Storming Media Pentagon Reports: Fast. Definitive. Complete.

Newsletter

To be informed of important news about our site, enter your email here. You can always unsubscribe later. Your address will not be released to others. (Read our Privacy Policy)

Your name

Your email

Unsubscribe » SUBMIT

Search Results for: Aluminum Oxide

Total Results: **242**

Pages: Previous 1 2 **[3]** 4 5 Next

Results per page: 50

Sort by: Relevancy Title Date Pages Display: Full Text Only

ELECTROCHEMICAL BEHAVIOUR OF OXYGEN AND HYDROGEN PEROXIDE ON ALUMINUM, TANTALUM AND ZIRCONIUM ELECTRODES

Dec 1960 25 pages

Authors: G. Bianchi; G. Caprioglio; MILAN UNIV (ITALY)

Full Text

The cathodic reduction of O and H2O2 on Al, Ta, and Zr was studied by means of a polarization cell and an electronic potentiostat. Al, Ta and Zr, although covered by an **oxide** layer, actedAS CATHODE FOR THE PROCESSES OF O and H2O2 reduction. Overvoltage valves and the polarization curves are listed. The results obtained on these 3 metals are compared with those previously obtained on Ti. Overvoltages for cathodic reduction of O decrease in the following order: Zr, Ta, Ti for acid; Al, Ta, Zr, Ti for neutral; and Zr, Ti, Ta for alkaline solutions. These results indicate that the dangers of ...

EXPERIMENTAL INVESTIGATION OF COMPACT CHARGE IONIZATION

Mar 1, 1960 165 pages

Authors: E. N. Petrick; O. K. Husmann; H. W. Szymanowski; CURTISS-WRIGHT CORP QUEHANNA PA

Full Text

... tests to establish the materials least subject to at tack by cesium, including emitter materials (tungsten, molybdenum, platinum), structural materials (nickel, stainless steel), electrical conductors (copper), and electrical insulators (**aluminum oxide**); (7) investigation of emitter heating techniques, with tests of an inductive technique (no internal connections) and of a direct heating technique; and (8) elimination of fuel handling problems.

SYNTHESIS AND PYROLYSIS OF METAL ALKOXIDES AS POTENTIAL REFRACTORY OXIDE COATINGS FOR GRAPHITE.

May 1963 40 pages

Authors: K.S. Mazdiyasni; C.T. Lynch; DIRECTORATE OF MATERIALS AND EXPLOSIVES RESEARCH AND DEVELOPMENT (GT BRIT)

Full Text

... of hafnia and zirconia on graphite substrates by decomposition of the isopropyl and tertiary butyl alkoxides was in vestigated. The infrared spectra of the isopro poxides-zirconium and hafnium were obtained. Thorium isopropoxide infrared data were also obtained and the spectra compared with titanium and **aluminum** isopropoxides. The tertiary but oxides show more promise for coating applications because of their higher vapor pressures. The vapor pressures and decomposition temperatures of the zirconium and hafnium butoxides were studied. Preliminary data on the oxidation re sistance to 1000 C of ...

INTERACTION OF PROJECTILES AND COMPOSITE ARMOR

Jan 31, 1967 135 pages

Authors: A. L. Florence; T. J. Ahrens; STANFORD RESEARCH INST MENLO PARK CA

Full Text

... fields in the facing plate during the initial stages of impact and to determine deflections and bending moments during the later stages. In addition to this work on the mechanics of projectile-armor interaction, exploratory experiments were undertaken with a view toward establishing the dynamic mechanical properties of **aluminum oxide**, an important facing material.

DEVELOPMENT AND EVALUATION OF TRANSPARENT ALUMINUM OXIDE

Jun 30, 1967 73 pages

Authors: William H. Rhodes; DAVID J. SELLERS; Arthur H. Heuer; Thomas Vasilos; AVCO MISSILES SPACE AND ELECTRONICS GROUP LOWELL MA AVCO SPACE SYSTEMS DIV

Full Text

Polycrystalline alumina (Al2O3) possessing high total and in-line transmission in the visible range was prepared successfully by a combined high temperature hot forging and annealing operation. Transparency was found to be produced by a combination of several pore removal mechanisms active during deformation and primary recrystallization. A strong basal texture normal to the pressing direction was found for both deformation and recrystallization structures, and the high in-line transmission characteristics were thought to be due to a lowering of birefringent scattering because of this texture ...

FRACTOGRAPHIC AND THERMAL ANALYSES OF SHOCKED ALUMINA

Apr 1969 108 pages

Authors: H. Palmour III; C. H. Kim; D. R. Johnson; C. E. Zimmer; NORTH CAROLINA STATE UNIV AT RALEIGH

Full Text

... been examined for evidences of residual strain and annealable excess energy. The findings produced many mutually supporting evidences of local plastic deformation and energy absorption associated with fracture processes in **aluminum oxide** ceramics and sapphire single crystals. Microscopic evidences from replication fracography, and particularly from direct transmission electron microscopy, strongly support the concept of localized plastic deformation processes associated ...

Ceramic Materials in Rolling Contact Bearings Feb 3, 1973 93 pages

Authors: William M. Wheildon; H. Robert Baumgartner; David V. Sundberg; Maurice L. Torti; NORTON CO WORCESTER MA INDUSTRIAL CERAMICS DIV

Full Text

The contract for investigation of ceramic materials in rolling contact bearings, was carried out with high strength silicon nitride, silicon carbide and **aluminum oxide**. Screening rolling contact fatigue testing on silicon nitride with conventional lubricants showed excellent life, greater than M50 steel, at comparable load. The friction and wear properties were determined for silicon nitride, silicon carbide and steel. The coefficient of friction and wear rates are nearly the same for steel-steel and steel-silicon nitride combinations.

Electrophoresis of Colloidal Biological Particles Aug 1969 57 pages

Authors: John F. Lemp Jr.; Eugene D. Asbury; Edward O. Ridenour; FORT DETRICK FREDERICK MD

Full Text

... the same kind of biological particles is uniform in a constant environment. The microscope electrophoresis techniques for mobility and isoelectric point determinations of microscopic particles (bacteria, suspended mammalian tissue cells, **aluminum oxide** particles, and polystyrene latex particles) and submicroscopic particles (proteins and gelatin) are described. The information that can be obtained and the additives for modification of electrophoretic ...

Surface Cleaning by Glow Discharge in High-Volume Gas Flow. Apr 7, 1976 59 pages

Authors: James P. Weston; William W. Balwanz; NAVAL RESEARCH LAB WASHINGTON D C

Full Text

... with the cleaned surface. The liquids used are triply distilled water for detecting by hydrophobic contamination and methylene iodide for detecting water contamination. The surfaces used to demonstrate the cleaning technique were stainless steel and **aluminum oxide**. Some of the contact angles were too flat to observe but were estimated to be less than 1 degree. The small contact angles are intrepreted to mean that there is less than 1 ...

Studies of the Exhaust Products from Solid Propellant Rocket Motors Sep 1976 115 pages

Authors: R. Dawbarn; M. Kinslow; ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Full Text

... to determine the feasibility of conducting environmental chamber tests on the physical processes which occur when a solid rocket motor exhaust mixes with the ambient atmosphere. Of particular interest was the interaction between hydrogen chloride, **aluminum oxide**, and water vapor. The program consisted of three phases: (1) building a small rocket motor and using it to provide the exhaust species in a controlled environment; (2) evaluating instruments used to detect and ...

Determination of Effects of Designated Pollutants on Plant Species Oct 1976 57 pages

Authors: A. L. Granett; O. C. Taylor; CALIFORNIA UNIV RIVERSIDE AIR POLLUTION RESEARCH CENTER

Full Text

... Vandenberg Air Force Base and were grown in greenhouses equipped with evaporative coolers with activated charcoal air filters. The missile products investigated were hydrogen chloride and hydrogen fluoride gases and **aluminum oxide** aerosols, alone and in various combinations of toxicants. The gases were generated by the volatilization of acid liquids into a hot air stream and the aerosols were generated using nitrogen gas to carry the particles ...

Effect of Designated Pollutants on Plants Nov 1977 54 pages

Authors: A. L. Granett; O. C. Taylor; CALIFORNIA UNIV IRVINE

Full Text

The phytotoxicity of hydrogen chloride (HCl) gas and **aluminum oxide** (A12O3) particulates was studied in special plant exposure chambers. Seedlings watered with a salt-enriched (850 ppm NaCl) nutrient solution were more tolerant to damage from HCl then were controls. Seeds germinated after exposure to HCl had reduced seedling lengths compared to controls although germination was not affected. A12O3 alone was not toxic under present test conditions and there was no significant change in plant damage by A12O3 + HCl damage alone. Damage ...

The Effects of Designated Pollutants on Plants Nov 1978 74 pages

Authors: A. L. Granett; O. C. Taylor; CALIFORNIA UNIV IRVINE

Full Text

The phytotoxicity of hydrogen chloride (HC1) gas and **aluminum oxide** (Al2O3) particulates was studied in special plant exposure chambers. These pollutants were generated separately by diluting bottled gas or commercial alumina dust. In addition, generation was affected by open-burning of small pieces of solid rocket fuel. The characteristics of these burn products were investigated. Rocket fuel gases produced phytotoxic responses similar to that seen on plants exposed to commercial HCl gas.

Lubrication with Naturally Occurring Double Oxide Films Nov 10, 1982 60 pages

Authors: M. B. Petterson; S. J. Calabrese; B. Stupp; WEAR SCIENCES INC ARNOLD MD

Full Text

A study was conducted to evaluate the lubrication characteristics of double oxides which could occur naturally on high temperature bearing materials. Consideration was given to the double oxides of iron, nickel, cobalt, rhenium, osmium, molybdenum, tungsten, vanadium, chromium, copper, titanium, **aluminum**, boron, and niobium. A survey was conducted to obtain property data on such compounds and a number selected for evaluation. Primary consideration was given to the rhenates, molybdates, vanadates, borates, osmoniates, and chromates. Friction tests were run over the temperature range 26 to 650C ...

STS-5 (Space Transport System-5) Fish Kill, Kennedy Space Center, Florida Jan 1983 28 pages

Authors: Joseph E. Milligan; Gene B. Hubbard; AIR FORCE OCCUPATIONAL AND ENVIRONMENTAL HEALTH LAB BROOKS AFB TX

Full Text

... on-site investigation of any possible fish kill associated with STS-5 on 11 November 1982. Due to the acuteness of the fish kills and close association with time of launch, STS exhaust products, such as HC1 and/or **aluminum oxide** were suspected as the cause. Other potential causes considered included diseases, parasites, mechanical interference with respiration, insufficient oxygen, trauma, temperature and pH changes, and exposure to other toxic substances. The conclusion was ...

Environmental Effects in Niobium Base Alloys and Other Selected Intermetallic Compounds Dec 15, 1988 68 pages

Authors: G. H. Meier; A. W. Thompson; PITTSBURGH UNIV PA DEPT OF MATERIALS SCIENCE AND ENGINEERING

Full Text

... niobium alloys and other selected intermetallic compounds. This program consists of two parts. The investigations involving oxygen are directed toward describing the conditions which must be achieved in order to have a continuous, protective **Aluminum Oxide** or Silicon dioxide scale developed on niobium-base alloys and compounds, and other selected intermetallics, at temperatures between 600 and 1400 C. The studies concerned with hydrogen effects are directed toward ...

Alternative Test Methodology for Ballistic Performance Ranking of Armor Ceramics May 1989 21 pages

Authors: Patrick Woolsey; David Kokidko; Stephen A. Mariano; ARMY LAB COMMAND WATERTOWN MA MATERIAL TECHNOLOGY LAB

Full Text

... producing no residual penetration, a ballistic performance map for the ceramic is generated. Different materials can be compared on the basis of residual penetration observed for a given areal density. Ceramics tested to date include **aluminum oxide** in 90% and high purity forms, titanium diboride, silicon carbide, and boron carbide. Performance rankings observed for these materials are in agreement with the rankings yielded by conventional V50 protection ballistic ...

Fractographic Analysis of Long Rod Penetrator-Armor Ceramic Interactions Oct 1989 21 pages

Authors: Michael J. Slavin; ARMY LAB COMMAND WATERTOWN MA MATERIAL TECHNOLOGY LAB

Full Text

... for these heavy threats. A program was initiated to evaluate the fracture of a ceramic target when impacted by a tungsten long-rod penetrator (LRP). Following a conventional V50 test of a silicon carbide whisker-reinforced **aluminum oxide**, one target was serial sectioned from the rear. Very fine comminuted ceramic was painstakingly removed from the exit point of the LRP. Tungsten and steel particles were included in the ceramic powder. Keywords: Armor; ...

Flow Induced Nutation Instability in Spinning Solid Propellant Rockets Apr 1990 191 pages

Authors: G. A. Flandro; M. Leloudis; R. Roach; SCIENCE APPLICATIONS INTERNATIONAL CORP LOS ANGELES CA

Full Text

... PAM-D disturbing torque with most eliminated by failure to comply with telemetry data. Two mechanisms still remain to be more fully evaluated. One is the slag sloshing hypothesis, which links the instability to sloshing of accumulations of **aluminum oxide** slag within the aft closure of the rocket motor combustion chamber. This mechanism is preferred because it is similar to the familiar liquid stores sloshing nutation source with the driving mechanism linked to the mass ...

Dynamic Behavior of Ceramic Composites Oct 1991 8 pages

Authors: A. S. Kobayashi; M. Taya; UNIV OF WASHINGTON SEATTLE DEPT OF MECHANICAL ENGINEERING

Full Text

... dynamic fracture of ceramics and ceramic matrix composites are summarized in this final report. One of the most significant accomplishments was to quantify, for the first time, the energy dissipation rate in the brittle silicon carbon(sub w)/**aluminum oxide** ceramic matrix composite (CMC) using moire interferometry together with finite element analysis. The same hybrid experimental-numerical analysis was also used to determine the resistance curve, which compared favorably with ...

From Minerals to Materials: A Facile Synthetic Route to Preceramic Polymers for Aluminum Oxide May 12, 1992 9 pages

Authors: Allen W. Apblett; Christopher C. Landry; Mark W. Mason; Andrew R. Barron; HARVARD UNIV CAMBRIDGE MA DEPT OF CHEMISTRY

Full Text

Reaction of boehmite, (Al(O)(OH)n, with an excess of carboxylic acid (HO2CR) results in the formation of the carboxy substituted alumoxanes, (Al(O) x(OH)y(O2CR)z)n where 2x + y + z = 3 and R = alkyl substituents. The alumoxanes have been fully characterized by SEM, elemental analysis, IR and multinuclear NMR spectroscopy. The physical properties of the alumoxanes are highly dependent on the identity of R, and range from insoluble crystalline powders, e.g. R = CH3, to powders which readily form solutions or gels in hydrocarbon solvents, e. g. R = C5H11. All of the alumoxanes decompose under ...

Development of Capability for Characterization of Ceramic/Ceramic Composites. Part 1. Effects of Reinforcement Geometry on the Mechanical Properties of SiCw/Al2O3 Composites and Prediction of Flexural Properties by Energy Method Jan 1991 49 pages

Authors: Shaik Jeelani; Hassan Mahfuz; Anwarul Haque; Sirajus Salekeen; TUSKEGEE UNIV AL MATERIALS RESEARCH LAB

Full Text

This report describes the progress made during the second year of a two-year program funded by the United States Air Force, Office of Scientific Research, to develop experimental and analytical capability to characterize Ceramic/Ceramic composites at room and elevated temperatures. Composites, Ceramics, Silicon Carbide, **Aluminum Oxide**, Flexure, Fracture.

Thin-Film Permanent Magnets for Integrated Electromagnetic Components Jun 1992 50 pages

Authors: F. J. Cadieu; QUEENS COLL FLUSHING NY DEPT OF PHYSICS

Full Text

... are stable. NdFeB films, with magnetization perpendicular to the plane of the film, were also deposited. Methods developed included: Direct crystallization, in the presence of a magnetic field, of the sputtered materials onto heated substrates; the use of a **Aluminum oxide** boundary layer to promote adhesion and allow the growth of thick films; and the use of Ar and Xe as a sputtering gas to thermalize the sputtered atoms. Magnets such as those developed under ...

Computer Simulations of Epoxy Adhesive Monomer Interactions with Alumina Surfaces Aug 1992 26 pages

Authors: Michael S. Sennett; Walter X. Zukas; Stanley E. Wentworth; ARMY LAB COMMAND WATERTOWN MA MATERIAL TECHNOLOGY LAB

Full Text

An ongoing program in our laboratory seeks to elucidate the effect of **aluminum oxide** on the cure chemistry of epoxy adhesives. The project includes the use of molecular dynamics (MD) techniques to carry out real time simulations of the interaction of various epoxy adhesive monomers with idealized alumina surfaces. Adhesive monomers investigated include the diglycidyl ether of bisphenol A (DGEBA), a brominated form of DGEBA, diaminodiphenyl sulfone (DDS) and methylene dianiline (MDA). Both crystalline and amorphous ...

Emissivity of Rocket Plume Particulates Sep 1992 44 pages

Authors: Curtis D. Whisman; NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Full Text

The optical properties of motor **aluminum oxide** are required inputs to current plume signature prediction codes, such as SIRRM. Accurate predictions are possible only if variations in the particle emissivity due to changes in particle size, contamination, and changing temperature, etc. are known. This investigation demonstrated a simplified method for determination of the emissivity of Rocket motor generated alumina. Plume particulate material was collected on tungsten alloy wire during motor firings. A DC circuit was used to resistively heat the material ...

Fiber Coating by Sputtering for High Temperature Composites Oct 15, 1992 79 pages

Authors: M. L. Emiliani; PRATT AND WHITNEY WEST PALM BEACH FL GOVERNMENT ENGINES AND SPACE PROPULSION

Full Text

... examined as-sputtered Y203 coatings deposited onto various substrates to understand why this coating improves the toughness of Nb-reinforced TiAl. The option program study characterized tungsten and molybdenum coatings applied by hollow cathode magnetron sputtering, and **aluminum oxide** coatings applied by sol-gel processing. Sputtering, Coating, Debond, Composites fracture energy, Fracture toughness, Indentation.

Performance of Reinforced Polymer Ablators Exposed to a Solid Rocket Motor Exhaust Oct 1992 97 pages

Authors: C. Boyer; T. Burgess; J. Bowen; K. Deloach; I. Talmy; NAVAL SURFACE WARFARE CENTER DAHLGREN DIV VA

Full Text

... field of 25 off-the-shelf ablators previously screened by FMC Corporation. They were tested by the Navy in highly aluminized solid rocket motor exhaust plumes to determine their ability to resist erosion and to insulate.... Ablator, Guided Missile Launchers, Erosion, Tactical missiles, Convective heating, Solid rocket motors, **Aluminum oxide** particles.

Template Synthesis of Metal Microtubule Ensembles Utilizing Chemical, Electrochemical, and Vacuum Deposition Techniques Jan 3, 1994 37 pages

Authors: Charles J. Brumlik; Charles R. Martin; Vinod P. Menon; COLORADO STATE UNIV FORT COLLINS DEPT OF CHEMISTRY

Full Text

... microtubules. Four procedures for preparing metal microtubules are described in this paper. The general approach, called template-synthesis, entails using the pores in a microporous membrane as templates for forming the tubules. Microporous anodic **aluminum oxide** membranes and nuclear track-etch membranes are used as the template membranes. Gold and silver microtubules are made with outer diameters as small as 200 nm. These microstructures are characterized by scanning ...

Effect of Surface Condition on Strength and Fatigue Behavior of Alumina Ceramic Nov 1993 90 pages

Authors: NAVAL COMMAND CONTROL AND OCEAN SURVEILLANCE CENTER RDT AND E DIV SAN DIEGO CA

Full Text

... , in an effort to attain the appropriate strength and buoyancy characteristics, is investigating the suitability of ceramics. The vessels typically consist of cylindrical sections and hemispherical end caps of a ceramic such as **aluminum oxide** (alumina), which are joined together via metallic rings made of a titanium alloy Tests of such vessels have shown that fatigue cracks may arise in the alumina during submergence-emergence cycles, which ...

Template Synthesized Nanoscopic Gold Particles: Optical Spectra and the Effects of Particle Size and Shape Jan 25, 1994 43 pages

Authors: Colby A. Foss Jr.; Gabor L. Hornyak; Jon A. Stockert; Charles R. Martin; COLORADO STATE UNIV FORT COLLINS DEPT OF CHEMISTRY

Full Text

We have prepared nanoscopic gold cylinders of controlled radius and aspect ratio via electrodeposition of the metal within the pores of anodically- grown porous **aluminum oxide** membranes. The nanocylinder radii are determined by the pore dimensions of the host alumina which, in turn, depend on anodization conditions. The particle aspect ratios were controlled by varying the amount of Au deposited within the pores The optical spectra of the gold nanocylinder/ alumina composites ...

Validation and Implementation of Optical Diagnostics for Particle Sizing in Rocket Motors Dec 1993 45 pages

Authors: Paul V. Gomes; NAVAL POSTGRADUATE SCHOOL MONTEREY CA

Full Text

Aluminum oxide(Al2O3) particles of known size distribution were cast into a solid propellant which burned at temperatures less than the melting point of Al2O3. Thus, particles of known size distribution existed at the nozzle inlet and in the plume. Malvern particle sizing instruments were used to make measurements at these two location using a windowed subscale motor and the results were compared to the known distribution. In the motor, measurements were limited due to disruptive flow from the window purge gas. However, the unaffected larger modes were properly measured. In the plume, ...

Processing and Characterization of Mechanically Alloyed NiAl-Based Alloys Jul 20, 1994 85 pages

Authors: Marek Dollar; Philip Nash; Stanislaw Dymek; Seung- Joon Hwang; Sung-Jae Suh; ILLINOIS INST OF TECH CHICAGO DEPT OF METALLURGICAL AND MATERIALS ENGINEERING

Full Text

Mechanical alloying of powders followed by hot extrusion has been used to produce NiAl-based materials. The technique is capable of producing fully dense, free of cracks, fine grained materials containing a bimodal distribution of **aluminum oxide** dispersoids. The mechanically alloyed materials produced in our laboratory are much stronger at both ambient and elevated temperatures and significantly more ductile than their cast counterparts. Minimum creep rates in the MA NiAl are ...

Diagnostic Developments for Velocity and Temperature Measurements in Uni-Element Rocket Environments Aug 1995 130 pages

Authors: Kenneth D. Philippart; AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH

Full Text

... profiles were obtained for firings with a gaseous oxygen (GO2)/gaseous hydrogen (GH2) coaxial shear injector at axial locations of 1.6 mm (0.063 in.), 6.4 mm (0.25 in.), 12.7 mm (0.5 in.), 25.4 mm (1 in.) and 50.8 mm (2 in.). **Aluminum oxide** particles of various sizes seeded the flow in an attempt to explain the discrepancies. While cold-flow simulations were promising, hot-fire results for the various particles were virtually identical and still lower than earlier data. The hot- firings ...

Investigations of the Ballistic Response of Brittle Materials. Nov 1995 114 pages

Authors: Charles E. Anderson Jr.; James D. Walker; Jim Lankford; SOUTHWEST RESEARCH INST SAN ANTONIO TX

Full Text

... include experimental testing, numerical simulations, constitutive evaluation, and investigation of fundamental material response to high rate loading. Depth-of-penetration tests with and without cover plates investigated the performance of 99.5% pure **aluminum oxide** tiles to ballistic impact using L/D 10 tungsten heavy alloy projectiles at two impact velocities, nominally 1.5 and 1.8 km/s. Numerical simulations, using the EPIC95 finite element hydrocode, were ...

Investigations of the Ballistic Response of Brittle Materials Nov 1995 114 pages

Authors: Charles E. Anderson Jr.; James D. Walker; Jim Lankford; SOUTHWEST RESEARCH INST SAN ANTONIO TX

Full Text

... to include experimental testing, numerical simulations, constitutive evaluation, and investigation of fundamental material response to high rate loading. Depth-of-penetration tests with and without cover plates investigated the performance of 99.5% pure **aluminum oxide** tiles to ballistic impact using LJD 10 tungsten heavy alloy projectiles at two impact velocities, nominally 1.5 and 1.8 km/s. Numerical simulations, using the EPIC95 finite element ...

Heterogeneous Chemistry in Solid Rocket Motor Plumes Mar 1997 18 pages

Authors: Peter M. Felker; CALIFORNIA UNIV LOS ANGELES DEPT OF CHEMISTRY AND BIOCHEMISTRY

Full Text

Reaction rates of ozone decomposition and adsorption/desorption rates of HCl on **aluminum oxide** (alumina) particles were measured by a new technique involving real-time ultraviolet absorption spectroscopy in a static reactor. Reaction probabilities eta are reported for ozone on alpha-alumina, gamma- alumina, and chromatographic alumina (hydoxylated alumina), respectively, over the temperature range -60 to 200 deg C. These measurements expand on previous measurements from this group using a flow tube reactor. ...

Physical Characteristics of Fire-Extinguishing Powders Aug 1997 67 pages

Authors: Anthony E. Finnerty; Lawrence J. Vande Kieft; Andrew Drysdale; ARMY RESEARCH LAB ABERDEEN PROVING GROUND MD

Full Text

... dimension' was defined and applied in order to rank the powders on a size basis. Eleven fire-extinguishing powders and two common commercial powders were examined by both forms of microscopy. The fire-extinguishing grade of **aluminum oxide** had the smallest average characteristic dimension followed by the 'micronized' sodium bicarbonate samples. These sodium bicarbonate powders appeared to have very little agglomeration of the particles. The large amount of drying agent ...

The Design of Metallic Composites Made From Nickel Aluminide Nov 1997 3 pages

Authors: S. L. Phoenix; CORNELL UNIV ITHACA NY DEPT OF MATERIALS SCIENCE AND ENGINEERING

Full Text

The overall objective of this project was to design the microstructure and to test the fracture toughness and creep-rupture properties of metal-matrix composites constructed from NiAl and **aluminum oxide**. The goal has been to obtain a composite that not only has excellent high temperature creep properties, but also has good fracture toughness at room temperature. Principal microstructural variables have been (i) the crystallographic texture in the metallic phase, ...

Processing of Nanocrystalline Nitrides and Oxide Composites Sep 1998 4 pages

Authors: Jackie Y. Ying; Martin L. Panchula; MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF CHEMICAL ENGINEERING

Full Text

We have examined various synthesis parameters for producing nanocrystalline **aluminum** nitride and established maps relating surface area and crystallite size to synthesis conditions. Preliminary analysis of the powder compacts and initial sintering studies show a great deal of potential. Green compacts with a very fine average pore size of 5.5 nm were obtained readily. Densities of 96% were achieved without sintering additives after 30 minutes of pressureless sintering at 1900 deg C in flowing nitrogen. We are currently examining sintering behavior at lower temperatures in detail. Future ...

Thin Dense Chrome Bearing Insertion Program; Pyrowear 675 and Cronidur Wear Testing Oct 1998 59 pages

Authors: Michael Johnson; John Laritz; Mark Rhoads; GE AIRCRAFT ENGINES CINCINNATI OH ADVANCED ENGINEERING TECHNOLOGIES DEPT

Full Text

... selected subscale and full-scale tests. Subscale tests evaluated the wear characteristics and corrosion resistance. Full-scale tests demonstrated contamination resistance at normal F110-GE-129 operating conditions with exposure to abnormal **aluminum oxide** contamination levels. Cronidur 30 demonstrated improved corrosion resistance relative to M50 in salt water and tap water in subscale corrosion testing. Pyrowear 675 also demonstrated improved ...

New Approaches to Understanding and Preventing Corrosion of Aluminum and its Alloys Apr 25, 2001 3 pages

Authors: Daniel A. Buttry; WYOMING UNIV LARAMIE DEPT OF CHEMISTRY

Full Text

... in the project is to remove intermetallic inclusions from AA2O24 surfaces by chemical etching. The procedure is to expose the surface to an oxidant, such as persulfate, in the presence of complexing agents, such as ethylene diamine (EN) and EDTA. The objective is to have the complexing agents attack the **oxide**, and facilitate the oxidative removal of noble metals from the intermetallic inclusions. In order to monitor this process, we have developed elemental mapping procedures that allow us to use energy dispersive spectroscopy (EDS) to evaluate the effectiveness of the etching process.

Comparison of Sampler Collection Efficiency Measurements Using a Polydisperse Solid Aerosol and A Monodisperse Liquid Aerosol Jun 2001 17 pages

Authors: Jana Kesavan; Robert W. Doherty; EDGEWOOD CHEMICAL BIOLOGICAL CENTER ABERDEEN PROVING GROUND MD

Full Text

... to determine the merits of using a single test of a polydisperse solid aerosol in place of multiple tests of monodisperse liquid aerosols in the characterization of aerosol sampling systems. The polydisperse aerosol chosen was an **aluminum oxide** (Al2O3) commercial abrasive. Analysis of the Al2O3 particles was by a Coulter Particle Size Analyzer. The monodisperse aerosols were fluorescent oleic acid droplets generated by a vibrating orifice aerosol generator (VOAG). ...

Comparison of Sampler Collection Efficiency Measurements Using a Polydisperse Solid Aerosol and a Monodisperse Liquid Aerosol Jun 2001 17 pages

Authors: Jana Kesavan; Robert W. Doherty; EDGEWOOD CHEMICAL BIOLOGICAL CENTER ABERDEEN PROVING GROUND MD

Full Text

... to determine the merits of using a single test of a polydisperse solid aerosol in place of multiple tests of monodisperse liquid aerosols in the characterization of aerosol sampling systems. The polydisperse aerosol chosen was an **aluminum oxide** (Al2O3) commercial abrasive. Analysis of the Al2O3 particles was by a Coulter Particle Size Analyzer. The monodisperse aerosols were fluorescent oleic acid droplets generated by a vibrating orifice aerosol generator (VOAG). ...

Characterization of the SCP 1021 Aerosol Sampler Nov 2001 23 pages

Authors: Jana Kesavan; Robert W. Doherty; EDGEWOOD CHEMICAL BIOLOGICAL CENTER ABERDEEN PROVING GROUND MD

Full Text

This study characterized the SCP 1021 aerosol sampler (SCP Dynamics, Inc., Minneapolis, MN) at flow rates of 1350 L/min and 1000 L/min. Polydisperse **aluminum oxide** (Al2O3) particles were used as the solid particles, and the analysis was by Coulter counter. Fluorescent oleic acid particles were used as the monodisperse liquid particles, and the analysis was by fluorometry. The results show that: (1) the sampling efficiency curves for both solid and liquid particles have a peak at ...

Marked Influence of Crystal Structure on the Friction and Wear Characteristics of Cobalt and Cobalt-Base Alloys in Vacuum to 10-9 Millimeter of Mercury I - Polycrystalline and Single Crystal Cobalt Dec 1964 21 pages

Authors: Donald H. Buckley; Robert L. Johnson; NATIONAL AERONAUTICS AND SPACE ADMINISTRATION CLEVELAND OH LEWIS RESEARCH CENTER

Full Text

Friction and wear characteristics were determined for polycrystalline Cobalt sliding on various materials (polycrystalline cobalt, 440-C, 52l00, and **aluminum oxide**) in vacuum (l0-9 mm Hg). The influence of crystal transformation on the friction and wear characteristics of cobalt were determined by varying sliding velocity and ambient temperature. The effect of orientation of single- crystal cobalt sliding on polycrystalline cobalt was also determined. Friction and wear experiments were ...

Design and Cooling Performance of a Dump-Cooled Rocket Engine Aug 1966 48 pages

Authors: Albert J. Pavli; Jerome K. Curley; Philip A. Masters; R. M. Schwartz; NATIONAL AERONAUTICS AND SPACE ADMINISTRATION CLEVELAND OH LEWIS RESEARCH CENTER

... thrust rocket engine operating at 100-psig chamber pressure with gaseous hydrogen and liquid oxygen as propellants and liquid hydrogen as a coolant. Fourteen firings were made; of these, the last four were with a refractory coating of **aluminum oxide** on the flame-side surface. Data showing the measured and analytical heat

Full Text fluxes along with coolant temperatures and pressures through the engine for various coolant flows are presented as a means of determining the minimum ...

Novel Corrosion Inhibition Methods for Aluminum Surfaces May 7, 2002 11 pages

Authors: John T. Yates Jr.; PITTSBURGH UNIV PA DEPT OF CHEMISTRY

Full Text The non-thermal activation of the oxidation of the Al(111) surface has been investigated. It has been found that compared to thermally grown Al2O3 films of equivalent thickness a factor of 10-30 increase in the resistance of **oxide** films may be achieved by the use of non-thermal activation methods such as electron bombardment of adsorbed water, electron bombardment of adsorbed O2 and Al2O3 clusters, and by oxidation by O3.

Overview Environmental Assessment for the Space Based Infrared System (SBIRS) Dec 1996 121 pages

Authors: Anthony C. Davis; Donald L. Koehler; J. D. Latimer; Craig McColloch; David S. Reasons; PARSONS ENGINEERING SCIENCE INC AUSTIN TX

Full Text ... which consist of launch vehicle impacts to the stratospheric ozone layer from rocket exhaust and deorbiting debris; and local impacts, which consist of launch clouds from the launch vehicles that will contain hydrochloric acid and **aluminum oxide**, electromagnetic radiation from antennas, and local spills from prelaunch activities. The EA evaluated how the Geosynchronous Earth Orbit Satellites and the launch vehicles would affect air quality, water resources, the water supply ...

The Potential for Ozone Depletion in Solid Rocket Motor Plumes by Heterogeneous Chemistry Aug 1996 22 pages

Authors: M. S. Hanning-Lee; P. M. Felker; J. A. Syage; John J. Lamb; TRW SPACE AND TECHNOLOGY GROUP REDONDO BEACH CA

Full Text Rates of ozone decomposition on **aluminum oxide** (alumina) particles were measured in a flow tube reactor equipped with molecular beam sampling mass spectrometry and ultraviolet absorption spectroscopy, and in a static reaction cell equipped with ultraviolet absorption spectroscopy. Reaction probabilities eta are reported for ozone on alpha-alumina, gamma-alumina, and chromatographic alumina (hydroxylated alumina), respectively, over the temperature range -60 to 200 degrees C. This work addresses the potential for stratospheric ozone depletion by launch ...

Stratospheric Effects of Rocket Exhaust: Heterogeneous Processes Sep 30, 1999 14 pages

Authors: Mario J. Molina; John R. Edwards; Daniel Pilson; Tyrrel W. Smith Jr.; TRW INC REDONDO BEACH CA ELECTRONICS AND TECHNOLOGY OPERATIONS

Full Text The focus of this project has been the laboratory investigation of chemical processes involving the effects of particles emitted by solid rocket motors (SRMs) on stratospheric ozone. Emphasis has been placed on the efficiency of the catalytic chlorine activation process occurring on the surface of **aluminum oxide** particles.

Total Results: **242** Pages: Previous 1 2 **[3]** 4 5 Next Results per page: 50

© 2001-2010 Storming Media LLC. All rights reserved.