CHEMICAL HERITAGE FOUNDATION

ENRIQUE IGLESIA

Transcript of an Interview
Conducted by

Hilary Domush

at

University of California, Berkeley
Berkeley, California

on

27 and 28 January 2014

(With Subsequent Corrections and Additions)

CHEMICAL HERITAGE FOUNDATION
Center for Oral History
FINAL RELEASE FORM

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ENRIQUE IGLESIA

1954	Born in Havana, Cuba, on 27 August

Education

1977	BS, Princeton University, Chemical Engineering, *summa cum laude*
1979	MS, Stanford University, Chemical Engineering
1982	PhD, Stanford University, Chemical Engineering

Professional Experience

	Exxon Research and Engineering Company
1982-1993	Corporate Research Laboratories Research Associate, Section Head, Catalysis Science
	Stanford University
1988-1993	Consulting Professor of Chemical Engineering
	E.O. Lawrence Berkeley National Laboratory
1993-present	Faculty Senior Scientist, Chemical Sciences Division
	University of California at Berkeley, College of Chemistry
1993-present	Professor of Chemical Engineering
1999-present	Director, Berkeley Catalysis Center
2006-2009	Chancellor Professor of Chemical Engineering
2009-present	Theodore Vermeulen Chair in Chemical Engineering

Honors

1976	Tau Beta Pi, Princeton Chapter President, 1976-77
1977	Silver Medal of the Royal Society of Arts, Princeton University (highest-standing graduating senior in Schools of Engineering and Architecture)
1977	Phi Beta Kappa
1992	Golden Tiger Award, Annual Exxon Award for: "Inspirational Leadership and Outstanding Contributions in Catalytic Science and Technology"
1995-1996	American Institute of Chemical Engineers Award for Chemical Engineering Excellence in Academic Teaching, California Chapter

1997	Paul H. Emmett Award in Fundamental Catalysis; North American Catalysis Society
1998	Award for Excellence in Catalysis and Eminent Visitor Award, Chemical Society of South Africa
1999	Best Teacher Award, Berkeley Chapter, American Institute of Chemical Engineers
2003	Richard H. Wilhelm Award in Chemical Reaction Engineering, American Institute of Chemical Engineers
2004	Award for Excellence in Natural Gas Conversion
2005	George A. Olah Award in Hydrocarbon Chemistry, American Chemical Society
2005	Donald Sterling Noyce Prize for Excellence in Undergraduate Teaching, University of California (highest teaching award in the physical sciences at the University of California at Berkeley)
2006	Robert Burwell Lectureship Award, North American Catalysis Society
2007	Humboldt Senior Scientist Research Award, Alexander von Humboldt Foundation
2007	Doctor Honoris Causa, Universidad Politecnica de Valencia, Chile
2008	National Academy of Engineering
2009	Tanabe Prize in Acid-Base Catalysis
2010	Fellow, American Chemical Society
2010	Best Teacher Award, College of Chemistry, University of California at Berkeley
2011	Francois Gault Lectureship Award, European Federation of Catalysis Societies
2011	Alpha Chi Sigma Institute Award, American Institute of Chemical Engineers
2011	Cross Canada Lecturer, Chemical Institute of Canada
2012	ENI Prize, New Frontiers in Hydrocarbons
2012	Gabor Somorjai Award for Creative Research in Catalysis, American Chemical Society
2013	Fellow, Japan Society for the Promotion of Science
2013	Honorary Fellow, Chinese Chemical Society
2014	Fellow, American Institute of Chemical Engineers

ABSTRACT

Enrique Iglesia was born in Havana, Cuba, one of two children. The family lived in Havana until Enrique was about fourteen years old; he was then approaching military age, at which time he would not be allowed to leave the country, so they moved to Mexico, where they lived for six months, awaiting papers to enter the United States. In Miami, Florida, Enrique's intellectual abilities were recognized, and he was placed in advanced courses in math and science, and he also took college-level math classes at Florida International University. Iglesia entered Princeton University because of his math teacher's recommendation, intending to major in chemical engineering, and he found the education there excellent. John Weikart of Exxon Corporation began to recruit him. Iglesia had summer internships at Exxon and became interested in catalysis. He entered Stanford for a PhD and began research right away in Michel Boudart's group, working on the applicability of model systems to real-world catalysis. Iglesia married at the end of his first year in graduate school and by the end of his PhD, they were expecting their first child, so Iglesia needed to have a job. He accepted Exxon, expecting to return to academia eventually, and they moved to New Jersey. Iglesia advanced to the position of section head, supervising about fifty scientists and support staff, and found the science to be first rate. He also taught a seminar at Stanford during several summers.

Ready to return to academia he accepted University of California, Berkeley's offer and also became a consultant to Catalytic Associates. He and Fabio Ribeiro worked together at the start and his research on membrane thin films continuing a project of Heinz Heinemann, the "father of organized catalysis." BP organized a collaboration of scientists from Caltech and Berkeley, a small group called Methane Conversion Cooperative, that lasted ten years and worked on gas conversion. Iglesia promoted thinking over excessive use of technology; he wanted to see real-world materials under real conditions, not just in models. He has started a new, smaller, group, the X Conversion Cooperative, which has reached its fifth year and continues beyond. His group has been working on Fischer-Tropsch synthesis again, as well as other reactions of C_1 molecules, such as carbonylation and tripane synthesis. In addition, Chevron Corporation has been funding research into zeolites, which the Cooperative has learned to form around a precursor, and van der Waals interactions, and auto manufacturers have supported research into exhaust problems. He has also been co-editor in chief of the *Journal of Catalysis*.

During his interview, Iglesia mentions many other scientists who have been important in his career and describes some of their work. He talks about liking teaching, though he finds that working with the different personalities of students can be challenging. Iglesia says that academia provides freedom to do what interests him. He analogizes a scientist's students and their students to a family "bloodline." Iglesia says that predicting too far in advance can narrow one's vision. Iglesia is proud of his family, of having close friends, and that he is still learning things.

INTERVIEWER

Hilary Domush was a Program Associate in the Center for Oral History at CHF from 2007-2015. Previously, she earned a BS in chemistry from Bates College in Lewiston, Maine in 2003. She then completed an MS in chemistry and an MA in history of science both from the University of Wisconsin-Madison. Her graduate work in the history of science focused on early nineteenth-century chemistry in the city of Edinburgh, while her work in the chemistry was in a total synthesis laboratory. At CHF, she worked on projects such as the Pew Biomedical Scholars, Women in Chemistry, Atmospheric Science, and Catalysis.

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