

**Dr. Thomas B. Malloy**

Research Professor
UH Center for Petroleum Geochemistry
Department of Earth and Atmospheric Sciences
University of Houston
tbmalloy@central.uh.edu

Education

B.A., 1964 University of St. Thomas, Chemistry and Mathematics
Ph.D. 1970 Texas A&M University, Physical Chemistry

Experience

1970-71: Post-doctoral Research Associate, Spectroscopy Laboratory, MIT
1971-79 Assistant, Associate and Professor. Joint appointment in Physics and Chemistry Mississippi State University
1976-77 Visiting Associate Professor, University of Georgia
1979-2000, Various technical and managerial assignments, Shell Development Company, later Shell Chemical Company, Houston, TX . Assignments included Optical Spectroscopy (4 yrs), NMR/Elemental Analysis(Mgr-3 years), Environmental Analysis (Mgr-7 yrs), Mass Spectrometry (6 yrs)
2000-2012 Cullen Trust/Welder-Mitchell Professor of Chemistry, University of St. Thomas
2013 Professor Emeritus, University of St. Thomas
Consultant in Chromatography/Mass Spectrometry for Shell Global Solutions (Shell Technology Center-Houston)-(9/12-9/14)
Technical Consultant, UH Center for Petroleum Geochemistry 2014-Present

Teaching Areas

Taught General Chemistry, Physical Chemistry, Chemistry Seminar

Research Areas

Applications of GC/MS methods to Geochemical systems
Analysis of complex splitting patterns in high-field NMR spectra of organofluorine molecules (Collaboration with Rice University)
Molecules with large amplitude vibrational motions

Publications include applications of various areas of spectroscopy – infrared, Raman, far-infrared, microwave, and coherent anti-Stokes Raman, NMR. Mass spectrometry experience includes, GC/MS with both electron ionization and chemical ionization, GC/MS/FTIR, direct exposure probe (DEP) MS, HPLC/MS(limited). Instruments used range from Agilent GC/MSD's 5971, 5972, 5973 and 5975. Agilent (HP) 5989 (HP Engine), Finnigan TSQ 700 triple Quad. Four GC/MSD's were maintained (i.e. kept running) at the University of St. Thomas for over a decade. Recent (limited) experience includes Agilent GC/Q-ToF instrument and GC QQQ instrument

Recent Publications

Mei Mei, T B. Malloy, Ewa Szymczyk, Adry Bissada, Larry Darnell, Improved Method for Simultaneous Determination of Saturated and Aromatic Biomarkers, Organosulfur Compounds and Diamondoids in Whole-Oil by GC-MS/MS", Journal: Organic Geochemistry(In Press)

Thomas B. Malloy, Jr.,,1 Michelle A. Steiger and Lawrence B. Alemany, NMR at the Unniversity of St. Thomas (TX): Cooperation and Collaboration with Rice University, In *NMR Spectroscopy in the Undergraduate Curriculum: Upper-Level Courses and Across the Curriculum* Volume 3, ACS Symposium Series 1225, David Soulsby, Laura J. Anna, Anton S. Wallner, eds., 2017, 93-126.

Lawrence B. Alemany Thomas B. Malloy Jr., Megan M. Nunes, Nicholas G. Zaibaq, Importance of cross-correlated relaxation in the spectra of simple organofluorine compounds: Spectral complexity of A3B3X spin

systems compared to ABX spin systems, *J. Mol. Struct.* 1023 (2012) 176–188

Lawrence B. Alemany, Thomas B. Malloy Jr. and Megan M. Nunes, Simple organofluorine compounds giving field-dependent ^{13}C and ^{19}F NMR spectra with complex patterns: higher order effects and cross-correlated relaxation, *Magn. Reson. Chem.* 2010, 48, 882–891

Tung Tran and Thomas B. Malloy, Jr. *Ab Initio* calculations of interconversion pathways in 1,2,3,6-tetrahydropyridine, *J. Mol. Struct.* 970 (2010) 66–74

Other

Faculty advisor to the award-winning Student Chapter of ACS at the University of St. Thomas from 2000-2011 and received the Advisor of the Year Award at UST in 2004-05.

Principal Investigator, NSF Grant 0115905 Acquisition of a Combined GC and HPLC for Undergraduate Research and Training 2001-04 (\$99,468)

Recipient of the 2005 American Chemical Society Greater Houston Section Award

Principal Investigator NSF Grant 0536648 FTNMR Instrumentation and Molecular Modeling Software for Undergraduate Instruction in Chemistry 2006-09(\$115,250)

Recipient of the 2006 American Chemical Society Southwest Regional Award (TX, OK, AR, LA)

Recipient of the 2007 Joseph P. McFadden Award for Excellence in Service

Project Manager 2008-10, Department of Education College Cost Reduction Act – Hispanic Serving Institutions (CCRAA-HSI) Cooperative Grant with Houston Community College (\$2.4 million)