

**Kevin J. Martin, Ph.D.**

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**Education**

University of North Carolina at Charlotte	Chemistry	B.S. 1980
Michigan State University	Inorganic Chemistry	Ph.D. 1986
Texas A&M University Chemistry Dept.	Postdoctoral Researcher	1986 - 1988

**Professional Positions***Archer Daniels Midland Company (ADM)*

Manager – Catalysis Research Group	9/11-present
Scientist V – Catalysis	9/10 – 9/11
Senior Research Scientist – Chemical Catalysis	3/07 – 8/10

*Nepera Chemicals (aka Rutherford Chemicals; now Vertellus Specialties)*

Senior R&D Scientist	8/99 – 12/05
Research Scientist	12/95 – 7/99

*Texaco Incorporated*

Project Chemist	4/90 – 2/95
Senior Chemist	9/88 – 3/90

**Technical Publications**

1. J. Sun, C. Liu, Y. Wang, C. Smith, **K. Martin**, P. Venkitasubramanian, "Production of crude acrylic acid from acetic acid byproduct-containing feedstock," WO 2015060881 A1, 20150430.
2. J. Sun, C. Liu, Y. Wang, C. Smith, **K. Martin**, P. Venkitasubramanian, "Improved use of byproduct acetic acid from production of acrylic acid and/or methacrylic acid," WO 2015012876 A1, 20150129.
3. J. Sun, C. Liu, Y. Wang, C. Smith, **K. Martin**, P. Venkitasubramanian, "Processes for making methacrylic acid via methacrolein from a biobased isobutene prepared from ethanol or acetic acid using zinc zirconium oxide as a catalyst," WO 2015005942 A1, 20150115.
4. J. Sun, C. Liu, Y. Wang, C. Smith, **K. Martin**, P. Venkitasubramanian, "Process for production of biobased isoprene," WO 2015005941 A1, 20150115.
5. E. Hagberg, K. Martin, J. van Ee, J. Le Notre, D. van Es, J. van Haveren, "Process for the preparation of isoidide from isosorbide by a reductive ruthenium-catalyzed epimerization reaction," EP 2817314 A1, 20141231.
6. J. Sun, C. Liu, Y. Wang, C. Smith, **K. Martin**, P. Venkitasubramanian, "Process and catalyst for conversion of acetic acid to isobutene and propylene," WO 2014204509 A1, 20141224.
7. J. Sun, C. Liu, Y. Wang, C. Smith, **K. Martin**, P. Venkitasubramanian, "Process for making biobased fuel additives," WO 2014204510 A1, 20141224.
8. J. Sun, C. Liu, Y. Wang, C. Smith, **K. Martin**, P. Venkitasubramanian, "Renewable olefins from a mixture of acetic acid and propionic acid," US 20140128650 A1, 20140508.
9. **K. Martin**, J. Terrian, L. Vircks, "Improved hydrogenolysis catalysts and uses thereof," WO 2014062757 A1, 20140424.

10. E.J. Kuhlmann, J.R. Pascoe, J.E. Browne and **K.J. Martin**, "Sulfated catalyst for skeletal isomerization of olefins," U.S. Patent 5182247 (January 26, 1993).
11. M. Shieh, **K.J. Martin**, P.J. Squattrito and A. Clearfield, "New Low-Dimensional Zinc Compounds Containing Zinc-Oxygen-Phosphorus Frameworks: Two Layered Inorganic Phosphites and a Polymeric Organic Phosphinite," *Inorganic Chemistry*, **29**(5), 958-963 (1990).
12. **K.J. Martin**, P.J. Squattrito and A. Clearfield, "The Crystal and Molecular Structure of Zinc Phenylphosphonate," *Inorganica Chimica Acta*, **155**(1), 7-9 (1989).
13. **K.J. Martin** and T.J. Pinnavaia, "Layered Double Hydroxides as Supported Anionic Reagents. Halide-Ion Reactivity in Zinc Chromium Hexahydroxide Halide Hydrates  $[Zn_2Cr(OH)_6X \cdot nH_2O]$  (X = Cl, I)," *Journal of the American Chemical Society*, **108**(3), 541-542 (1986).

### Professional Responsibilities

1. **ADM**: Oversight of performance testing and commercialization of new glycerol to PG catalyst. Successfully scale-up and commercial production of custom catalyst for plant start-up and continued operation. Project leader for implementation of high-throughput catalyst synthesis and screening equipment. Formulation and screening of catalysts for Integrated Bio-Refinery project lead to successful production of acrylic acid from corns stover. Managed ADM research contracts with: Pacific Northwest National Laboratory (PNNL); Energy & Environmental Research Center (EERC) at University of North Dakota; University of Kansas Center for Environmentally Beneficial Catalysis (CEBC), including FDCA production from HMF; and Avantium BV (Amsterdam). Leveraged partners' access to catalyst synthesis and screening expertise to develop early-stage projects to a point where ADM's expertise in process implementation could be employed.
2. **Nepera/Rutherford Chemicals/Vertellus**: Manufacturing technical support, and new catalyst and process development for pyridine and derivatives manufacture. Primarily responsible for ammoxidation process to produce cyanopyridine, including catalyst and process improvements. Scaled up 3 batch catalytic hydrogenation processes for new molecules for fine chemicals market. Implemented new process analytical scheme for oxidation process, resulting in reduction of operating costs. Developed continuous niacinamide production reactor at lab scale, basis of design of new plant built in 2003.
3. **Texaco**: Synthesized and tested catalysts for olefin isomerization, alkylation, fuel ether production, and other refinery processes.

### Professional Affiliations

American Chemical Society; Sigma Xi, The Research Society; North American Catalysis Society; Organic Reactions Catalysis Society.