



ENRIQUE IGLESIA
Chancellor Professor

DEPARTMENT OF CHEMICAL ENGINEERING
BERKELEY, CALIFORNIA 94720-1462
TEL: (510) 642-9673 FAX: (510) 642-4778
iglesia@berkeley.edu

W. Kenneth Burchett
Eastman Chemical Company
Catalysis Research Laboratory
PO Box 1972
Kingsport, TN 37662

24 September 2009

Reference: Letter of support for the nomination of Joseph E. Baumgartner for the 2011 Chemical Technician Award of the American Chemical Society

Dear Dr. Burchett,

This is a letter in support of the nomination of Joseph E. Baumgartner for the 2011 Chemical Technician Award of the American Chemical Society. He was my direct technical report for a period of about eight years during my tenure as principal investigator and section head for catalysis research at the Exxon Corporate Research Labs. During this period, Mr. Baumgartner performed at the intellectual level of a scientist; he was an equal contributor to the 16 publications that we co-authored during our collaborations at Exxon. In 1993, I left Exxon to join the chemical engineering faculty at the University of California at Berkeley. I note that the offer of a full professorship at Berkeley was made based on my scientific output at Exxon. My publications coauthored with Mr. Baumgartner represented more than 50% of this output and may of them rank today among those most highly cited within my scientific output.

I have continued to track his growth at ExxonMobil through my confidential consultancy with the company for the last 15 years. I will defer to his nominators from ExxonMobil to highlight these contributions in order to ensure that all confidentiality requirements are met. In these last 15 years, I have watched him continue to grow scientifically and personally and to solidify the pattern of dedication and excellence that led to his early success during our work together. I can say without hesitation or exaggeration that Mr. Baumgartner would have ranked among the very best post-doctoral fellows and graduate students with whom I have interacted at Berkeley. This is a large and select group of more than 100 individuals, at least ten of which currently hold academic positions at top universities in the U.S. and worldwide. He is a technician today, instead of a leading Ph.D. researcher in the catalysis field, because of circumstances and history, for the most part beyond his control. He conducts himself with a dedication to science and a rigor in analysis that rivals those of many of my most respected senior colleagues.

Our joint research was challenging in experimental difficulty and in its fundamental mechanistic nature, which became accepted within highly focused projects only after it demonstrated how knowledge contributed to the practical success of important technologies. Mr. Baumgartner made enabling

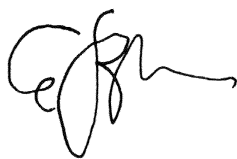
contributions to our understanding of acid catalysis, critical in FCC and refining processes, of alkane activation and aromatization, and of Fischer-Tropsch synthesis, essential for gas-to-liquids conversion technologies. Concurrently, he contributed to our understanding of the synthesis of exchanged cations in zeolites, dispersed oxides, and metal carbides, the latter in collaboration with the group of Professor Michel Boudart at Stanford. During the latter work, he interacted as an equal with the graduate student working on the project (Fabio Ribeiro), who has gone on to become a leader in heterogeneous catalysis and is currently full professor at Purdue University.

Mr. Baumgartner and I learned together, and roughly at the same pace, about protocols for the use and analysis of isotopic compounds in the probing of mechanisms for catalytic reactions in solids. This required the design of first-of-kind equipment for the efficient handling of the isotopes and for the elimination of hydrodynamic artifacts that clouded the mechanistic conclusions. In a very short period of time, he understood and mastered the full range of skills and knowledge required to apply these methods to a broad range of catalytic chemistries. He understood quite early that the tools developed and the knowledge gained within one project could be transferred to the next in a seamless fashion. He also became quickly a living advertisement for how fundamental knowledge, not often appreciated in the trenches of industrial research, usually became the most effective path to the successful implementation of practical concepts and/or to the solution of operational challenges in the implementation of technology.

I have been impressed from the first day I met him by his dedication and his intellect and by his thoughtfulness and depth. He is quietly brilliant in equal measures in the design of equipment and of experiments and in their execution and the analysis of their outputs. He has always functioned as an equal in helping to address that ultimate and most difficult question that we face as we learn: "what do I do next with the knowledge that I have gained?"

Mr. Baumgartner is an excellent example of the self-taught and dedicated scholar. I hope that the selection committee will appreciate (as I do) the scientific talents and the scholarly contributions of this unique individual and consider this nomination with the enthusiasm that I hope I have made clear in this letter.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Iglesia', with a long horizontal flourish extending to the right.

Enrique Iglesia
Chancellor Professor of Chemical Engineering,
University of California at Berkeley
Director, Berkeley Catalysis Center
Faculty Senior Scientist, Lawrence Berkeley National Laboratory
Editor-in-Chief, Journal of Catalysis,
Member, National Academy of Engineering
President, North American Catalysis Society