesia, E., **Eur. Patent Appl. 450,859 (1992)**. ("Three-Phase Bubble Column Reactor with Added Solids for Improved Fluidization").

11. Herbolzheimer, E., Iglesia, E., and Kaiser, F.J., **U.S. Patent 5,157,054 (1992)**. ("Catalyst Fluidization Improvements").

10. Herbolzheimer, E. and Iglesia, E., **Eur. Pat. Appl. 302,710 (1991)**. ("Method of Operating a Slurry Bubble Column").

9. Iglesia, E., Wroman, H., Soled, S.L., Baumgartner, J.E., and Fiato, R.A., **U.S. Patent 5,036,032 (1991) and European Patent 313,466 (1991)**. ("Selective Catalysts and Their Preparation for Catalytic Hydrocarbon Synthesis").

8. Soled, S.L., Iglesia, E., Miseo, S., and Fiato, R.A., **Eur. Pat. Appl. 91916714.8 (1991)**. ("Iron-Zinc Based Catalysts and Conversion of Synthesis Gas to Alpha-Olefins Using These Catalysts").

7. Iglesia, E., Wroman, H., Soled, S.L., and Baumgartner, J.E., **Eur. Patent. Appl. 434,284A (1991)**. ("Production of Supported Cobalt Catalysts by Impregnation and Direct Reduction at Low Heating Rate").

6. Iglesia, E., Soled, S.L. and Fiato, R.A., **U.S. Patent 4,960,801 (1990)**. ("Synthesis Gas to Heavy Hydrocarbons on Silica-Promoted Co/TiO_2").

5. Iglesia, E., Soled, S.L., and Fiato, R.A., **U.S. Patent 4,822,824 (1989)**. ("Cobalt-Ruthenium Catalysts for Fischer-Tropsch Synthesis").

4. Iglesia, E., Soled, S.L. and Fiato, R.A., **U.S. Patent 4,794,099 (1989)**. ("Silica-Promoted Cobalt Catalyst on a Support of Titania for Converting Synthesis Gas to Heavy Hydrocarbons").

3. Fiato, R.A., Iglesia, E., Soled, S.L., **European Patent 363,537 (1988)**. ("Catalysts for Converting Synthesis Gas to Heavy Hydrocarbons").

2. Iglesia, E., Soled, S.L., and Fiato, R.A., **U.S. Patent 4,738,948 (1988); European Patent 319,625 (1989)** ("Cobalt-Ruthenium Catalysts for Fischer-Tropsch Synthesis and Process for their Preparation").

1. Iglesia, E. and Madon, R., **U.S. Patent 4,754,092 (1988)**. ("Reducing Methane Production and Increasing Liquid Yields in Fischer-Tropsch Reactions").