CURRICULUM VITAE

Enrique Iglesia

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BIRTH DATE: August 27, 1954, Havana, Cuba

EDUCATION: Ph.D., Chemical Engineering, 1982; **Stanford University**
(Advisor: 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:

Theodore Vermeulen Chair in Chemical Engineering (2009-date)
Chancellor Professor (2006-2009)
Professor of Chemical Engineering (1993-date)
Director, Berkeley Catalysis Center (2006-2015)
College of Chemistry, University of California at Berkeley

Chemical Sciences Division, E.O. Lawrence Berkeley National Laboratory
U.S. Department of Energy; Faculty Senior Scientist (1993-date)

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

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

HONORS AND AWARDS

Research

Fellow, National Academy of Inventors (2016)
Member, American Academy of Arts and Sciences (2015)
Fellow, **American Institute of Chemical Engineers** (2014)
Fellow, Japan Society for the Promotion of Science (2013)
Honorary Fellow, Chinese Chemical Society (2013)
ENI Prize, New Frontiers in Hydrocarbons (2012)
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)
Member, National Academy of Engineering (2008)
Humboldt Senior Scientist Research Award, Alexander von Humboldt Foundation (2007)
Doctor Honoris Causa, Universidad Politecnica de Valencia (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 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

Wolfgang Sachtler Inaugural Lecturer, Northwestern University (2017)
T.W. Leland Jr. 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)
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

17th International Congress on Catalysis, Meeting Chair (2020)
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, Canvassing Committee (2018-2019)
Vice Chair, Canvassing Committee (2017)
Peer Committee (2011-2014)

International Association of Catalysis Societies
Vice-President (2016-2020)
President (2020-2024)

North American and Catalysis Society
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

International Technology Advisory Board, **World Gold Council (2010-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, Sabic Industries, Nanostellar, Novodynamics, Novotec, Catalytica Energy Systems, Range Fuels, UPM**
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 was born in Havana, Cuba in 1954. He received a B.S. from Princeton University (1977) and a Ph.D. from Stanford University (1982) in Chemical Engineering. In 1993, he joined the University of California at Berkeley as Professor of Chemical Engineering, after eleven years of research and management experience at the Exxon Corporate Research Laboratories. He is currently the Theodore Vermeulen Chair in Chemical Engineering at the University of California at Berkeley and a Faculty Senior Scientist in the E.O. Lawrence Berkeley National Laboratory.

He has been the Editor-in-Chief of the Journal of Catalysis (1997-2010). He acts as President of the North American Catalysis Society and as Vice-President of the International Association of Catalysis Societies. He has served as chairman of the ACS Division of Petroleum Chemistry and as Director of the AIChE Division of Catalysis and Reaction Engineering. He is the founding and current Director of the Berkeley Catalysis Center.

He was elected a member of the National Academy of Engineering in 2008 and of the American Academy of Arts and Sciences in 2015. He is a Fellow of the American Chemical Society (2010) and the American Institute of Chemical Engineers (2014) and an Honorary Fellow of the Chinese Chemical Society (2013).. He has received a Humboldt Senior Scientist Award from the Alexander von Humboldt Foundation and a Doctor Honoris Causa from the Universidad Politecnica de Valencia. His research has been recognized with the George A. Olah Award in Hydrocarbon Chemistry of the American Chemical Society, the Award for Excellence in Natural Gas Conversion, the Wilhelm Manchot Chemistry Prize of the Technical University of Munich, the Richard H. Wilhelm Award in Chemical Reaction Engineering of the American Institute of Chemical Engineers, and the Paul H. Emmett Award in Fundamental Catalysis of the Catalysis Society. He has also received the Robert Burwell Lectureship of the Catalysis Society, the V.N. Ipatieff Professorship at Northwestern University. He was named the Cross Canada Lecturer of the Chemical Institute of Canada and the inaugural recipient of the Tanabe Prize in Acid-Base Catalysis. His teaching awards include the Donald Sterling Noyce Prize, the top teaching award in the physical sciences at Berkeley, the Best Teacher Award of the College of Chemistry, and the Best Teacher Award of the Department of Chemical Engineering and the Award for Excellence in Teaching of the American Institute of Chemical Engineers.

Professor Iglesia has co-authored more than 300 articles in the leading journals in chemistry and chemical engineering and is a co-inventor of nearly 40 U.S. 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. They also involved state-of-the-art 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.

PUBLICATIONS, PATENTS, AND PRESENTATIONS

Enrique Iglesia

PUBLICATIONS

2017

343. Kwon, S., Deshlahra, P., and Iglesia, E., **Journaf of the American Chemical Society (submitted)** ("Dioxygen Activation Routes in Mars-van Krevelen Redox Cycles Catalyzed by Metal Oxides"**)**

342. Yik, E.S. and Iglesia, E., **Journal of Catalysis (submitted)** ("Mechanism and Site Requirements for Thiophene Desulfurization on Supported Re Domains in Metal or Sulfide Forms")

341. Wang, S. and Iglesia, E., **Angewandte Chemie (submitted)** ("Entropy-Driven High Reactivity of Formaldehyde in Nucleophilic Attack by Enolates on Oxide Catalysts"**)**

340. Otto, T., Zones, S., Hong Y., and Iglesia, E., **Journal of Catalysis (submitted)** ("Synthesis of Highly Dispersed Cobalt Oxide Clusters Encapsulated within LTA Zeolites").

339. Sarazen, M.L. and Iglesia, E., **Journal of Catalysis (in press)** ("Experimental and Theoretical Assessment of the Mechanism of Hydrogen Transfer in Alkane-Alkene Coupling on Solid Acids").

338. 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*"*).

337. 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").

336. 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*"*).

335. 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").

334. 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").

333. Iglesia, E., **Proceedings of the 24th Solvay Conference on Chemistry (in press)** ("Consequences of Confinement for Catalysis within Voids of Molecular Dimensions").

332. Maestri, M. and Iglesia, E., **Journal of the American Chemical Society (submitted)** ("First-Principles Assessment of Catalysis by Confinement: NO Oxidation on Silicate Frameworks Containing Voids of Molecular Dimensions").

331. Sarazen, M.L. and Iglesia, E., **Proceedings of the National Academy of Sciences USA. 114 (2017) E3900** ("Stability of Bound Species during Alkene Reactions on Solid Acids").

330. 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")

329. 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*"*).

328. 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").

2016

327. 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").

326. 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").

325. 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").

324. 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").

323. 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").

322. 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").

321. **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").

320. 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").

319. Deshlahra, P. and Iglesia, E., **ACS Catalysis, 6 (2016) 5386** ("Toward More Complete Descriptors of Reactivity in Catalysis by Solid Acids").

318. 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").

317. 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").

316. 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").

315. 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").

314. Wang, S. and Iglesia, E., **ACS Catalysis, 6 (2016) 7664** ("Mechanism of Isobutanal-Isobutene Prins Condensation on Solid Bronsted Acids").

313. 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").

312. 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").

311. 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").

310. 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").

2015

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

308. 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").

307. 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").

306. 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").

305. 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").

304. Jones, A. and Iglesia, E., **ACS Catalysis 5 (2015) 5741** ("The Strength of Brønsted Acids Sites in Zeolites").

2014

303. 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").

302. 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").

301. 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").

300. 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").

299. 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").

298. 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").

297. 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").

296. 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").

295. 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").

294. 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").

293. 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").

292. 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").

2013

291. 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 Silicates").

290. 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").

289. 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").

288. 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").

287. 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")

286. 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").

285. 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").

284. 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").

283. 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").

2012

282. 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").

281. 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").

280. 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").

279. 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").

278. 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").

277. 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").

276. 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").

275. Weiss, B., Artioli, N., and Iglesia, E., **ChemCatChem, 4 (2012) 1397-1404** ("Catalytic NO Oxidation on Dispersed Rh and Co Oxides").

2011

274. 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").

273. 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").

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