



Pentagon Reports: Fast. Definitive. Complete.

[Home](#) [About Us](#) [Contact Us](#) [View Cart](#) [My Account](#) [FAQ](#)

username

LOGIN

[New Account »](#)
[Forgot Password?](#)

chemiluminescence

GO

[Advanced Search »](#)

Search Results for: chemiluminescence

Total Results: 116

Pages: [Previous](#) [12\[3\]](#) [Next](#)

Results per page:

50

Sort by: [Relevancy](#) [Title](#) [Date](#) [Pages](#) Display: [Full Text Only](#)

[Combustion of Nitrogen in Low-Pressure H₂+O₂ and H₂+CO+O₂ Flames](#)

Nov 30, 2001 29 pages

Authors: [P. M. Sheaffer](#); [P. F. Zittel](#); [AEROSPACE CORP EL SEGUNDO CA LAB OPERATIONS](#)

... H₂ + CO + O₂ flames. The experiments were carried out at a pressure of 50 Torr, simulating rocket plume afterburning conditions at 20 km altitude. The cool, post-flame combustion products were analyzed with a mass spectrometer and a specially modified NO(x), **chemiluminescence** analyzer, as the stoichiometry of the flame was varied to simulate the range of afterburning mixtures encountered in a real rocket plume. Comparisons of the experimental results with preliminary computer flame simulations are used to test the accuracy of the chemical mechanisms employed in modeling nitrogen combustion at ...

Full Text

[Kinetics of CH Radicals With O₂: Evidence for CO-Chemiluminescence in the Gas Phase Reaction](#)

Jun 18, 2002 33 pages

Authors: [Ghanshyam Vaghjiani](#); [ENGINEERING RESEARCH AND CONSULTING INC EDWARDS AFB CA](#)

... (d-a) vibronic emissions were recorded at several band positions. 147.8 nm was the shortest wavelength at which CO emission was recordable. The integrated intensities of the CO emissions showed a quadratic dependence on the photolysis fluence employed as did the OH(A-X) emission in the (1-0) band. The dependence of the OH and CO **chemiluminescence** on O₂ was studied to obtain the rate coefficient(s) for the chemiluminescent reaction(s). The data is best interpreted by postulating that CM(v" -> O) reactions with O₂ lead to the observed CO-emissions as well as the well-known OH-chemiluminescence.

Full Text

[CO-Chemiluminescence in the CH + O Gas Phase Reaction](#)

Mar 19, 2002 4 pages

Authors: [Ghanshyam L. Vaghjiani](#); [ENGINEERING RESEARCH AND CONSULTING INC EDWARDS AFB CA](#)

... branching, energy disposal and its theoretical treatment has been examined in only a few of these reactions; (CH + NO) and (CH + N₂) reactions by far being the most studied systems. Particularly lacking in the literature is information on the production of electronically excited state species. The Air Force Research Laboratory is interested in the methylidyne and the methylene (CH₂) radical reactions with O₂ and O-atoms since they are thought to play an important role in the production of ultraviolet/visible **chemiluminescence** when rocket plumes interact with the earth's ambient atmosphere.

Full Text

[Kinetics of CH Radicals with O₂: Evidence for CO-Chemiluminescence in the Gas Phase Reaction](#)

Mar 19, 2002 4 pages

Authors: [Ghanshyam L. Vaghjiani](#); [ENGINEERING RESEARCH AND CONSULTING INC EDWARDS AFB CA](#)

... branching, energy disposal and its theoretical treatment has been examined in only a few of these reactions; (CH + NO) and (CH + N₂) reactions by far being the most studied systems. Particularly lacking in the literature is information on the production of electronically excited state species. The Air Force Research Laboratory is interested in the methylidyne and the methylene (CH₂) radical reactions with O₂ and O-atoms since they are thought to play an important role in the production of ultraviolet/visible **chemiluminescence** when rocket plumes interact with the earth's ambient atmosphere.

Full Text

[Kinetic Studies of UV/Vis-Chemiluminescence in the CH + O₂ Gas Phase Reaction](#)

Feb 19, 2003 8 pages

Authors: [Ghanshyam L. Vaghjiani](#); [ENGINEERING RESEARCH AND CONSULTING INC\(ERC INC\) EDWARDS AFB CA](#)

CO uv/vis-chemiluminescence has been observed for the first time in the 248-nm photodissociation of a trace amount of bromoform (CHBr₃) vapor present in an excess of O₂ and in diluent helium carrier gas at 2 torr and at 298 K. The integrated intensities of the time-resolved **chemiluminescence** traces due to characteristic CO(A-X), CO(a-X) and CO(d-a) vibronic emissions showed quadratic dependence on the 248-nm photolysis laser fluence used. The decay kinetics of these chemiluminescences was studied as a function of added H₂, D₂, N₂, CH₄, O₂ and CHBr₃, and comparisons made to the behavior of the ...

Full Text

[Characterization and Improvement of Polymer Solution Light-Emitting Devices](#)

Mar 3, 2003 19 pages

Authors: [Yang Yang](#); [Fred Wudl](#); [CALIFORNIA UNIV LOS ANGELES DEPT OF MATERIALS SCIENCE AND ENGINEERING](#)

... (SLED), from device mechanism to materials. After a two-year intense research on SLEDs, we have expanded our project to other areas, from SLEDs, to phosphorescent PLEDs, and high performance photovoltaic devices. It is realized that our SLED has a similar mechanism as the ECL process. The electrogenerated **chemiluminescence** (ECL) process usually involves at least two species (or two reactions). One reaction is the

Full Text

oxidation process in which a species is oxidized near the anode to form a radical cation and the other species is reduced near the cathode to form a radical anion. The radical ...

[Molecular Beams in Space: Sources of OH\(A yields X\) Emission in the Space Shuttle Environment](#) Nov 2003 13 pages

Authors: [L. S. Bernstein](#); [Y. Chiu](#); [J. A. Gardner](#); [A. L. Broadfoot](#); [M. I. Lester](#); [AIR FORCE RESEARCH LAB HANSCOM AFB MA SPACE WEATHER CENTER OF EXCELLENCE](#)

... species and exhaust constituents, most probably the reaction $O + H_2O$ yields $OH(A) + OH(X)$. Process (i) produces a very rotationally cold and spectrally narrow component due to the rapid cooling of the $OH(X)$ in the supersonic expansion of the exhaust flow. Processes (ii) and (iii) produce extremely excited $OH(A)$, not well characterized by thermal vibrational or rotational distributions. The $O + H_2O$ **chemiluminescence** reaction has a substantial activation energy, 4.79 eV, and is only slightly above threshold for the ram geometry, where the engine exhaust is directed into the atmospheric wind.

Full Text

[Diagnose und Therapie von Funktionsstoerungen menschlicher Leukozyten nach Bestrahlung](#) 1999 191 pages
([Diagnosis and Therapy of Dysfunctions of Human Leukocytes After Irradiation](#))

Authors: [W. Kaffenberger](#); [D. Van Beuningen](#); [BUNDESMINISTERIUM DER VERTEIDIGUNG BONN\(GERMANY F R\)](#)

... the first immunological barrier. Experiments were performed with isolated human PMN and with the promyelocytic HL-60 cell line, induced to differentiate along the granulocytic lineage with dimethyl sulfoxid. The respiratory burst reaction was triggered with soluble stimuli and measured flow cytometrically or a **chemiluminescence** signal with indicator molecules dihydrohodamine 123 or luminol. The presence of enzymes was postulated, verified with Western blotting, and their activities were inhibited pharmacologically. Lipid 2nd messengers were measured by high-performance liquid chromatography.

Full Text

[Portable Chemical Agent Detection System: Differential Reflectometer and Light Scattering Approaches](#) Feb 15, 2005 30 pages

Authors: [Christopher P. Palmer](#); [Michael D. DeGrandpre](#); [FLORIDA UNIV GAINESVILLE DEPT OF MATERIALS SCIENCE AND ENGINEERING](#)

... use in a portable optical sensor for chemical agents and explosives, and initial efforts to develop a prototype instrument based on sensor technology developed as part of the project. Development of the sensor involves the evaluation and development of several very sensitive spectroscopic techniques based upon luminescence spectroscopy. A novel waveguiding fused silica capillary tubing, photo fragmentation coupled with luminol **chemiluminescence**, and direct photoluminescence spectroscopy have been utilized and micro- and macro-mechanical systems for sample collection are have been evaluated.

Full Text

[Emissions Control in Swirl Stabilized Spray Combustors, an Experimental and Computational Study](#) Feb 1, 2007 49 pages

Authors: [Ephraim Gutmark](#); [CINCINNATI UNIV OH GRADUATE STUDIES AND RESEARCH](#)

Detailed measurements of velocity statistics, temperature distribution, flame **chemiluminescence**, and emission characteristics in a lean direct fuel injection multi swirl gas turbine combustor were acquired. The inlet and exit boundary conditions, including the mixing tube length and the exhaust nozzle contraction ratio, were modified to emphasize the effects of these boundary conditions on the characteristics of nonreacting and reacting flows. Velocity statistics, including mean and turbulence kinetics, were measured by using SPIV in a cylindrical combustor chamber for isothermal and reacting ...

Full Text

[Optical, Biochemical, and Molecular Characterization of New Bioluminescence Systems](#) May 9, 2007 108 pages

Authors: [Dimitri Deheyn](#); [Michael Latz](#); [SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA](#)

... goals originally proposed for the funding period. Screening of light producing organisms (Research Area 1) has been completed in diverse environments, including the Caribbean that was added on a later date. The screening has led to describing the general change with geographical latitude of pigmentation, **chemiluminescence** and fluorescence in organisms. This has led to documentation of organisms producing light of different color, which could stimulate future research of specific interest for the AFOSR. Also, as a result from this screening, a new Green Fluorescent Protein (GFP) and also been ...

Full Text

[Application of the Born-Mayer Potential with a Hard-Sphere Scattering Kernel to Rarefied Hypothermal Gas Flow Modeling \(Preprint\)](#) Jun 16, 2008 11 pages

Authors: [William Dimpfl](#); [Sergey F Gimelshein](#); [Ingrid J Wysonq](#); [Matthew Braunstein](#); [Lawrence Bernstein](#); [AIR FORCE RESEARCH LAB EDWARDS AFB CA PROPULSION DIRECTORATE](#)

Mid ultraviolet Cameron band emission from carbon monoxide is seen in plumes of Space Shuttle Orbiter engine burns in low earth orbit. The observed emission has been attributed to **chemiluminescence** from two and three step chemistry of a minor amount of methane in the plume with atmospheric atomic oxygen. DSMC modeling has played an important role in determining the mechanism, but standard DSMC methods show significant discrepancies in the size and shape of the radiance. The differences have been traced to a need to extend the validity of scattering treatment to hypothermal (E_{rel}) 1 eV ...

Full Text

[Organic Photodiodes for Biosensor Miniaturization](#) Jan 2009 8 pages

Authors: [Jason R Wojciechowski](#); [Max Sonnleitner](#); [Hans J Prall](#); [Christoph Winder](#); [Martin Schamesberger](#); [Roland Pieler](#); [Erwin Fuereder](#); [Mariko Y Yamaguchi](#); [Lisa C Shriver-Lake](#); [Frances S Ligler](#); [NAVAL RESEARCH LAB WASHINGTON DC](#)

... as LEDs and CMOS chips-are generally still too expensive for disposable components. This paper describes the integration of polymer diodes onto a biosensor chip to create a disposable device that includes both the detector and the sensing surface coated with immobilized capture antibody. We performed a

Full Text

chemiluminescence immunoassay on the OPD substrate and measured the results using a hand-held reader attached to a laptop computer. The miniaturized biosensor with the disposable slide including the organic photodiode detected Staphylococcal enterotoxin B at concentrations as low as 0.5 ng/mL.

[An Evaluation of the PCB-TOX-SPOT Water Toxicity Test](#)

Sep 15,
2011 40 pages

Authors: [David E Trader](#); [William van der Schalie](#); [ARMY CENTER FOR ENVIRONMENTAL HEALTH RESEARCH FORT DETRICK MD](#)

Full Text

The United States Army Center for Environmental Health Research (USACEHR) is developing an Environmental Sentinel Biomonitor (ESB) system to test Army drinking water supplies for the presence of toxic industrial chemicals (TICs). One of the technologies considered for inclusion in the ESB system is the PCB TOX-SPOT **Chemiluminescence** Test, a rapid assay that measures changes in luminescence of the bacteria *Photobacterium leiognathi* as an indicator of toxicity. The TOX-SPOT test was able to respond to only 5 of 18 chemicals in a test set identified by an Army user group within a desired ...

[Historical Perspective of COIL Diagnostics](#)

Jul 17,
2002 14 pages

Authors: [Steven J. Davis](#); [PHYSICAL SCIENCES INC ANDOVER MA](#)

Full Text

In this paper, a history is presented of the development of diagnostic techniques for the chemical oxygen iodine laser (COIL). Several established optically based techniques have been applied to COIL including: visible and near infrared **chemiluminescence**, resonance absorption and laser induced fluorescence. The history of these developments is traced using the diagnostic methods as the overall theme. In many cases a variant of an established diagnostic was used to probe for some key kinetic rate or mechanism. Indeed, the goal of developing the now well established COIL kinetic rate package was ...

[Molecular Mechanism of Bacterial Magnetite Formation and Its Application](#)

Apr 2002 15 pages

Authors: [Tadashi Matsunaga](#); [Yoshiko Okamura](#); [TOKYO UNIV OF AGRICULTURE AND TECHNOLOGY \(JAPAN\)](#)

Full Text

... by lipid bilayer membranes. Sizes of BMPs vary from 50 - 100 nm in diameter, and number over 10 per cell. BMPs are composed of magnetite (Fe(sub 3)O(sub 4)) with a single magnetic domain. Easy aqueous dispersion of BMPs enable development of highly sensitive **chemiluminescence** enzyme immunoassays by the chemical coupling of antibodies on BMP surfaces. BMPs can likewise be used as drug delivery systems employing magnetoliposomes with high capture volumes. We previously reported a technique for preparing recombinant BMPs on which proteins were displayed by gene-fusion. We furthermore applied such ...

Total Results: 116

Pages: [Previous](#) [12\[3\]](#) [Next](#)

Results per page:

50 