

Randall K. Weese

31 Skyline Avenue, Astoria, Oregon 97103

Home: (503) 325-3737

Cell: (503) 298-9816

randallweese@yahoo.com

PROFESSIONAL SUMMARY

- Principles, practices, standards, methods chemicals and equipment used in physical, inorganic chemical microbiological, toxicology testing and analyses of trace quantities of contaminants found in solid and liquid phase
- Develop and/or follow strict guidelines for standard methods of qualitative and quantitative analysis.
- Safe laboratory and sampling procedures and practices; quality assurance and quality control procedures.
- Excellent techniques for record keeping and report writing. Principle author in physical and inorganic chemistry journals
- 4 years experience with Inductively Coupled Mass Spectroscopy, ICP, Atomic Emission Spectroscopy, AES, and Thermal Ionization Mass Spectroscopy, TIMS
- 7 years experience in physical property measurements, decomposition kinetics, coefficient of thermal expansion, heat flow
- Experience with experimental design, interpreting data, data presentation, and classified information
- Expert in measurements of thermal diffusivity, specific heat capacity and thermal conductivity using pulse laser technologies and calorimetry
- Strong problem solving skills, able to work independently as well as team member in an effort to plan, organize and accomplish complex project goals
- 4 years experience as pilot plant supervisor
- Supervised and directed projects, budgets, personnel, etc., for 3 laboratories simultaneously.
- Taught inorganic chemistry Spring 2007

EDUCATION

- Masters of Science in Chemistry, California State University Hayward, Hayward, CA., 2000
- Bachelors of Science in Chemistry, California State University Hayward, Hayward, CA., 1993

SKILLS AND ABILITIES

- Molecular Modeling Software Programs: IGOR Pro, Kinetics '05, AKTS Thermokinetics
- Microsoft Office Software: Word, Excel and PowerPoint, Chemdraw
- Operate Mac and PC

EXPERIENCE

Research Chemist-Chemistry and Materials Science Directorate, Energetic Materials Center (1998-Present), Lawrence Livermore National Laboratory, June 1993-Present

- Thermal property measurements of energetic materials, polymers and inorganic materials
- Designing and implementing experiments and measurement methods, MS, FTIR, HPLC
- Synthesis, isolation and identification of heterocyclic aromatic amines for biological activity
- Acquisition, reduction and interpretation of data
- Generating reports and computer modeling and simulations

Inorganic Chemistry Instructor- Department of Chemistry, Clatsop Community College, Astoria, Oregon
Winter Quarter, 2007

- Taught inorganic chemistry lecture and laboratory

Graduate Teaching Assistant- Department of Chemistry, Cal State University Hayward, Hayward, CA. (1991-1993)

- Student instructor for college organic chemistry lab
- Substitute teacher for graduate level organic chemistry
- Clarified theoretical and experimental concepts for students
- Assessed reports and provided feedback
- Recorded and produced instructional video media for instrumentation (i.e. NMR)
- Chemistry tutor for all levels of chemistry

PUBLICATIONS

- Weese, R. K., Burnham, A. K., Turner, H. C., and Tran, T. D., Exploring the Physical, Chemical and Thermal Characteristics of a New Potentially Insensitive High Explosive RX-55-AE-5, *Journal of Thermal Analysis and Calorimetry*, Vol. 89 (2007), 465-473
- Burnham, A. K., Weese, R. K., Wemhoff, A. P., and Maienschein, J. L., A Historical and Current Perspective on Predicting Thermal Cookoff Behavior, *Journal of Thermal Analysis and Calorimetry*, Vol. 89 (2007), 407-415
- Weese, R. K., Thermal conductivity of Tetryl by modulated differential scanning calorimetry, *Thermochimica Acta* 429 (1): 119-123 May 1, 2005
- Weese R. K., Burnham A. K., Properties of CP: Coefficient of Thermal Expansion, Decomposition Kinetics, Reaction to Spark, Friction and Impact, *Propellants, Explosives and Pyrotechnics*, October 2005
- Burnham A. K., Weese R. K., Kinetics of thermal degradation of explosive binders Viton A, Estane and Kel-F, *Thermochimica Acta* 426(1-2) 85-92 Feb 20, 2005
- Burnham A. K., Weese R. K., Weeks B. L., A distributed activation energy model of thermodynamically inhibited nucleation and growth reactions and its application to the beta-delta phase transformation, *Journal of physical chemistry B* 108 (50): 19432-19411, Dec 16, 2004
- Brandon L. Weeks, Randall K. Weese and Joseph M. Zaug, Submitted to *Energetic Materials and Atomic Force Microscopy: Structure and Kinetics* (2004)
- Weese, R. K., Maienschein J. L., Perrino C. T., Kinetics of the beta to delta phase transition of HMX, *Thermochimica Acta* 401 (1) 1-7 May 12, 2000

PRESENTATIONS and REPORTS

- R. K. Weese, A. K. Burnham, H. C. Turner and T. D. Tran, "Physical characterization of RX-55-AE-5 A formulation of 97.5 % 2,6-diamino-3,5-dinitropyrazine-1-oxide (LLM-105) and 2.5% Viton A, UCRL-JRNL-in preparation. Also, to be presented at JOWOG 9, AWE (June, 2005).
- A. K. Burnham, R. K. Weese, R. Wang, Q. S. M. Kwok and D. E. G. Jones, Thermal Properties of FOX-7, UCRL-CONF-211114 (Mar. 2005), To be presented at: 36th Intl. Annual. Conf. of ICT and 32nd Inter. Pyrotech. Sem. (June, 2005).
- R. K. Weese, A. K. Burnham, A. T. Fontes, "A study of the properties of CP: coefficient of thermal expansion, decomposition kinetics, and reaction to spark, friction, and impact," UCRL-CONF-210860 (Mar. 2005). To be presented at: 36th Intl. Annual. Conf. of ICT and 32nd Inter. Pyrotech. Sem. (June, 2005).
- R. K. Weese and A. K. Burnham, Coefficient of Thermal Expansion of the Beta and Delta Polymorphs of HMX, UCRL-JRNL-209208 (Jan, 2005). Accepted for: *Propellants, Explosives, and Pyrotechnics*.

Also, presented at the 32nd NATAS meeting (Oct. 2004) and distributed in the proceedings in abbreviated form.

- A. K. Burnham, R. K. Weese, W. J. Andrzejewski, “Kinetics of HMX and CP decomposition and their extrapolation for lifetime assessment,” LLNL Report UCRL-TR-208411 (Dec. 2004); Also, to be presented at 36th Intl. Annual. Conf. of ICT and 32nd Inter. Pyrotech. Sem. (June, 2005).
- A. K. Burnham, R. K. Weese, *Thermal Decomposition Kinetics of HMX*, LLNL Report UCRL-TR-204262, (May 2004), Rev. 1 (Nov. 2004). Also, presented at the 32nd NATAS meeting (Oct. 2004) and distributed in the proceedings in abbreviated form.
- A. K. Burnham, R. K. Weese, “Kinetics of thermal degradation of explosive binders Viton A, Estane, and Kel-F,” LLNL Report UCRL-JRNL-203865 (April, 2004), Published in: *Thermochim. Acta.* 426, 85-92 (2005). Also, presented at the 32nd NATAS meeting (Oct. 2004) and distributed in the proceedings in abbreviated form.
- A. K. Burnham, R. K. Weese, and B. L. Weeks, “A Distributed Activation Energy Model of Thermodynamically Inhibited Nucleation and Growth Reactions and its Application to the $\beta\delta$ Phase Transition of HMX,” LLNL report UCRL-JRNL-20353 (April, 2004), Rev (June, 2004). Published in: *J. Phys. Chem.* 108, 19432-19441(2004). Also, presented at the 32nd NATAS meeting (Oct. 2004) and distributed in the proceedings in abbreviated form.
- Thermal Conductivity of Tetryl by Modulated Differential Scanning Calorimetry, R.K. Weese and J.L. Maienschein, Lawrence Livermore National Laboratory, Livermore, California 94550, *4th International Heat Flow Symposium on Heat Flow Calorimetry of Energetic Materials*, Leeds, UK, UCRL-JC-154532 (Conference Document), September 7-10th (2003)
- Thermal Conductivity of Tetryl by Modulated Differential Scanning Calorimetry, R.K. Weese and J.L. Maienschein, Lawrence Livermore National Laboratory, Livermore, California 94550, *North American Thermal Analysis Society, NATAS proceeding volumes*, Albuquerque, NM, UCRL-PRES-200084, September 22-24, (2003)
- Coefficient of Thermal Expansion of the Beta and Delta Polymorphs of HMX, Randall K. Weese* and Alan K. Burnham, Energetic Materials Center, Lawrence Livermore National Laboratory, Livermore, California 94550, UCRL-ABS-203208, (2004)
- Decomposition Kinetics for Mass Loss and Heat Release from HMX, Randall K. Weese* and Alan K. Burnham, Energetic Materials Center, Lawrence Livermore National Laboratory, Livermore, California 94550, UCRL-ABS-203349, (2004)
- Thermal Decomposition Kinetics of HMX, Alan K. Burnham and Randall K. Weese, UCRL-TR-204262, May 20 (2004)