Kim Michael Eriksen - DTU Orbit (20/07/2017)

**Organisations**

**Associate Professor, Department of Chemistry**
04/07/2003 → 03/09/2013 Former
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**Publications:**

**Structure of caesium disulfate at 120 and 273 K**
The crystal structures of Cs2S2O7 at 120 and 273 K have been determined from X-ray single-crystal data. Caesium disulfate represents a new structure type with a uniquely high number of independent formula units at 120 K: In one part caesium ions form a tube surrounding the disulfate ions, [Cs8(S2O7)6+]n; in the other part a disulfate double-sheet sandwiches a zigzagging caesium ion chain, [Cs2(S2O7)6−]n. Caesium disulfate shows an isostructural order–disorder transition between 230 and 250 K, where two disulfate groups become partially disordered above 250 K. The Cs+ ion arrangement shows a remarkable similarity to the high-pressure RbIIV metal structure.

**General information**
State: Published
Organisations: X-ray Crystallography, Department of Chemistry, Energy and Materials, Sustainable and Green Chemistry
Authors: Ståhl, K. (Intern), Berg, R. W. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 551-557
Publication date: 2009
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Acta Crystallographica. Section B: Structural Science
Volume: 65
Issue number: 5
ISSN (Print): 0108-7681
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.68 SNIP 0.934 CiteScore 2.14
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.871 SNIP 1.48 CiteScore 2.37
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.834 SNIP 2.459 CiteScore 1.94
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.677 SNIP 0.989
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.921 SNIP 1.392
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.969 SNIP 1.604
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Alternative flue gas cleaning by catalysis, electrocatalysis and selective gas absorption

General information
State: Published
Organisations: Department of Chemistry, Sustainable and Green Chemistry, Centre for Catalysis and Sustainable Chemistry, Department of Chemistry
Authors: Due-Hansen, J. (Intern), Rasmussen, S. B. (Intern), Huang, J. (Intern), Riisager, A. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Hamma-Cugny, H. (Intern), Rogez, J. (Ekstern), Winnick, J. (Ekstern), Wasserscheid, P. (Ekstern)
Publication date: 2007
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 210002
Publication: Research › Conference abstract for conference – Annual report year: 2007

Caesium disulfate at 120 and 273 K.

General information
State: Published
Organisations: Department of Chemistry
Authors: Ståhl, K. (Intern), Berg, R. W. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Publication date: 2007
Event: Abstract from 24th European Crystallographic Meeting, Marrakech, Morocco.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 208160
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2007

Caesium disulfate at 120 and 273 K. A novel structure type.

General information
State: Published
Organisations: X-ray Crystallography, Department of Chemistry, Energy and Materials, Department of Chemistry, Centre for Catalysis and Sustainable Chemistry
Conductivity, calorimetry and phase diagram of the NaHSO₄–KHSO₄ system

Physico-chemical properties of the binary system NaHSO₄–KHSO₄ were studied by calorimetry and conductivity. The enthalpy of mixing has been measured at 505 K in the full composition range and the phase diagram calculated. The phase diagram has also been constructed from phase transition temperatures obtained by conductivity for 10 different compositions and by differential thermal analysis. The phase diagram is of the simple eutectic type, where the eutectic is found to have the composition X(KHSO₄)=0.44 (melting point ≈ 406 K). The conductivities in the liquid region have been fitted to polynomials of the form κ(X)=A(X)+B(X)(T-Tₘ)+C(X)(T-Tₘ)², where Tₘ is the intermediate temperature of the measured temperature range and X, the mole fraction of KHSO₄. The possible role of this binary system as a catalyst solvent is also discussed. (C) 2005 Elsevier B.V. All rights reserved.

General information
State: Published
Organisations: Department of Chemistry, Centre for Catalysis and Sustainable Chemistry
Authors: Hind, H. (Intern), Rasmussen, S. B. (Intern), Rogez, J. (Ekstern), Alaoui-Elbelghiti, J. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 200-204
Publication date: 2006
Main Research Area: Technical/natural sciences

Publication information
Journal: Thermochimica Acta
Volume: 440
Issue number: 2
ISSN (Print): 0040-6031
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.683 SNIP 1.17 CiteScore 2.4
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.706 SNIP 1.125 CiteScore 2.18
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.916 SNIP 1.489 CiteScore 2.56
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.628 SNIP 1.513 CiteScore 2.33
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.75 SNIP 1.424 CiteScore 2.1
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.588 SNIP 1.286 CiteScore 1.99
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.572 SNIP 1.246
BFI (2009): BFI-level 1
Synthesis and characterization of supported Pt and Pt alloys nanoparticles used for the catalytic oxidation of sulfur dioxide.

Controlled pore glass silica (CPG) was used as support to prepare platinum-based catalysts using the wet impregnation method and DMSO or CHCl3 as solvent. In all cases, the catalyst loading with the active phase was 2 wt%. The catalysts were tested for the SO2 oxidation reaction at atmospheric pressure in the temperature range of 250–700 °C. The effect of doping the active metal with rhodium and palladium was also studied. The catalytic activities of the supported catalysts were found to follow the order Pt–Pd/CPG > Pt–Rh/CPG > Pt/CPG. A significant synergistic effect of the Pt–Pd alloy was observed compared with the SO2 conversion efficiency of the individual metals supported on CPG. The effect of the solvent used in the impregnation step is also discussed with regard to the properties of the final product and to catalytic activity.
The role of support and promoter on the oxidation of sulfur dioxide using platinum based catalysts

The catalytic oxidation of SO2 to SO3 was studied over platinum based catalysts in the absence and the presence of dopants. The active metal was supported on silica gel or titania (anatase) by impregnation. The activities of the silica supported catalysts were found to follow the order PtRh/SiO2 > Pt/SiO2 > Pt-Al/SiO2. For the samples supported on titania the respective order was Pt/TiO2 > Pt-Rh/TiO2 > Pt-Al/TiO2. The size of the particles of the active phase, the presence of dopants and the purity of the catalyst were found to affect the catalytic performance. A careful selection of the pH of the impregnation solution and of the reduction temperature of the precursor salts resulted in a very active catalyst with average particle size of 1.7 nm. (c) 2006 Elsevier B.V. All rights reserved.

General information
Titania Supported Pt and Pt/Pd Nano-particle Catalysts for the Oxidation of Sulfur Dioxide.
Several types of titania (anatase) were used as supports for pure platinum and Pt–Pd bimetallic alloy catalysts. The preparation methods, normal wet impregnation technique and flame aerosol synthesis, obtained metal loadings of 2% by weight. The prepared catalysts were tested for SO2 oxidation activity at atmospheric pressure in the temperature range 250–600 °C. The SO2 to SO3 conversion efficiency of the Pt–Pd alloy was significantly higher than that of the individual metals. The effects of the preparation method and the titania type used on the properties and activity of the resulting catalyst are discussed.

General information
State: Published
Organisations: Department of Chemical and Biochemical Engineering, Department of Chemistry, Technical University of Denmark
Authors: Koutsopoulos, S. (Ekstern), Johannessen, T. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 270-276
Publication date: 2006
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Catalysis
Volume: 238
Issue number: 1
ISSN (Print): 0021-9517
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 2.441 SNIP 2.154 CiteScore 7.27
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.703 SNIP 2.198 CiteScore 7.23
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.685 SNIP 2.25 CiteScore 6.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.56 SNIP 2.108 CiteScore 6.42
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.005 SNIP 2.277 CiteScore 6.17
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.11 SNIP 2.207 CiteScore 6.23
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
Vanadium-Sulfate-Pyrosulfate Electrolytes for Electrochemical Removal of Sulfur Dioxide

General information
State: Published
Organisations: Department of Chemistry, Department of Chemistry
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Winnick, J. (Ekstern)
Pages: 194-202
Publication date: 2006

Host publication information
Title of host publication: Molten Salts XIV, ECS Proceedings: High Temperature Molten Salts
Volume: 14
ISBN (Print): 1-56677-514-0
Main Research Area: Technical/natural sciences
Conference: 206th Meeting of The Electrochemical Society, Inc., 01/01/2004
Source: orbit
Source-ID: 194415
Publication: Research › Article in proceedings – Annual report year: 2006

Supported Liquid Phase Catalysis: An old success with molten salts - a new era with ionic liquids?

General information
State: Published
Organisations: Department of Chemistry, Centre for Catalysis and Sustainable Chemistry
The crystal structure determination and refinements of K₂S₂O₇, KNaS₂O₇ and Na₂S₂O₇ from X-ray powder and single crystal diffraction data

General information
State: Published
Organisations: Department of Chemistry, Faculté des Sciences St Jérôme, University of Copenhagen
Pages: 1697-1704
Publication date: 2005
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Solid State Chemistry
Volume: 178
ISSN (Print): 0022-4596
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.615 SNIP 0.873 CiteScore 2.09
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.687 SNIP 0.961 CiteScore 2.18
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.801 SNIP 1.073 CiteScore 2.35
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.773 SNIP 1.038 CiteScore 2.22
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.927 SNIP 1.177 CiteScore 2.27
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.981 SNIP 1.315 CiteScore 2.5
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.051 SNIP 1.194
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.027 SNIP 1.295
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.981 SNIP 1.166
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.031 SNIP 1.283
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.016 SNIP 1.308
Crystal Structure and Spectroscopic Properties of CsVO2SO4

General information
State: Published
Organisations: Department of Chemistry, Institute of Chemical Engineering and High Temperature Chemical Processes
Authors: Rasmussen, S. B. (Intern), Boghosian, S. (Ekstern), Nielsen, K. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 3697-3701
Publication date: 2004
Main Research Area: Technical/natural sciences

Publication information
Journal: INORGANIC CHEMISTRY
Volume: 43
Issue number: 12
ISSN (Print): 0020-1669
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.64 SJR 1.774 SNIP 1.198
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.805 SNIP 1.239 CiteScore 4.7
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.869 SNIP 1.314 CiteScore 4.69
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.819 SNIP 1.379 CiteScore 4.9
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.08 SNIP 1.35 CiteScore 4.72
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Physico-chemical Properties and Transition Metal Complex formation in Alkali Pyrosulphate and Hydrogen Sulphate Melts.

General information
State: Published
Organisations: Department of Chemistry, Faculté des Sciences St Jérôme, Institut Universitaire des Systèmes Thermiques Industriels
Authors: Rasmussen, S. B. (Ekstern), Hamma, H. (Ekstern), Eriksen, K. M. (Intern), Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Fehrmann, R. (Intern)
Pages: 189-196
Publication date: 2004

Host publication information
Title of host publication: Proc. 7th International Conference on Molten Slags, Fluxes and Salts.
Main Research Area: Technical/natural sciences
Conference: Proc. 7th International Conference on Molten Slags, Fluxes and Salts., The South African Institute of Mining and Metallurgy, Johannesburg, South Africa, 01/01/2004
Source: orbit
Source-ID: 178200
Publication: Research › Article in proceedings – Annual report year: 2004

Vanadia-silica and vanadia-cesium-silica catalysts for oxidation of SO2
Mesoporous vanadia-silica catalysts have been prepared by three different sol-gel procedures using tetraethylorthosilicate (TEOS), vanadyl acetylacetonate (VAA), or VOCl3 and in some cases quaternary ammonium salts ((CH3)(3)C14H29N+Br- or (C10H21)(4)N+Br-) as surfactants. According to procedure A, TEOS and VAA were
concomitantly hydrolyzed, in procedure B TEOS was prehydrolyzed and vanadium precursor was added to the silica sol, and in procedure C both TEOS and vanadium precursors were separately prehydrolyzed. The sol-gel procedures were controlled by checking the effect of the hydrolysis pH, refluxing time, surfactant, and conditions of gellifications (slow evaporation at room temperature or autoclavization). The samples were dried under vacuum, first at room temperature, then at 373 K, and finally calcined at 773 K. ICP-AES analysis indicated for all samples a vanadium content of around 6.5 wt%. The samples were impregnated with Cs2SO4 resulting in a Cs:V ratio of 3:1 and then dried and calcined under the same conditions. The catalysts were characterized using several methods: sorption isotherms of N2 at 77 K, XRD, and XPS. The results of the characterization indicated that during calcination of the V/Cs catalysts vanadia is dissolved in a sulfate containing molten salt. The activity of these catalysts for the oxidation of SO2 was tested in a gas containing 2% SO2, 19% O2, 79% N2 in the temperature range 523-823 K. Similar experiments with gases containing 10% H2O in the feed or with wet catalysts were also performed. The activation of the catalysts and the catalytic behavior were monitored by in situ Raman and EPR spectroscopy. These characterization techniques indicated that the active molten phase contains vanadium oxosulfato complexes similar to the V2O5-M2S2O7 (M = alkali metal)-based industrial catalyst, where kieselghur is used as carrier material. The high dispersion of vanadium in the studied catalysts results in an increased catalytic activity for the oxidation of SO2 contained in feed gases with low SO2 content.

General information
State: Published
Organisations: Department of Chemistry, University of Bucharest, Institute of Chemical Engineering and High Temperature Chemical Processes
Authors: Pârvulescu, V. I. (Ekstern), Paun, C. (Ekstern), Pârvulescu, V. (Ekstern), Alifanti, M. (Ekstern), Giakoumelou, I. (Ekstern), Boghosian, S. (Ekstern), Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 24-36
Publication date: 2004
Main Research Area: Technical/natural sciences

Publication information
Journal: JOURNAL OF CATALYSIS
Volume: 225
Issue number: 1
ISSN (Print): 0021-9517
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 2.441 SNIP 2.154 CiteScore 7.27
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.703 SNIP 2.198 CiteScore 7.23
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.685 SNIP 2.25 CiteScore 6.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.56 SNIP 2.108 CiteScore 6.42
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.005 SNIP 2.277 CiteScore 6.17
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.11 SNIP 2.207 CiteScore 6.23
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.376 SNIP 2.213
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Catalytic and Chemical Properties of Boiler Deposits from Orimulsion Fuel

General information
State: Published
Organisations: Department of Chemistry, Department of Physics, Energi E2 A/S
Pages: 360-369
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: PowerPlant Chemistry
Volume: 5
Issue number: 6
ISSN (Print): 1438-5325
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: English
Source: orbit
Source-ID: 39012
Publication: Research - peer-review › Journal article – Annual report year: 2003

High Temperature NMR Studies of Ionic-Liquid Catalysts

General information
State: Published
Organisations: Department of Chemistry, Boreskov Institute of Catalysis
Authors: Lapina, O. (Ekstern), Terskikh, V. (Ekstern), Bal'zhinimaev, B. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Ionic Liquids as Catalysts for Sulfuric acid Production and Cleaning of Flue Gases

General information
State: Published
Organisations: Department of Chemistry, Georgia Institute of Technology
Authors: Fehrmann, R. (Intern), Eriksen, K. M. (Intern), Rasmussen, S. B. (Intern), Winnick, J. (Ekstern)
Pages: 253-262
Publication date: 2003

Host publication information
Title of host publication: Green Industrial Applications of Ionic Liquids : II. Mathematics, Physics and Chemistry
Volume: 92
Place of publication: Dordrecht, The Netherlands
Publisher: Kluwer Academic Publishers
ISBN (Print): 1-4020-1137-7
Main Research Area: Technical/natural sciences
Conference: NATO Advanced Research Workshop on Green Industrial Applications of Ionic Liquids, Heraklion, Crete, Greece, 01/01/2000
Source: orbit
Source-ID: 39046
Publication: Research - peer-review › Article in proceedings – Annual report year: 2003

Propene and 1-octene hydroformylation with silica-supported, ionic liquid-phase (SiLP) Rh-phosphine catalysts in continuous fixed-bed mode

General information
State: Published
Organisations: Department of Chemistry
Authors: Riisager, A. (Intern), Eriksen, K. M. (Intern), Wasserscheid, P. (Ekstern), Fehrmann, R. (Intern)
Pages: 149-153
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: Catalysis Letters
Volume: 90
ISSN (Print): 1011-372X
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.733 SNIP 0.768 CiteScore 2.39
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.757 SNIP 0.757 CiteScore 2.27
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.895 SNIP 0.937 CiteScore 2.56
Propene and l-octene hydroformylation with silica-supported, ionic liquid-phase (SILP) Rh-phosphine catalysts in continuous fixed-bed mode

Supported ionic liquid-phase (SILP) catalysts were made by immobilizing Rh-monophosphine complexes of bis(m-phenylguanidinium) phenylphosphine 1 and NORBOS 2 ligands in 1-n-butyl-3-methylimidazolium hexafluorophosphate, [BMIM][PF6], on a silica support. The catalysts were active in continuous gas- and liquid-phase hydroformylation of propene and 1-octene, exhibiting TOFs up to 88 h(-1) for SILP Rh-2 catalysts, while only low selectivities up to 74% n-aldehyde (n/iso ratio of 2.8) were obtained. This is the first example of continuous fixed-bed liquid-phase hydroformylation using SILP catalysts.

General information
State: Published
Organisations: Department of Chemistry, Rheinisch-Westfälische Technische Hochschule Aachen
Authors: Riisager, A. (Intern), Eriksen, K. M. (Intern), Wasserscheid, P. (Ekstern), Fehrmann, R. (Intern)
Propene Hydroformylation by Supported Aqueous-phase Rh-NORBOS Catalysts

The gas-phase hydroformylation reaction of propene using supported aqueous-phase (SAP) Rh-NORBOS modified catalysts in a continuous flow reactor has been examined. SAP catalysts supported on six different support materials were made by wet impregnation using solutions of the precursor complex Rh(acac)(CO)(2) and NORBOS ligand. Catalytic performance of silica gel-based catalysts was examined by altering catalyst composition and reaction conditions. Results were compared to analogous TPPTS catalysts and to catalysts supported on alternative support materials, e.g. silica glass, alumina and carbon. Based on these results the aqueous and the homogeneous nature of the SAP catalysts are discussed.

General information
State: Published
Organisations: Department of Chemistry, Department of Chemical and Biochemical Engineering
Authors: Riisager, A. (Intern), Eriksen, K. M. (Intern), Hjortkjær, J. (Intern), Fehrmann, R. (Intern)
Pages: 259-272
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of molecular catalysis a-chemical
Volume: 193
Issue number: 1-2
ISSN (Print): 1381-1169
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 1.006 SNIP 1.095 CiteScore 3.96
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.052 SNIP 1.262 CiteScore 3.93
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.092 SNIP 1.431 CiteScore 3.93
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.155 SNIP 1.315 CiteScore 3.56
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.257 SNIP 1.363 CiteScore 3.25
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.242 SNIP 1.252 CiteScore 3.14
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.248 SNIP 1.342
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.321 SNIP 1.425
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.259 SNIP 1.232
The conductivity of the binary system CS2S2O7-CsHSO4 has been measured at 20 different molten compositions in the full composition range and in the temperature range 430-750 K. From the obtained liquidus-solidus phase transition temperatures, the phase diagram has been constructed. It is of the simple eutectic type with the composition \( X(\text{CsHSO}_4) = 0.86 \) and temperature of fusion of 470 K for the eutectic. The previously unpublished temperature of fusion of \( \text{CsHSO}_4 \) was found to be 491.7 K. The experimental phase diagram is in good accordance with a calculated diagram based on measured thermodynamic properties of the pure compounds and the heat of liquid-liquid mixing measured for \( X(\text{CsHSO}_4) = 0.5 \) and 1.0. Cs-113 and O-17 NMR spectra and Raman spectra of the liquid Cs2S2O7-CsHSO4 system indicate the presence of a temperature sensitive equilibrium \( 2\text{HSO}_4(\text{aq}) \rightarrow \text{S}_2\text{O}_7^{2-} + \text{H}_2\text{O} \). Where the water molecules are strongly associated in the melt. Fast exchange reactions take place between the species present, leading to the observed O-17 NMR single line with an averaged chemical shift. Super-ionic and thermodynamic stable phases and the temperatures of phase transitions have been identified from the NMR measurements on \( \text{CsHSO}_4 \), CS2S2O7, and Cs2S2O7-CsHSO4 mixtures. For 11 selected compositions covering the entire composition range of the CS2S2O7-CsHSO4 binary system, the conductivity of the molten state has been expressed by equations of the form \( k(X) = A(X) + B(X)(T - T_m) + C(X)(T - T_m)^2 \) where \( T_m \) is the intermediate temperature of the measured temperature range and \( X \) is the initial mol fraction of CsHSO4.
Catalytic and electrocatalytic cleaning of alkali containing flue gases
Crystal structure and spectroscopic properties of Na2K6(VO)2(SO4)7

Red-brown crystals of a new mixed alkali oxo sulfato vanadium(V) compound Na2K6(VO)2(SO4)7, suitable for X-ray determination, have been obtained from the catalytically important binary molten salt system M2S2O7-V2O5 (M = 80% K and 20% Na). By slow cooling of a mixture with the mole fraction X-V2O5 = 0.24 from 325 degreesC, i.e., just below the liquidus temperature, to the solidus temperature of around 300 degreesC, a dark reddish amorphous phase was obtained containing crystals of the earlier described V(V)-V(IV) mixed valence compound K-6(VO)(4)(SO4)(8) and Na2K6-(VO)(2)(SO4)(7) described here. This compound crystallizes in the tetragonal space group P4(3)2(1)2 (No. 96) with a = 9.540(3) Angstrom, c = 29.551(5) Angstrom at 20 degreesC and Z = 4. It contains a distorted VO6 octahedron with a short V-O bond of 1.552(6) Angstrom, a long one of 2.276(5) Angstrom trans to this, and four equatorial V-O bonds in the range 1.881(6)-1.960-(6) A. The deformation of the VO6 octahedron is less pronounced compared to that of the known oxo sulfato V(V) compounds. Each VO3+ group is coordinated to five sulfate groups of which two are unidentately coordinated and three are bidentate bridging to neighboring VO3+ groups. The length of the S-O bonds in the S-O-V bridges of the two unidentately coordinated sulfate groups are 1.551(6) Angstrom and 1.568(6) Angstrom, respectively, which are unusually long compared to our earlier measurements of sulfate groups in other V(VI), V(IV), and V(V) compounds.
EPR and UV/VIS spectroscopic investigations of VO2+ complexes and compounds formed in alkali pyrosulfates

The catalytically important molten salt-gas system M2S2O7-M2SO4-V2O5/SO2 (M = Na, K, Rb, Cs) has been investigated by X- and Q-band EPR spectroscopy. In order to obtain information about the V(IV) complex formation in the melts, samples rather dilute in V2O5 were quenched from the molten state at 450-460 degrees C to 0 degrees C. EPR spectra of the quenched samples were recorded on samples with alkali to vanadium (M/V) ratios 40, 80 and 160. The spectra show that two V(IV) complexes dominate in the melt regardless of the type of alkali metal ion. In systems with low activity of sulfate a paramagnetic V(IV) complex with g(parallel) = 1.915, g(perpendicular) = 1.978 and line widths 5-15 Gauss is observed. In systems saturated with M2SO4 the obtained EPR spectra show a paramagnetic complex with the g-tensors g(parallel) = 1.930, g(perpendicular) = 1.980 and line widths 20-60 Gauss. These results fit very well with the assumption that the species VO(SO4)(2)(2-) and SO4(2-) are in equilibrium with VO(SO4)(3)(4-). It has also been shown for the system M2S2O7-M2SO4(sat)-V2O5/SO4(2-) that the line widths in the system increase with higher cation radius, and depend linearly on the volume fraction of the sample occupied by the cation. This indicates that spin-spin relaxation effects are the major contribution to line broadening. Combining information from UV/VIS and EPR spectra shows that the VO2+ unit in the molten salt solvent exhibits electronic properties close to aqueous solutions of V(IV).
Etude thermodynamique des systèmes binaires MHSO₄-NHSO₄ (M,N=Na,K,Rb),

Molten V2O₅/Cs₀.₉K₀.₉Na₀.₂S₂O₇ and V2O₅/K₂S₂O₇ catalysts as electrolytes in an electrocatalytic membrane separation device for SO₂ removal

Molten Salt Electro catalytic Membrane Cells for Flue Gas Cleaning.
SO2 oxidation catalyst model systems characterized by thermal methods
The molten salts M2S2O7 and MHSO4, the binary molten salt Systems M2S2O7-MHSO4 and the molten salt-gas systems M2S2O7 V2O5 and M2S2O7-M2SO4 V2O5 (M = Na, K, Rb, Cs) in O-2, SO2 and At atmospheres have been investigated by thermal methods like calorimetry, Differential Enthalpic Analysis (DEA) and Differential Scanning Calorimetry (DSC). Fundamental thermodynamic data like temperatures and molar heats of solid-solid transition and fusion, phase diagrams, heat capacities of solids and liquids, heat of mixing and heats of complex formation have been obtained and the results are discussed in relation to the mechanism of SO2 oxidation by V2O5 based industrial catalysts.

General information
State: Published
Organisations: Department of Chemistry, Centre National de la Recherche Scientifique, Institut Universitaire des Systèmes Thermiques Industriels
Authors: Hatem, G. (Ekstern), Eriksen, K. M. (Intern), Gaune-Escard, M. (Ekstern), Fehrmann, R. (Intern)
Pages: 323-331
Publication date: 2002
Main Research Area: Technical/natural sciences

Publication information
Journal: TOPICS IN CATALYSIS
Volume: 19
Issue number: 3-4
ISSN (Print): 1022-5528
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.974 SNIP 0.878 CiteScore 2.55
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.945 SNIP 0.789 CiteScore 2.41
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.989 SNIP 0.862 CiteScore 2.29
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.125 SNIP 0.837 CiteScore 2.67
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.196 SNIP 0.851 CiteScore 2.49
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.346 SNIP 0.977 CiteScore 2.89
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.492 SNIP 0.91
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.269 SNIP 0.907
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.225 SNIP 1.015
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.522 SNIP 1.382
Thermodynamic study of the molten salt binary system KHSO4-NaHSO4

The partial molar enthalpies of mixing of NaHSO4 and KHSO4 have been measured at 528 K by dropping samples of pure compounds into molten mixtures of NaHSO4 and KHSO4 in Calvet calorimeter. From these values the molar enthalpy of mixing has been deduced. The same method has been used for the determination of the heat capacity of the two pure compounds in the solid and liquid states. The phase diagram of this system has been confirmed by conductometric and thermal analysis methods. By an optimization method the excess entropy of the liquid mixtures was also calculated.

An ESR Investigation of VO2+ Complexes in Alkali Pyrosulfate

An ESR Investigation of VO2+ Complexes in Alkali Pyrosulfate
Calorimetric and spectroscopic measurements on the SO2 oxidation catalyst model system M2S2O7-M2SO4-V2O5/SO2(g) or Ar(g) (M = K or Cs) at 430-470 degrees C

General information
State: Published
Organisations: Department of Chemistry, Institut Universitaire des Systèmes Thermiques Industriels
Authors: Hatem, G. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 187-193
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Thermochimica Acta
Volume: 379
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ISSN (Print): 0040-6031
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.683 SNIP 1.17 CiteScore 2.4
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.706 SNIP 1.125 CiteScore 2.18
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.916 SNIP 1.489 CiteScore 2.56
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.628 SNIP 1.513 CiteScore 2.33
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.75 SNIP 1.424 CiteScore 2.1
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.588 SNIP 1.286 CiteScore 1.99
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.572 SNIP 1.246
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.778 SNIP 1.289
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.613 SNIP 1.245
Scopus rating (2007): SJR 0.801 SNIP 1.215
Scopus rating (2006): SJR 0.576 SNIP 1.119
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.623 SNIP 1.142
Scopus rating (2004): SJR 0.553 SNIP 1.091
Scopus rating (2003): SJR 0.759 SNIP 0.968
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.708 SNIP 0.965
Conductivity, thermal measurements, X-ray investigations, and phase diagram of the Na2S2O7-K2S2O7 system

General information
State: Published
Organisations: Department of Chemistry, Faculté des Sciences St Jérôme
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Hatem, G. (Ekstern), da Silva, F. (Ekstern), Ståhl, K. (Intern), Fehrmann, R. (Intern)
Pages: 2747-2752
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Physical Chemistry Part B: Condensed Matter, Materials, Surfaces, Interfaces & Biophysical
Volume: 105
Issue number: 14
ISSN (Print): 1520-6106
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 1.348 SNIP 1.02 CiteScore 3.03
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.367 SNIP 1.096 CiteScore 3.25
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.44 SNIP 1.14 CiteScore 3.28
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.494 SNIP 1.2 CiteScore 3.53
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.92 SNIP 1.251 CiteScore 3.66
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.78 SNIP 1.226 CiteScore 3.62
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.849 SNIP 1.214
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.232 SNIP 1.349
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.543 SNIP 1.381
DeNOx and DeSOx Catalysts - Structure, Properties and Deactivation.

General information
State: Published
Organisations: Department of Chemistry
Authors: Rasmussen, S. B. (Intern), Rasmussen, R. C. (Intern), Eriksen, K. M. (Intern), Nielsen, K. (Intern), Winnick, J. (Ekstern), Fehrmann, R. (Intern)
Publication date: 2001
Event: Poster session presented at 6th International Symposium on Molten Salt Chemistry and Technology, Shanghai, China.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 50566
Publication: Research → Poster – Annual report year: 2001

Environmental Catalysis - SO2 Oxidation Catalysts, Structure, Activity and Deactivation

General information
State: Published
Organisations: Department of Chemistry
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Nielsen, K. (Intern), Fehrmann, R. (Intern)
Publication date: 2001
Event: Poster session presented at MSDG Christmas Meeting, London, United Kingdom.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 50567
Publication: Research → Poster – Annual report year: 2001

Oxidation of SO2 from Diluted Gases over Mesoporous V-Cs-SiO2 Catalysts

General information
State: Published
Organisations: Department of Chemistry
Authors: Caraba, R. M. (Ekstern), Alifanti, M. (Ekstern), Pârvulescu, V. (Ekstern), Boghosian, S. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Rh/NORBOS Hydroformylation of SAP Catalysts: Structure and Reactivity

General information
State: Published
Organisations: Department of Chemistry
Authors: Riisager, A. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Publication date: 2001
Event: Poster session presented at 5th European Congress on Catalysis, Limerick, Ireland.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 50565
Publication: Research › Poster – Annual report year: 2001

Røggasrensning-katalysatorer og processer under udvikling.

General information
State: Published
Organisations: Department of Chemistry
Authors: Rasmussen, R. C. (Intern), Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 4
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Dansk Kemi
Volume: 82
Issue number: 11
ISSN (Print): 0011-6335
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Web of Science (2007): Indexed yes
Web of Science (2004): Indexed yes
Original language: English
Source: orbit
Source-ID: 42923
Publication: Communication › Journal article – Annual report year: 2001

SCR by NH3 Over Impregnated Fiber-Glass Catalysts

General information
State: Published
Organisations: Department of Chemistry
Authors: Suchnev, A. P. (Ekstern), Masters, S. G. (Intern), Goncharou, V. B. (Ekstern), Bal'zhinimaev, B. S. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Toktarev, A. V. (Ekstern), Simonova, L. G. (Ekstern), Barelko, V. V. (Ekstern)
Publication date: 2001
Event: Poster session presented at 17th North American Catalysis Society Meeting, Toronto, Canada.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 50560
Publication: Research › Poster – Annual report year: 2001
Structure and Reactivity of Rh/NORBOS Hydroformylation Catalysts

General information
State: Published
Organisations: Department of Chemistry
Authors: Riisager, A. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Publication date: 2001
Event: Poster session presented at 5th European Congress on Catalysis, Limerick, Ireland.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 42881
Publication: Research › Journal article – Annual report year: 2001

Sulfate Solubility and Sulfato Complex Formation of V(V) and V(IV) in Pyrosulfate Melts

General information
State: Published
Organisations: Department of Chemistry, Department of Chemistry
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 161-174
Publication date: 2001
Host publication information
Title of host publication: Proceedings of the International Jondal 2000 Symposium
Main Research Area: Technical/natural sciences
Conference: Jondal Symposium, 01/01/2000
Source: orbit
Source-ID: 276671
Publication: Research › Article in proceedings – Annual report year: 2001

Thermodynamic study of the molten salt binary system KHSO4-NaHSO4

General information
State: Published
Organisations: Department of Chemistry
Authors: Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Hatem, G. (Ekstern)
Publication date: 2001
Event: Poster session presented at Journées de Calorimétrie et d'Analyse Thermique, Hammamet, Tunisia, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 50558
Publication: Research › Peer-review › Poster – Annual report year: 2001

Diagramme de Phases du Systeme Binaire CsHSO4-Cs2S2O7

General information
State: Published
Organisations: Department of Chemistry
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Hatem, G. (Ekstern)
Pages: 42-45
Publication date: 2000
Electrochemical Flue Gas Cleaning Using Molten Pyrosulfate-Based Membranes

General information
State: Published
Organisations: Department of Chemistry
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Winnick, J. (Ekstern)
Pages: 694-697
Publication date: 2000

Host publication information
Title of host publication: Twelfth International Symposium on Molten Salts, ed. P. Trulove et al.
Place of publication: Pennington, N.J., USA
Publisher: Electrochemical Society, Incorporated
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 176727
Publication: Research - peer-review › Article in proceedings – Annual report year: 2000

Environmental Catalysis - Pillared Clay DeNOX Catalysts and Electrocatalytical DeSOX Process

General information
State: Published
Organisations: Department of Chemistry
Authors: Mattsson, R. (Ekstern), Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Winnick, J. (Ekstern), Fehrmann, R. (Intern)
Pages: 341
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Volume: 1
Original language: English
Source: orbit
Source-ID: 176729
Publication: Research - peer-review › Journal article – Annual report year: 2000

On the solid phases in the Na2S2O7 - K2S2O7 phase diagram

General information
State: Published
Organisations: Department of Chemistry, Université de Provence
Authors: Ståhl, K. (Intern), Hatem, G. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: P5
Publication date: 2000
Conference: 31. Danske Krystallografmøde, København, 01/01/2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Unknown title
Original language: English
Source: orbit
Source-ID: 176026
Publication: Research › Journal article – Annual report year: 2000
Electrochemical Flue Gas Cleaning using Molten Pyrosulfate-Based Membranes

General information
State: Published
Organisations: Department of Chemistry, Georgia Institute of Technology
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Winnick, J. (Ekstern)
Pages: 2326
Publication date: 1999
Conference: 196th Meeting of the Electrochemical Society, Honolulu, Hawaii, United States, 17/10/1999 - 17/10/1999
Main Research Area: Technical/natural sciences

Publication information
Journal: Meeting Abstracts for the 1999 Joint International Meeting
Volume: 99-2
Original language: English
Source: orbit
Source-ID: 175049
Publication: Research › Journal article – Annual report year: 1999

EPR Spectroscopic Characterization of DeNox and SO2 Oxidation Catalysts and Model-Systems

General information
State: Published
Organisations: Department of Chemistry, Hempel A/S, B.P. Chemicals SA, Boreskov Institute of Catalysis
Authors: Eriksen, K. M. (Intern), Jensen, C. (Ekstern), Rasmussen, S. B. (Intern), Oehlers, C. (Ekstern), Bal'zhinimaev, B. (Ekstern), Fehrmann, R. (Intern)
Pages: 465
Publication date: 1999
Main Research Area: Technical/natural sciences

Publication information
Journal: Catal. Today
Volume: 54
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 1.312 SNIP 1.363 CiteScore 4.26
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.316 SNIP 1.413 CiteScore 4
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.316 SNIP 1.474 CiteScore 3.72
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.307 SNIP 1.432 CiteScore 3.39
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.475 SNIP 1.437 CiteScore 3.38
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.479 SNIP 1.526 CiteScore 3.34
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.763 SNIP 1.465
Equilibres entre Phases dans les Melanges Rb2S2O7-V2O5

General information
State: Published
Organisations: Department of Chemistry, Université de Provence
Authors: Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 122-125
Publication date: 1999

Host publication information
Title of host publication: Equilibres entre Phases dans les Melanges Rb2S2O7-V2O5
Place of publication: Annecy, France
Publisher: J.L. Jorda, M.Lomello-Tafin and C. Opagiste, Comtes Rendus, LAIMAN and ESIA
Main Research Area: Technical/natural sciences
Conference: Proc. XXV Journées d'Etude des Equilibres entre Phases, Annecy, France, 01/01/1999
Source: orbit
Source-ID: 174123
Publication: Research › Article in proceedings – Annual report year: 1999

High-Temperature Multipenuclear NMR Studies of Vanadia Catalysts for SO2 Oxidation

General information
State: Published
Organisations: Department of Chemistry, Boreskov Institute of Catalysis
Authors: Lapina, O. B. (Ekstern), Terskikh, V. V. (Ekstern), Shubin, A. A. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 255
Publication date: 1999

Main Research Area: Technical/natural sciences

Publication information
Journal: Colloids and Surfaces A: Physicochemical and Engineering Aspects
ISSN (Print): 0927-7757
Ratings:
BFI (2017): BFI-level 1
Progress on the mechanistic understanding of SO2 oxidation catalysts

For almost a century vanadium oxide based catalysts have been the dominant materials in industrial processes for sulfuric acid production. A vast body of information leading to fundamental knowledge on the catalytic process was obtained by Academician [G.K. Boreskov, Catalysis in Sulphuric Acid Production, Goskhimizdat (in Russian), Moscow, 1954, p. 348]. In recent years these catalysts have also been used to clean flue gases and other SO2 containing, industrial off-gases. In spite of the importance and long utilization of these industrial processes, the catalytic active species and the reaction mechanism have been virtually unknown until recent years.

It is now recognized that the working catalyst is well described by the molten salt/gas system M2S2O7-MHSO4-V2O5/SO2-O-2-SO3-H2O-CO2-N-2 (M=Na, K, Cs) at 400-600 degrees C and that vanadium complexes play a key role in the catalytic reaction mechanism.

A multiinstrumental investigation that combine the efforts of four groups from four different countries has been carried out on the model system as well as on working industrial catalysts. Detailed information has been obtained on the complex
and on the redox chemistry of vanadium. Based on this, a deeper understanding of the reaction mechanism has been achieved. (C) 1999 Elsevier Science B.V. All rights reserved.
Redox Equilibria in SO₂ Oxidation Catalysts

General information
State: Published
Organisations: Department of Chemistry, Foundation for Research and Technology-Hellas
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Boghosian, S. (Ekstern), Fehrmann, R. (Intern)
Pages: 204-207
Publication date: 1999
Conference: The International George Papatheodorou Symposium, Patras, Greece, 01/01/1999
Main Research Area: Technical/natural sciences

Publication information
Original language: English
Source: orbit
Source-ID: 175044
Publication: Research - peer-review › Journal article – Annual report year: 1999

Sulfato Complex Formation of V(V) and V(IV) in Pyrosulfate Melts Investigated by Potentiometry and Spectroscopic Methods

General information
State: Published
Organisations: Department of Chemistry
Authors: Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 11282-11289
Publication date: 1999
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Physical Chemistry B
Volume: 103
Issue number: 51
ISSN (Print): 1520-6106
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 1.348 SNIP 1.02 CiteScore 3.03
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.367 SNIP 1.096 CiteScore 3.25
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.44 SNIP 1.14 CiteScore 3.28
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.494 SNIP 1.2 CiteScore 3.53
Thermal and Conductometric Investigations and Phase Diagram of the Rb2S2O7-V2O5 System

General information
State: Published
Organisations: Department of Chemistry, Université de Provence
Authors: Abdoun, F. (Ekstern), Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 3559
Publication date: 1999
Main Research Area: Technical/natural sciences

Publication information
Volume: 103
Original language: English
Source: orbit
Thermal Properties of the Compounds and Binary Systems, M2S2O7, MHSO4, M2S2O7-MHSO4, M2S2O7-V2O5 (M=Na, K, Rb, Cs).

General information
State: Published
Organisations: Department of Chemistry, Université de Provence
Authors: Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 73-77
Publication date: 1999

Host publication information
Title of host publication: Thermal Properties of the Compounds and Binary Systems, M2S2O7, MHSO4, M2S2O7-MHSO4, M2S2O7-V2O5 (M=Na, K, Rb, Cs).
Place of publication: Patras, Greece
Main Research Area: Technical/natural sciences
Conference: Proc. Int. G.N. Papatheodorou Symposium, Patras, Greece, 01/01/1999
Source: orbit
Source-ID: 174125
Publication: Research › Article in proceedings – Annual report year: 1999

Conductivity, NMR Measurements and Phase Diagram of the K2S2O7-V2O5 System

General information
State: Published
Organisations: Department of Chemistry, Hempel A/S, Université de Provence, Boreskov Institute of Catalysis
Authors: Folkmann, G. E. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Gaune-Escard, M. (Ekstern), Hatem, G. (Ekstern), Lapina, O. B. (Ekstern), Terskikh, V. (Ekstern)
Pages: 24-28
Publication date: 1998
Main Research Area: Technical/natural sciences

Publication information
Volume: 102
Original language: English
Source: orbit
Source-ID: 170581
Publication: Research - peer-review › Journal article – Annual report year: 1998

Conductrometric, density and thermal measurements of the M2S2O7 (M = Na, K, Rb, Cs) salts
Physico-chemical properties, such as densities, conductivities, enthalpies of phase transitions and melting points, have been measured and summarised for the alkali pyrosulphates Na2S2O7, K2S2O7, Rb2S2O7, CS2S2O7. The densities of the molten pyrosulphates could be expressed by the linear expression ρ0=A+B(T-Tm) where Tm is the middle temperature of the temperature range measured, i.e. from the melting point and up to 550 degrees C at the maximum.

The specific conductivities of the molten pyrosulphates have been expressed by the equation ρ0=A+B(T-Tm)+C(T-Tm)2+ D(T-Tm)3 in the temperature range from the melting point and up to 500 degrees C at the maximum. From these measurements also the activation energy for the equivalent conductivity of the alkali cations in the melts could be calculated and compared to the analogous alkalisulphates.

By calorimetric investigations of the alkali pyrosulphates the temperatures of fusion, the enthalpies and entropies of fusion and possible solid-solid transitions together with the molar heat capacities of the solid and liquid pyrosulphates at 300-800 K, have been obtained and discussed in relation to the conductrometric measurements and the few related previous investigations. (C) 1998 Elsevier Science B.V.
Diagramme d'Equilibre des Phases du Systeme NaHSO4-Na2S2O7 et Grandeur Thermodynamiques d'Exces

General information
State: Published
Organisations: Department of Chemistry, Université de Provence
Authors: Hatem, G. (Ekstern), Rasmussen, S. B. (Intern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Publication date: 1998

Host publication information
Title of host publication: XXIV JEEP
Place of publication: Nancy, France
Publisher: Universite Henri Poincare
Main Research Area: Technical/natural sciences
Conference: Journees d'Etude des Equilibres Entre Phases, Nancy, France, 01/01/1998
Source-ID: 170634
Publication: Research › Article in proceedings – Annual report year: 1998

Electrochemical and Spectroscopic Study on V(V) and V(IV) Sulfate Complex Formation in Pyrosulfate Melts.

General information
State: Published
Organisations: Department of Chemistry
Authors: Fehrmann, R. (Intern), Eriksen, K. M. (Intern)
Pages: 455-458
Publication date: 1998
Main Research Area: Technical/natural sciences

Publication information
Journal: Molten Salt Forum
Volume: 5-6
Original language: English
Source-ID: 170608
Publication: Research - peer-review › Journal article – Annual report year: 1998

Noter og øvelser til 21390 Datalogi for K-retningen

General information
State: Published
Organisations: Department of Chemistry
Authors: Eriksen, K. M. (Intern)
Number of pages: 88
Publication date: 1998

Publication information
Original language: Danish
Main Research Area: Technical/natural sciences
Source-ID: 170703
Publication: Research - peer-review › Book – Annual report year: 1998

Phase Diagram of the K2S2O7-V2O5- and Rb2S2O7-V2O5 Systems

General information
State: Published
Organisations: Department of Chemistry, Université de Provence
Authors: Abdoun, F. (Ekstern), Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 493-496
Publication date: 1998
Main Research Area: Technical/natural sciences
Phase Diagrams and Physico-Chemical Properties of the M2S2O7-V2O5 Systems (M=Na,K,Rb,Cs)

General information
State: Published
Organisations: Department of Chemistry, Université de Provence
Authors: Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Fehrmann, R. (Intern), Eriksen, K. M. (Intern)
Pages: 483-90
Publication date: 1998

Host publication information
Title of host publication: Molten Salts XI
Place of publication: Pennington, N.J.
Publisher: The Electrochemical Society, Inc.
Main Research Area: Technical/natural sciences
Conference: 193rd Electrochemical Society Meeting, San Diego, California, United States, 03/05/1998 - 03/05/1998
Source: orbit
Source-ID: 170646
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998

Pollution Control by Catalysis: Final Report

General information
State: Published
Organisations: Department of Chemistry
Authors: Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Number of pages: 35
Publication date: 1998

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 170649
Publication: Research - peer-review › Report – Annual report year: 1998

Spectroscopic and Electrochemical Investigations on the M2SO4-V2O5 System (M=Alkali) and Characterization of Compounds

General information
State: Published
Organisations: Department of Chemistry, Georgia Institute of Technology, University of Patras
Authors: Schmidt, D. S. (Ekstern), Wnnick, J. (Ekstern), Boghosian, S. (Ekstern), Fehrmann, R. (Intern), Eriksen, K. M. (Intern)
Pages: 491-498
Publication date: 1998

Host publication information
Title of host publication: Molten Salts XI
Place of publication: Pennington, N.J.
Publisher: The Electrochemical Society, Inc.
Main Research Area: Technical/natural sciences
Conference: 193rd Electrochemical Society Meeting, San Diego, California, United States, 03/05/1998 - 03/05/1998
Source: orbit
Source-ID: 170637
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998
Thermodynamics and Complex Formation in Pyrosulfate Melts

General information
State: Published
Organisations: Department of Chemistry, Université de Provence
Authors: Fehrmann, R. (Intern), Eriksen, K. M. (Intern), Rasmussen, S. B. (Intern), Gaune-Escard, M. (Ekstern), Hatem, G. (Ekstern)
Pages: 63-64
Publication date: 1998

Host publication information
Title of host publication: Proceedings of the International Terje Østvold Symposium
Place of publication: Trondheim, Norway
Publisher: Norwegian University of Science and Technology
Main Research Area: Technical/natural sciences
Conference: International Terje Østvold Symposium, Røros, 01/01/1998
Source: orbit
Source-ID: 170684
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998

Catalytic Activity and Deactivation of SO2 Oxidation Catalysts in Simulated Power Plant Flue Gases

General information
State: Published
Organisations: Department of Chemistry, Imperial College London, CE/HT, Patras, Foundation for Research and Technology-Hellas
Authors: Masters, S. G. (Ekstern), Chrissanthopoulos, A. (Ekstern), Eriksen, K. M. (Intern), Boghosian, S. (Ekstern), Fehrmann, R. (Intern)
Pages: 16-24
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Catalysis
Volume: 166
ISSN (Print): 0021-9517
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 2.441 SNIP 2.154 CiteScore 7.27
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.703 SNIP 2.198 CiteScore 7.23
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.685 SNIP 2.25 CiteScore 6.92
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.56 SNIP 2.108 CiteScore 6.42
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.005 SNIP 2.277 CiteScore 6.17
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.11 SNIP 2.207 CiteScore 6.23
Electrochemical and Spectroscopic Study on V(V) and V(IV) Sulfate Complex Formation in Pyrosulfate Melts

General information
State: Published
Organisations: Department of Chemistry
Authors: Fehrmann, R. (Intern), Eriksen, K. M. (Intern)
Publication date: 1997

Host publication information
Title of host publication: Book of Abstracts
Main Research Area: Technical/natural sciences
Conference: 5th International Symposium on Molten Salt Chemistry and Technology, Dresden, Germany, 24/08/1997 - 24/08/1997
Source: orbit
Source-ID: 168805
Publication: Research › Article in proceedings – Annual report year: 1997

Formation of Oxosulfato Complexes of Vanadium in Pyrosulfate and Sulfate Melts

General information
State: Published
Organisations: Department of Chemistry
Authors: Fehrmann, R. (Intern), Eriksen, K. M. (Intern), Rasmussen, S. B. (Intern)
Publication date: 1997
High Temperature Multinuclear NMR Studies of the Melts M2S2O7-V2O5 (M=K,Na, Cs)

**General information**
State: Published
Organisations: Department of Chemistry, Boreskov Institute of Catalysis
Authors: Lapina, O. B. (Ekstern), Mastikhin, V. (Ekstern), Terskikh, V. V. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Publication date: 1997

High Temperature NMR Studies of the Glass-Crystal Transition in the Cs2S2O7-V2O5 System

**General information**
State: Published
Organisations: Department of Chemistry, Boreskov Institute of Catalysis
Authors: Lapina, O. B. (Ekstern), Terskikh, V. V. (Ekstern), Shubin, A. A. (Ekstern), Mastikhin, V. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 9188-9194
Publication date: 1997
Main Research Area: Technical/natural sciences

Hysteresis Phenomena in Sulfur Dioxide Oxidation over Supported Vanadium Catalysts

**General information**
State: Published
Organisations: Department of Chemistry, Imperial College London
Authors: Masters, S. G. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 227-233
Publication date: 1997
Main Research Area: Technical/natural sciences
Model Systems of SO2 Oxidation Catalysts: Thermal, Spectroscopic and Electrochemical Characterization

General information
State: Published
Organisations: Department of Chemistry, Institut Universitaire des Systémes Thermiques Industriels, Boreskov Institute of Catalysis
Authors: Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Lapina, O. B. (Ekstern), Terskikh, V. V. (Ekstern), Fehrmann, R. (Intern), Eriksen, K. M. (Intern)
Pages: 389-390
Publication date: 1997

Host publication information
Title of host publication: Book of Abstracts
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 168802
Publication: Research › Article in proceedings – Annual report year: 1997

Multinuclear NMR Studies of the Glass - Crystal Transition in V2O5 - Cs2S2O7 System

General information
State: Published
Organisations: Department of Chemistry, Boreskov Institute of Catalysis
Authors: Lapina, O. B. (Ekstern), Terskikh, V. V. (Ekstern), Shubin, A. A. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 22-23
Publication date: 1997

Host publication information
Title of host publication: Book of Abstracts
Main Research Area: Technical/natural sciences
Conference: The Second International Memorial G.K.Boreskov Conference, Novosibirsk, 01/01/1997
Source: orbit
Source-ID: 168800
Publication: Research › Article in proceedings – Annual report year: 1997

Phase Diagram of the K2S2O7-V2O5 and Rb2S2O7-V2O5 Systems

General information
State: Published
Organisations: Department of Chemistry, Institut Universitaire des Systémes Thermiques Industriels
Authors: Abdoun, F. (Ekstern), Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Publication date: 1997

Host publication information
Title of host publication: Book of Abstracts
Main Research Area: Technical/natural sciences
Conference: 5th International Symposium on Molten Salt Chemistry and Technology, Dresden, Germany, 24/08/1997 - 24/08/1997
Source: orbit
Source-ID: 168806
Publication: Research › Article in proceedings – Annual report year: 1997

Phase Transitions in Model Systems for SO2 Oxidation

General information
State: Published
Organisations: Department of Chemistry, Institut Universitaire des Systémes Thermiques Industriels, Boreskov Institute of Catalysis
Progress on the Mechanistic Understanding of SO2 Oxidation Catalysts

General information
State: Published
Organisations: Department of Chemistry, Boreskov Institute of Catalysis, Foundation for Research and Technology-Hellas
Authors: Lapina, O. B. (Ekstern), Bal'zhinimaev, B. S. (Ekstern), Boghosian, S. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Pages: 201-206
Publication date: 1997

Host publication information
Title of host publication: Book of Abstracts
Place of publication: Krakow
Publisher: Institute of Catalysis and Surface Sciences
Main Research Area: Technical/natural sciences
Conference: The Second International Memorial G.K.Boreskov Conference, Novosibirsk, 01/01/1997
Source: orbit
Source-ID: 168803
Publication: Research › Article in proceedings – Annual report year: 1997

Spectroscopic Investigation of SO2 Oxidation Catalysts

General information
State: Published
Organisations: Department of Chemistry, Imperial College London
Authors: Masters, S. G. (Ekstern), Fehrmann, R. (Intern), Eriksen, K. M. (Intern)
Number of pages: 846
Publication date: 1997

Host publication information
Title of host publication: Book of Abstracts
Place of publication: Krakow
Publisher: Institute of Catalysis and Surface Sciences, Polish Academy of Sciences
Main Research Area: Technical/natural sciences
Conference: 3rd European Congress on Catalysis, Krakow, Poland, 31/08/1997 - 31/08/1997
Source: orbit
Source-ID: 168809
Publication: Research › Article in proceedings – Annual report year: 1997

Structure and Properties of SO2 Oxidation Catalysts

General information
State: Published
Organisations: Department of Chemistry, Imperial College London, Foundation for Research and Technology-Hellas
Authors: Fehrmann, R. (Intern), Eriksen, K. M. (Intern), Nielsen, K. (Intern), Masters, S. G. (Ekstern), Boghosian, S. (Ekstern)
Number of pages: 831
Publication date: 1997

Host publication information
Title of host publication: Book of Abstracts Vol. 2
Place of publication: Krakow
Publisher: Institute of Catalysis and Surface Sciences
Main Research Area: Technical/natural sciences
Conference: 3rd European Congress on Catalysis, Krakow, Poland, 31/08/1997 - 31/08/1997
Source: orbit
Source-ID: 168807
Publication: Research › Article in proceedings – Annual report year: 1997
Conduvtivity, NMR, Thermal Measurements and Phase Diagram of the K2S2O7-KHSO4 System.

**General information**
State: Published
Organisations: Department of Chemistry, Université de Provence, Boreskov Institute of Catalysis
Authors: Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Hatem, G. (Ekstern), Gaune-Escard, M. (Ekstern), Lapina, O. B. (Ekstern), Mastikhin, V. M. (Ekstern)
Pages: 10771-10778
Publication date: 1996
Main Research Area: Technical/natural sciences

**Publication information**
Volume: 100
Issue number: 25
Original language: English
Source: orbit
Source-ID: 166476
Publication: Research - peer-review › Journal article – Annual report year: 1996

Crystal Structure and Spectroscopic Characterization of the Mixed Valence V(IV)-V(V) Compound K8(VO)4(SO4)8

**General information**
State: Published
Organisations: Department of Chemistry
Authors: Eriksen, K. M. (Intern), Nielsen, K. (Intern), Fehrmann, R. (Intern)
Pages: 480-484
Publication date: 1996
Main Research Area: Technical/natural sciences

**Publication information**
Volume: 35
Issue number: 2
Original language: English
Source: orbit
Source-ID: 166469
Publication: Research - peer-review › Journal article – Annual report year: 1996

Deactivation, Hysteresis Phenomena and Crystallization Modelling of SO2 Oxidation Catalysts.

**General information**
State: Published
Organisations: Department of Chemistry, BP Chemicals, Institute of Catalysis
Authors: Oehlers, C. (Ekstern), Fehrmann, R. (Intern), Eriksen, K. M. (Intern), Sheinin, D. E. (Ekstern), Balzhinimaev, B. S. (Ekstern), Elokhin, V. I. (Ekstern)
Publication date: 1996

**Host publication information**
Title of host publication: Book of Abstracts
Place of publication: Åbo, Finland
Publisher: The Association of Finnish Chemical Societies
Main Research Area: Technical/natural sciences
Conference: 7th Nordic Symposium on Catalysis, Turku, Finland, 02/06/1996 - 02/06/1996
Source: orbit
Source-ID: 166817
Physico-Chemical and Structural Properties of DeNOx and SO2 Oxidation Catalysts

Commercial catalysts for NOx removal and SO2 oxidation and their model systems have been investigated by spectroscopic, thermal, electrochemical and X-ray methods. Structural information on the vanadium complexes and compounds as well as physico-chemical properties for catalyst model systems have been obtained. The results are discussed in relation to proposed reaction mechanisms.

**General information**
State: Published
Organisations: Department of Chemistry, Institute of Catalysis
Authors: Lapina, O. B. (Ekstern), Mastikhin, V. M. (Ekstern), Shubin, A. (Ekstern), Terskikh, V. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Publication date: 1996

**Host publication information**
Title of host publication: Abstract Book
Main Research Area: Technical/natural sciences
Conference: 28th Congress Ampere, Cantebury, UK, 01/01/1996
Source: orbit
Source-ID: 166830
Publication: Research › Article in proceedings – Annual report year: 1996

The Cs2S2O7-V2O5 Catalyst Model Melt System: 51V and 133Cs NMR Measurements at High Temperature.

**General information**
State: Published
Organisations: Department of Chemistry, Institute of Catalysis
Authors: Lapina, O. B. (Ekstern), Terskikh, V. (Ekstern), Eriksen, K. M. (Intern), Fehrmann, R. (Intern)
Publication date: 1996

**Host publication information**
Title of host publication: Book of Abstracts
Place of publication: Åbo, Finland
Publisher: Association of Finnish Chemical Societies
Main Research Area: Technical/natural sciences
Conference: 7th Nordic Symposium on Catalysis, Turku, Finland, 02/06/1996 - 02/06/1996
Source: orbit
Source-ID: 166808
Publication: Research › Article in proceedings – Annual report year: 1996

ESR-Investigations of Sulfuric Acid Catalyst Deactivation

**General information**
State: Published
Organisations: Department of Chemistry, Energy and Materials
Authors: Eriksen, K. M. (Intern), Fehrmann, R. (Intern), Bjerrum, N. (Intern)
Pages: 263-265
Publication date: 1991
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Journal of Catalysis
Volume: 132
ISSN (Print): 0021-9517
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 2.441 SNIP 2.154 CiteScore 7.27
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.703 SNIP 2.198 CiteScore 7.23
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Deterioration of collagen in parchment

Manuscripts of parchment belong to the most valuable objects of European cultural heritage. With the increasing air pollution the deterioration of parchment is severely accelerated, and within a few decades, an enormous demand for conservation and restauration is expected. A research group with participants from Austria, Belgium, Denmark, Great Britain and France has been established to examine the mechanisms of deterioration. The experimental techniques used in the analyses are X-ray fiber diffraction, electron paramagnetic resonance spectroscopy, hydrothermal stability measurements and amino acid determination.
Electrochemical and Spectroscopic Investigation of Electrochemical Cells and Catalysts
The project is concerned with a study of the different non-aqueous chemical processes using electrochemical (cyclic voltammetry, square-wave voltammetry, chronoamperometry etc.) and spectroscopic (Raman, IR, ESR, NMR etc.) techniques. All the studied processes involve electrochemical steps or electrochemical techniques were used for their study. The project involves investigation of following electrochemical reaction or systems: 1. Electroplating with refractory metals (niobium, tantalum) from molten salts. 2. Phosphoric acid, molten carbonate and solid oxide fuel cells. 3. Development of the active materials for nickel-metal hydride batteries. 4. Study of the mechanism of the catalytic SO2 oxidation using electrochemical techniques.

Structural studies of inorganic materials
Crystal structures, i.e. the atomic arrangements in crystalline materials, form the basis for our understanding and development of inorganic materials. In this project crystal structures are determined and studied by means of single-crystal and powder diffraction methods using conventional and synchrotron X-rays, as well as neutron sources. It is also the aim of this project to explore the possibilities and develop crystallography as a toll for structural studies. The crystallographic
studies are complemented by electron microscopy, spectroscopy, thermal, electro-chemical and kinetic methods. Among the materials studied are vanadium containing catalysts, where the catalytic properties are relying on the variability of the oxidation state of vanadium, which in turn depends on the structure hosting the vanadium ions. Another group of materials studied is optically and electro-optically active ceramics, whose polar properties can be directly related to their atomic arrangements. In yet another group of materials, minerals, new structures are determined and structurally related to known materials, and the stability fields and structural variations of solid solutions are explored.

Department of Chemistry
Indoor Environment

Department of Mechanical Engineering

Department of Physics

University of Milan

Lund University

Chalmers University of Technology

University of Copenhagen

Brookhaven National Laboratory

Period: 01/09/1995 → …

Number of participants: 10

Project participant:

Nielsen, Kurt (Intern)

Artioli, Gilberto (Ekstern)

Hansen, Staffan (Ekstern)

Albertsson, Jørgen (Ekstern)

Johnsen, Ole (Ekstern)

Hansen, Jonathan (Ekstern)

Fehrmann, Rasmus (Intern)

Eriksen, Kim Michael (Intern)

Jiang, Jianzhong (Intern)

Project Manager, organisational:

Ståhl, Kenny (Intern)

Financing sources

Source: Unknown

Name of research programme: Ukendt

Amount: 15,000.00 Danish Kroner

Project

Inorganic Catalysis

Multidisciplinary investigations of structure and catalytic activity of inorganic catalysts and model systems. In collaboration with ICAT.

Department of Chemistry

Department of Physics

Department of Chemical and Biochemical Engineering

University of Patras

Université de Provence

Institute of Catalysis

Georgia Institute of Technology

B.P. Chemicals SA

Haldor Topsoe AS

University of Copenhagen
Period: 01/01/1993 → …
Number of participants: 25

Project participant:
- Eriksen, Kim Michael (Intern)
- Berg, Rolf W. (Intern)
- Holten, Bodil Fliis (Intern)
- Nielsen, Kurt (Intern)
- Rasmussen, Søren Birk (Intern)
- Mattsson, Rikke Christina (Intern)
- Barfod, Rasmus (Intern)
- Riisager, Anders (Intern)
- Boghosian, Soghomon (Ekstern)
- Hatem, Gerard (Ekstern)
- Gaune-Escard, Marcelle (Ekstern)
- Balzhinimaev, Bair (Ekstern)
- Lapina, Olga (Ekstern)
- Winnick, Jack (Ekstern)
- Oehlers, Cord (Ekstern)
- Schoubye, Peter (Ekstern)
- Topsøe, Nan Yu (Ekstern)
- Hyltoft, Jens (Ekstern)
- Thorhauge, Max (Ekstern)
- Gabrielson, Per (Ekstern)
- Teunissen, Herman (Ekstern)
- Møller, Preben Juul (Ekstern)
- Chorkendorff, Ib (Intern)
- Hjortkjær, Jes (Intern)

Project Manager, organisational:
- Fehrmann, Rasmus (Intern)

Financing sources
Source: Unknown
Name of research programme: Ubekndt
Amount: 345,000.00 Danish Kroner
Source: Unknown
Name of research programme: Ubekndt
Amount: 28,000.00 Danish Kroner
Source: Unknown
Name of research programme: Ubekndt
Amount: 6,100,000.00 Danish Kroner
Source: Unknown
Name of research programme: Ubekndt
Amount: 185,000.00 Danish Kroner
Project