

Nivaldo Jose Tro

Department of Chemistry
Westmont College
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Education

- University of California, Berkeley, Post-Doctoral Research, 1990 Advisor: Charles B. Harris
- Stanford University, Stanford, California, Ph.D. in Chemistry, September 1989. Advisor: Steven George
- Westmont College, Santa Barbara, California, B.A. in Chemistry, Magna Cum Laude, May, 1985.
- Culver City High School, Culver City, California, June 1981

Professional Experience

- Professor: Department of Chemistry, Westmont College, October 2001 – Present
- Science Editor, Christian Scholar's Review, August 2003 - present
- Associate Professor: Department of Chemistry, Westmont College, August 1995 – October 2001
- Visiting Professor: Department of Chemistry, Pepperdine University, August 1998 - April 1999
- Assistant Professor: Department of Chemistry, Westmont College, August 1990 - August 1995
- University of California President's Fellow: Postdoctoral Research with Charles B. Harris, Department of Chemistry, University of California, Berkeley, September 1989 - July 1990.
- NSF Graduate Fellow: Research with Steven M. George, Department of Chemistry, Stanford University, June 1986 - June 1989.

Professional Affiliation

- American Chemical Society, member, Physical Chemistry Division.
- Council on Undergraduate Research, member, Chemistry Division
- Phi Kappa Phi Honor Society, member
- Westmont Liberal Arts Institute, member, Advisory Board

Fellowships and Awards

- John Templeton Oxford Scholar in Science and Religion, 2003 - 2005
- Westmont College Outstanding Teacher of the Year, May 2001
- Westmont College Faculty Research Award, May 1996
- Westmont College Outstanding Teacher of the Year, May 1994
- University of California President's Fellow, September 1989 - July 1990
- NSF Graduate Research Fellow, June 1986 - June 1989
- Graduated Magna Cum Laude, Westmont College
- Outstanding Senior in Chemistry Award, Westmont College

Funded Research Proposals

- Research Corporation: Cottrell College Science Grant (# C-2996) "Laser Induced Photochemistry of Mo(CO)₆ adsorbed on single crystal Al₂O₃ surfaces" December 1990 - December 1992, Funded \$33,000
- American Chemical Society: Petroleum Research Fund Type G (# 23640-GB5) "Investigation of Photochemistry in Surface Adsorbed Metal Carbonyl Compounds using FTIR and Infrared Laser Spectroscopy" February 1991 - February 1993, Funded \$18,000
- National Science Foundation: MRI Planning Grant (# RII-9014505) February 1991 - February 1992, Funded \$7,860
- Research Corporation: Cottrell College Science Grant, "Desorption Kinetics and Orientation of Alkanes Adsorbed on Al₂O₃ (0001)" December 1993 - December 1995, Funded \$29,641
- American Chemical Society: Petroleum Research Fund Type B (#28048-B5) "Adlayer Structure and Desorption Kinetics of Alkanes Adsorbed on Al₂O₃(0001)" January 1994 - August 1996, Funded \$25,000
- National Science Foundation RUI (#CHE-9510153) "Photoisomerization of Trans-Stilbene Adsorbed on Dielectric Surfaces" July 1995 - March 1998, Funded \$128,000
- American Chemical Society: Petroleum Research Fund Type B (#33524-B) "Isothermal Study of the Desorption Kinetics of Several Adsorbates on Al₂O₃(0001)" July 1998 - July 2000, Funded \$30,000

Publications: Professional Articles

1. N.J. Tro, K.A. Martin, K.E. Low and A.M. Nishimura, "Localized States in Dichloronaphthalene Crystals", Journal of Photochemistry 32,303 (1986).
2. I.B. Searway, N.J. Tro, K.A. Martin and A.M. Nishimura, "Dephasing of Electron Spin Echo in The Triplet State of Orientationally Disordered Crystals", Mol. Cryst. Liq. Cryst. 140, 195 (1986).
3. N.J. Tro, J.J. Tro, D.F. Marten and A.M. Nishimura, "External Spin-Orbit Coupling on the ³n,p* of Several Cycloalkanes", Journal of Photochemistry 36, 141 (1987).
4. N.J. Tro, A.M. Nishimura and S.M. George, "Summary Abstract: Interactions and Electronic Energy Transfer Between Molecules on Dielectric Surfaces: Phenanthrene on Al₂O₃(1120)", Journal of Vacuum Science and Technology A6, 852 (1988).

5. N.J. Tro and S.M. George, "Temperature-Programmed Spectroscopy for Surface Kinetic Analysis: Absorption and Laser-Induced Fluorescence Techniques", *Surface Science* 197, L246 (1988).
6. N.J. Tro, D.A. Arthur and S.M. George, "Infrared Resonant Desorption of Butane from Al₂O₃ (1120): Evidence for an Ordered Adlayer from Vibrational Mode Selectivity", *Journal of Chemical Physics* 90, 3389 (1989).
7. N.J. Tro, A.M. Nishimura and S.M. George, "Disorder-Order Transition and Energy Transfer in Phenanthrene Adlayers on Al₂O₃(1120)", *Journal of Physical Chemistry* 93, 3276 (1989).
8. N.J. Tro, A.M. Nishimura, D.R. Haynes and S.M. George, "Surface Nucleation in the Crystallization Kinetics of Phenanthrene Multilayers on Al₂O₃(1120)", *Surface Science* 207, L961 (1989).
9. N.J. Tro and S.M. George, "Infrared Free Electron Laser as a Probe of Vibrational Dynamics on Surfaces", *The Journal of the Optical Society of America* 6, 995 (1989).
10. N.J. Tro, D.R. Haynes, A.M. Nishimura, S.M. George, "Photophysics and Spectroscopy of Surface Adlayers: Pyrene on Al₂O₃(1120)", *SPIE, Photochemistry in Thin Films* 1056, 175 (1989).
11. N.J. Tro, D.R. Haynes, A.M. Nishimura and S.M. George, "Coverage-Dependent Electronic Absorption Spectrum of Pyrene on Al₂O₃(1120)", *Chemical Physics Letters* 159, 588 (1989).
12. N.J. Tro, D.R. Haynes, A.M. Nishimura and S.M. George, "Desorption Kinetics and Excimer Formation of Pyrene on Al₂O₃(1120)", *Journal of Chemical Physics* 91, 5778 (1989).
13. D.R. Haynes, K.R. Helwig, N.J. Tro, and S.M. George, "Fluorescence Quenching of the Phenanthrene Excimer on Al₂O₃(0001): Coverage and Distance Dependence", *Journal of Chemical Physics* 93, 2836 (1990)
14. D.R. Haynes, K.R. Helwig, N.J. Tro, and S.M. George, "Coverage-Dependent Electronic Absorption Spectrum of Phenanthrene on Al₂O₃(0001) and Butane Multilayer Surfaces", *The Journal of Physical Chemistry* 95, 839 (1991)
15. D.R. Haynes, N.J. Tro and S.M. George, "Condensation and Evaporation of Water from Ice Surfaces", *The Journal of Physical Chemistry* 96, 8503, (1992)
16. * C.M. Aubuchon, B.S. Davison, A.M. Nishimura and N.J. Tro, "Desorption Kinetics and Adlayer Structure of n-Pentane adsorbed on Al₂O₃(0001)" *The Journal of Physical Chemistry* 98, 240 (1994)
17. N.J. Tro, J.C. King and C.B. Harris, Ultrafast Studies of Metal-Metal Bond Cleavage in Fe₃(CO)₁₂, *Inorganica Chimica Acta*.229, 469 (1995)
18. * R.M. Slayton, C.M. Aubuchon, T.L. Camis, A.R. Noble, and N.J. Tro, "Desorption Kinetics and Adlayer Sticking Model of Several n-Alkanes Adsorbed on Al₂O₃(0001)" *The Journal of Physical Chemistry* 99, 2151 (1995)
19. * R.M. Slayton, N.R. Franklin, and N.J. Tro, "Photochemistry of trans-Stilbene Adsorbed on Al₂O₃(0001)" *The Journal of Physical Chemistry* 100, 15551 (1996)
20. * S.Y. Nishimura, R.F. Gibbons, and N.J. Tro "Desorption Kinetics of Methanol

- from Al₂O₃(0001) Studied using Temperature Programmed Desorption and Isothermal Desorption” The Journal of Physical Chemistry 102, 6831 (1998)
- 21.* S.Y. Nishimura, D.N. Aldrich, M.T. Hoerth, C.J. Ralston, and N.J. Tro, “Photochemistry of CH₃I adsorbed on Al₂O₃(0001)” The Journal of Physical Chemistry B 103, 9717 (1999)
 22. N.J. Tro, “Chemistry as General Education” Journal of Chemical Education 81 (1), 54 (2004)
 23. Patrick McDonald and Nivaldo Tro, “In Defense of Methodological Naturalism” (*Forthcoming, Christian Scholar's Review*)
(* indicates undergraduate student co-authorship)

Publications: Books

1. N.J. Tro, *Chemistry in Focus: A Molecular View of Our World* (Brooks-Cole Publishing, Pacific Grove, California), 1998
2. N. J. Tro, *Chemistry in Focus: A Molecular View of Our World*, Second Edition, (Brooks-Cole Publishing, Pacific Grove, California), 2001
3. N.J. Tro, *Introductory Chemistry* (Prentice-Hall Publishers, Upper Saddle River, New Jersey), 2003
4. N.J. Tro, *Introductory Chemistry*, Second Edition (Prentice-Hall Publishers, Upper Saddle River, New Jersey), 2005
5. N.J. Tro, *Chemistry in Focus: A Molecular View of Our World*, Third Edition, (Brooks-Cole Publishing, Pacific Grove, California), 2006
6. N.J. Tro, *General Chemistry: A Molecular Approach*, (Prentice Hall, Upper Saddle River, New Jersey), January 2007

Recent Talks

N.J. Tro, *Theistic Naturalism: The Case Against Creation Science and Theistic Science* Phi Kappa Phi Lecture, Westmont College, 1998

N.J. Tro, *Liberal Arts Chemistry: A Squandered Opportunity*, 221st American Chemical Society National Meeting, San Diego, CA, 2001

N.J. Tro, *Science and Religion: Reconciliation of Time for Divorce?* Westmont Downtown Address, Santa Barbara, CA, 2004

Patrick McDonald and N.J. Tro, *In Defense of Methodological Naturalism*, The Templeton Oxford Seminars on Science and Christianity, Oxford, England, 2005

N.J. Tro, *Science Literacy: How Understanding Chemistry Can Make You Happy*, Keynote Address, The 177th Conference of the Two Year College Chemistry Consortium, Joliet, Illinois, March 2007

Recent Interdisciplinary Meetings

The Third Annual Conversation on the Liberal Arts, Westmont College, January, 2003

The Role of Science in the Liberal Arts, Wabash College, March, 2003

The Templeton Oxford Seminars on Science and Christianity, Oxford, England, 2003

The Templeton Oxford Seminars on Science and Christianity, Oxford, England, 2005