

Publikationsliste - List of Publications

Philipp Gütlich

- (1) **Die Reaktion von Aluminiumchlorid mit Chlorwasserstoff in 1,1,2,2-Tetrachloräthan und in Nitromethan**
Lieser, K.H.; Gütlich, P.
Ber. Bunsenges. Phys. Chem. **1963**, 67, 445
- (2) **Der Einfluß der Vorbehandlung auf den heterogenen Isotopenaustausch an der Oberfläche von Ionenkristallen und die Bildung von Kationenkörpern und Anionenkörpern**
Gütlich, P.; Lieser, K.H.
Z. Phys. Chem. (Neue Folge) **1965**, 46, 3/4, 216
- (3) **Die spezifische Oberfläche von frisch gefälltem Bariumsulfat**
Gütlich, P.; Lieser, K.H.
Z. Phys. Chem. (Neue Folge) **1965**, 46, 5/6, 257
- (4) **Die Geschwindigkeit des heterogenen Isotopenaustausches an der Oberfläche von Ionenkristallen**
Lieser, K.H.; Gütlich, P.; Rosenbaum, I.
Radiochim. Acta **1965**, 4, 216
- (5) **Die Temperaturabhängigkeit des heterogenen Isotopenaustausches an der Oberfläche von Ionenkristallen**
Lieser, K.H.; Gütlich, P.; Rosenbaum, I.
Radiochim. Acta **1966**, 5, 38
- (6) **Kinetics and Mechanism of Heterogeneous Exchange Reactions on the Surface of Ionic Crystals**
K.H. Lieser, K.H.; Gütlich, P.; Rosenbaum, I.
Proc. Int. Atomic Energy Agency, Symp. "Exchange Reactions", Brookhaven **1965**

- (7) **Exchange Equilibria on the Surface of Ionic Crystals**
Lieser, K.H.; Gütlich, P.; Hild, W.; Hecker, A.; Rosenbaum, I.
Proc. Int. Atomic Energy Agency, Symp. "Exchange Reactions", Brookhaven **1965**
- (8) **Hot-Atom Reaction Products in Crystals of Hexa- and Trivalent Chromium Compounds**
Gütlich, P.; Harbottle, G.
Radiochim. Acta **1966**, 5, 70
- (9) **A Study of ^{51}Cr Retention and Annealing in Single Crystals of K_2CrO_4 Irradiated at Low Neutron Doses**
Gütlich, P.; Harbottle, G.
Radiochim. Acta **1967**, 8, 30
- (10) **Beiträge zur Anwendung des Mößbauer-Effekts in der Chemie**
Gütlich, P.
Habilitationsschrift, TH Darmstadt **1968**
- (11) **Mößbauer-Effekt-Untersuchungen an Gamma-bestrahlten Eisenkomplexen. I. Oktaedrische High-Spin-Komplexe**
Gütlich, P.; Odar, S; Fritzsimmmons, B.W.; Erickson, N.E.
Radiochim. Acta **1968**, 10, 147
- (12) **^{61}Ni Mössbauer Spectra of Some Complexes of Ni(II)**
Erich, U.; Fröhlich, K.; Gütlich, P.; Webb, G.
Inorg. Nucl. Chem. Lett. **1969**, 5, 855
- (13) **Anwendung des Mößbauer-Effekts zur Untersuchung der Festkörperreaktion zwischen Eisen(II)-sulfat und Kaliumcyanid**
Gütlich, P.; Hasselbach, K.M.
Angew. Chem. **1969**, 81, 627

- (14) **Radiochemische Untersuchungen des Koordinationszustandes von Eisen im zweikernigen Eisen(III)-phenanthrolin-Komplexion**
Gütlich, P.; Fritzsimmmons, B.W.
Angew. Chem. **1969**, 81, 788
- (15) **Beobachtung von anomalen Spinzuständen von Eisen(II) in $[\text{Fe}(\text{phen})_3](\text{ClO}_4)_2 \cdot 2\text{H}_2\text{O}$ mit Hilfe des Mößbauer-Effekts**
Ensling, J.; Fritzsimmmons, B.W.; Gütlich, P.; Hasselbach, K.M.
Angew. Chem. **1970**, 82 /15, 638
- (16) **Polymere Chrom(III)-Komplexe als Folge der Neutronenbestrahlung von kristallinem Kaliumchromat.**
I. Trennungsmethode und einige chemische Eigenschaften der mehr-kernigen Rückstoßprodukte
Fröhlich, K.; Gütlich, P.; Odar, S.
J. Inorg. Nucl. Chem. **1971**, 33, 307
- (17) **Polymere Chrom(III)-Komplexe als Folge der Neutronenbestrahlung von kristallinem Kaliumchromat.**
II. Einfluß der Bestrahlungsdauer auf die spezifische Aktivität und Diskussion der Bildungsweise der ein- und mehrkernigen Rückstoßprodukte
Fröhlich, K.; Gütlich, P.; Odar, S.
J. Inorg. Chem. **1971**, 33, 621
- (18) **Mößbauer-Messungen an Krypton-83 in einigen ^{83}RbX -Verbindungen (X = F, Cl, Br, OH)**
Gütlich, P.; Odar, S.; Walcher, D.
Z. Naturforschung **1970**, 25b /10, 1184
- (19) **Physikalische Methoden in der Chemie: Mößbauer-Spektroskopie.**
I. Grundlagen
Gütlich, P.
Chemie in unserer Zeit **1970**, 4 /5, 133

(20) Physikalische Methoden in der Chemie: Mößbauer-Spektroskopie.

II. Anwendungen

Gütlich, P.

Chemie in unserer Zeit **1971**, 5 /5, 131

(21) Zur Anwendung des Mößbauer-Effekts in der analytischen Chemie

Gütlich, P.

Transacta des VI. Int. Symp. für Mikrochemie in Graz, Mikrochim. Acta **1970**, Vol. E, 89 (Verlag Wiener Medizin. Akad.)

(22) The Mössbauer Effect and Chemistry: Part V: Triorganotin Penta-Coordinate Complexes

Ensling, J.; Fritzsimmmons, B.W.; Gütlich, P.; Hasselbach, K.M.; Owusu, A.

J. Chem. Soc. **1971**, A, 1940

(23) Der Mößbauer-Effekt und seine Anwendung auf chemisch-technische Probleme

Gütlich, P.; Prange, H.

Chemie-Ingenieur-Technik **1971**, 43 /19, 1049

(24) Die Mößbauer-Spektroskopie und ihre Anwendung in der Chemie

Gütlich, P.

Broschüre (57 S.) zu Gastvorlesungen an der ETH Zürich, Juni 1971

(25) Mößbauer-Spektroskopie

Gütlich, P.; Prange, H.

Broschüre (105 S.) zum GDCh-Fortbildungskurs, Oktober 1971

(26) Mößbauer-Messungen an Neptunium(VII)-Verbindungen

Fröhlich, K.; Gütlich, P.; Keller, C.

Angew. Chem. **1972**, 84, 26

(27) Mössbauer Effect Studies on Some Heptavalent Neptunium Compounds

Fröhlich, K.; Gütlich, P.; Keller, C.
J. Chem. Soc. A **1972**, 971

(28) The Problem of Spin Triplet States of Iron(II) in ^{57}Fe Mössbauer Emission Spectra

König, E.; Gütlich, P.; Link, R.
Chem. Phys. Lett. **1972**, 15, 302

(29) High Spin $\leftrightarrow$ Low Spin Transitions in Substituted Phenanthroline Complexes of Iron(II)

Fleisch, J.; Gütlich, P.; Hasselbach, K.M.; Müller, W.
J. Physique Coll. **1974**, C6 35, 659, Supplement au No. 12

(30) Beobachtung des Ligandenaustausches im System $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}/\text{KCN}$ mit Hilfe der Mößbauer-Spektroskopie

Gütlich, P.; Hasselbach, K.M.
Ber. Bunsenges. Phys. Chem. **1974**, 78 /10, 1017

(31) ^{57}Fe - und ^{119}Sn -Mößbauer-Untersuchungen an Tetracarbonyl-(organoelement IVa-phosphin)eisen(o)-Komplexen

Ensling, J.; Gütlich, P.; Rösch, L.
Z. Naturforschung **1975**, 30b, 850

(32) Mössbauer Spectroscopy in Chemistry Topics

Gütlich, P.
in *Applied Physics* **1975**,
ed. Gonser, U.; Springer Verlag Berlin, Heidelberg, New York

(33) Mössbauer Effect Study of the Electronic Ground State of Iron(II) in Tris(2-chlorophenanthroline)iron(II) Perchlorate

Fleisch, J.; Gütlich, P.; Hasselbach, K.M.
Inorg. Chim. Acta **1976**, 17, 51

- (34) **New Aspects on the High Spin $\leftrightarrow$ Low Spin Transition in Tris(2-methyl-1,10-phenanthroline)iron(II) Perchlorate**
 Fleisch, J.; Gütllich, P.; Hasselbach, K.M.; Müller, W.
Inorg. Chem. **1976**, *15*, 958
- (35) **^{197}Au Mössbauer Effect Studies on Ternary Alloys of Gold with Main-Group Metals**
 Gütllich, P.; Odar, S.; Weiss, A.
J. Phys. Chem. Solids **1976**, *37*, 1011
- (36) **Anomalous Spin States of Iron(II) in ^{57}Fe Mössbauer Emission Spectra of $[\text{}^{57}\text{Co}(\text{phen})_2(\text{NCS})_2]$ and $[\text{}^{57}\text{Co}(\text{bipy})_2(\text{NCS})_2]$**
 Ensling, J.; Gütllich, P.; Hasselbach, K.M.
Chem. Phys. Lett. **1976**, *42*, 232
- (37) **Mössbauer Effect Study on Low Spin $^1\text{A}_1 \leftrightarrow$ High Spin $^5\text{T}_2$ Transition in $[\text{Fe}(\text{2-pic})_3]\text{Cl}_2$.
 I. Dilution Effect in $[\text{Fe}_x\text{Zn}_{1-x}(\text{2-pic})_3]\text{Cl}_2 \cdot \text{C}_2\text{H}_5\text{OH}$**
 Sorai, M.; Ensling, J.; Gütllich, P.
Chem. Phys. **1976**, *18*, 199
- (38) **Mössbauer Effect Study on Low Spin $^1\text{A}_1 \leftrightarrow$ High Spin $^5\text{T}_2$ Transition in $[\text{Fe}(\text{2-pic})_3]\text{Cl}_2$.
 I. Influence of Non-Coordinate Solvent Molecule in $[\text{Fe}(\text{2-pic})_3]\text{Cl}_2 \cdot \text{X}$ ($\text{X} = \text{C}_2\text{H}_5\text{OH}, \text{CH}_3\text{OH}, \text{H}_2\text{O}$ and $2\text{H}_2\text{O}$)**
 Sorai, M.; Ensling, J.; Gütllich, P.
Chem. Phys. **1977**, *20*, 197
- (39) **Anomalous Spin State of Iron(II) in ^{57}Fe Mössbauer Emission Spectra of ^{57}Co -labeled Tris(2-methylphenanthroline)cobalt(II) Perchlorate**
 Fleisch, J.; Gütllich, P.
Chem. Phys. Lett. **1976**, *42*, 237
- (40) **Thermally Induced Spin Transition in Tris(2-methoxy-1.10-**

phenanthroline)iron(II) Perchlorate. Variable-Temperature Mössbauer, Magnetic Susceptibility, and Far-Infrared Measurements

Fleisch, J.; Gütllich, P.; Hasselbach, K.M.

Inorg. Chem. **1977**, *16*, 1979

(41) Observation of Anomalous Spin States of Iron(II) in Strong-Field Diimine Complexes by ^{57}Fe Mössbauer Emission Spectroscopy

Enslin, J.; Fleisch, J.; Gütllich, P.

Chem. Phys. Lett. **1977**, *45*, 22

(42) Variable-Temperature ^{57}Fe Mössbauer Emission Studies on Tris(2-X-1.10-phenanthroline) ^{57}Co (II) Perchlorate (X = Cl, CH₃O)

Fleisch, J.; Gütllich, P.

Chem. Phys. Lett. **1977**, *45*, 29

(43) Time and Temperature Dependence of After-Effects in [$^{57}\text{Co}(\text{phen})_3](\text{ClO}_4)_2 \cdot 2\text{H}_2\text{O}$ from Time-Differential Mössbauer Emission Spectroscopy

Grimm, R.; Gütllich, P.; Kankeleit, E.; Link, R.

J. Chem. Phys. **1977**, *67* /12, 5491

(44) On-Line Mössbauer Measurements at Low Temperatures of $^{83\text{m}}\text{Kr}$ Implanted into Al

Gütllich, P.; Link, R.; Fritsch, T.; Wolf, G.K.

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(45) Mössbauer Spectroscopy and Transition-Metal Chemistry

Gütllich, P.; Link, R.; Trautwein, A.

Inorganic Chemistry Concepts 3 **1978**, Springer-Verlag, Heidelberg

(46) Mössbauer Effect Study of the Thermally Induced Spin Transition in Tris(2-picolylamine)iron(II) Chloride. Dilution Effect in Mixed Crystals of [$\text{Fe}_x\text{Zn}_{1-x}(\text{2-pic})_3$] $\text{Cl}_2 \cdot \text{C}_2\text{H}_5\text{OH}$ (x = 0.15, 0.029, 0.0009)

Gütllich, P.; Link, R.; Steinhäuser, H.G.

Inorg. Chem. **1978**, *17*, 2509

- (47) **Corrosion Study of Austenitic and Martensitic Steels under Boiler Conditions by Means of ^{57}Fe Conversion Electron Mössbauer Spectroscopy**

Ensling, J.; Fleisch, J.; Grimm, R.; Grübler, J.; Gütlich, P.

Corr. Sci. **1978**, *18*, 797

- (48) **Anwendung der Mößbauer-Spektroskopie auf die Untersuchung von Deckschichten in Naturumlaufkesseln Applications of Mössbauer Spectroscopy to the Study of Surface Layers in Natural Convection Boilers**

Ensling, J.; Gütlich, P.; Rieß, R.

Werkstoffe und Korrosion **1978**, *29*, 250

- (49) **Interpretation of High Spin-Low Spin Transition in Iron(II) Complexes. I. A Phenomenological Thermodynamic Model**

Gütlich, P.; Köppen, H.; Link, R.; Steinhäuser, H.G.

J. Chem. Phys. **1979** *70*, 3977

- (50) **Mössbauer Spectroscopic Studies of Spin Crossover Compounds**

Gütlich, P.

J. Physique Coll. **1979**, *C2 40*, 378

- (51) **Determination of the Aluminum Content in Natural and Synthetic Alumo-Goethites Using Mössbauer Spectroscopy**

Fleisch, J.; Grimm, R.; Grübler, J.; Gütlich, P.

J. Physique Coll. **1980**, *C1 41*, 169

- (52) **^{61}Ni Mössbauer Effect Studies of the Ferrimagnetic Spinel NiCr_2O_4 in an Applied Magnetic Field**

Gütlich, P.; Rummel, H.; Spiering, H.

J. Physique Coll. **1980**, *C1 41*, 185

- (53) **Investigation of the Spin Crossover in $[\text{Fe}_x\text{M}_{1-x}(\text{phen})_2(\text{NCS})_2]$ ($\text{M} = \text{Mn}, \text{Co}, \text{Ni}$)**

Ganguli, P.; Gülich, P.

J. Physique Coll. C1 **1980**, 41, 313

(54) Deuterium Isotope Effect on the High Spin $\leftrightarrow$ Low Spin Transition in Deuterated Solvates of Tris(2-picolylamine)iron(II) Chloride

Gülich, P.; Köppen, H.; Steinhäuser, H.G.

Chem. Phys. Lett. **1980**, 74 /3, 475

(55) Spin Crossover in Iron Complexes

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(56) ^{57}Fe Mössbauer Emission Spectroscopy of an Iron(II) Complex with Temperature Dependent Spin State

Gülich, P.; Köppen, H.

J. Physique Coll. C1 **1980**, 41, 311

(57) ^{57}Fe Mössbauer Emission Spectroscopy of an Iron(II) Complex with Temperature Dependent Spin Transition

Fleisch, J.; Gülich, P.; Köppen, H.

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(59) Mössbauer Effect Study of the Electronic Ground State of Iron(II) in $[\text{}^{57}\text{Fe}_x\text{M}_{1-x}(\text{bipy})_3](\text{ClO}_4)_2$ (M = Mn, Ni, Zn) and $[\text{}^{57}\text{Fe}_x\text{M}_{1-x}(\text{phen})_3](\text{ClO}_4)_2$ (M = Ni, Zn) at Very Low Iron Concentrations ($x < 0.005$)

Bode, K.; Gülich, P.; Köppen, H.

Inorg. Chim. Acta **1980**, 42, 281

- (60) **Temperature Dependent $^5T_2(O_h) \leftrightarrow ^1A_1(O_h)$ Spin Equilibrium in a Six-Coordinate Cobalt(III) Complex. Investigation by ^{31}P NMR in Solution**

Gütlich, P.; McGarvey, B.R.; Kläui, W.

Inorg. Chem. **1980**, 19, 3704

- (61) **Electron Spin Resonance and Mössbauer Study of the High Spin $\leftrightarrow$ Low Spin Transition in $[Fe(phen)_2(NCS)_2]$ and $[Fe(pic)_3]Cl_2 \cdot EtOH$**

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Inorg. Chem. **1981**, 20, 204

- (62) **Further Studies on the Spin Crossover Phenomenon in Di-isothiocyanatobis(1,10-phenanthroline)iron(II)**

Ganguli, P.; Gütlich, P.; Müller, E.W.; Irler, W.

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- (63) **Temperature Dependence of the Lifetimes of the Ligand Field States of Tris(1,10-phenanthroline)iron(II)**

Bergkamp, M.A.; Brunschwig, B.S.; Gütlich, P.; Netzel, T.L.; Sutin, N.

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- (64) **Phasenumwandlungen in Korrosionsschichten auf Eisen: Mößbauerspektroskopische Untersuchungen**

Meisel, W.; Gütlich, P.

Werkstoffe und Korrosion **1981**, 32, 296

- (65) **Mößbauer- und ESCA-Untersuchungen zur Bildung oxidischer Eisenphasen in wäßrigen Medien unter der Einwirkung organischer Korrosionsinhibitoren**

Gütlich, P.; Meisel, W.; Mohs, E.

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(66) Some Recent Technical Applications of Mössbauer Spectroscopy

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(67) ^{61}Ni Mössbauer Measurements of Nickel Microprecipitates Produced in LaNi_5 by Cyclic Hydrogen Absorption and Desorption

Rummel, H.; Cohen, R.L.; Gütlich, P.; West, K.W.

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(68) Gemischtvalente Bromoaurate(I,III) und ihre Mößbauer-Spektren

Gütlich, P.; Lehnis, B.; Römhild, K.; Strähle, J.

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(69) The Effect of the Lattice Expansion on High Spin $\leftrightarrow$ Low Spin Transitions

Spiering, H.; Meissner, E.; Köppen, H.; Müller, E.W.; Gütlich, P.

Chem. Phys. **1982**, 68, 65

(70) Effect of Metal Dilution on the Spin Crossover Behavior in

$[\text{Fe}_x\text{M}_{1-x}(\text{phen})_2(\text{NCS})_2]$ (M = Mn, Co, Ni, Zn)

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(71) Unusual Spin Transition Anomaly in the Crossover System $[\text{Fe}(\text{2-pic})_3]\text{Cl}_2 \cdot \text{EtOH}$

Köppen, H.; Müller, E.W.; Köhler, C.P.; Spiering, H.; Meissner, E.; Gütlich, P.

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(72) Mößbauerspektroskopische Phasenanalyse eisenhaltiger Oberflächenschichten

Meisel, W.; Gütlich, P.

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(73) Spin Transition in $[\text{Fe}(\text{phen})_2(\text{NCS})_2]$ and $[\text{Fe}(\text{bipy})_2(\text{NCS})_2]$: Hysteresis and

Effect of Crystal Quality

Müller, E.W.; Spiering, H.; Gütlich, P.

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(74) The Effect of Low Pressure on a High Spin $\leftrightarrow$ Low Spin Transition

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(75) Cooperative Pseudo-Jahn Teller Effect of the $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$ Complexes in the Sulfate Heptahydrates

Siebke, W.; Spiering, H.; Meissner, E.

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(76) An ESCA and Mössbauer Study of the Oxide Layer Formed on Steel in Water Containing Chromate and Chloride Ions

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(77) On the Participation of Domains in the High Spin ($^5\text{T}_2$) $\leftrightarrow$ Low Spin ($^1\text{A}_1$) Transition in Dithiocyanatobis(2,2'-di-2-thiazoline)iron(II)

Müller, E.W.; Spiering, H.; Gütlich, P.

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(78) Lifetimes of the Ligand-to-Metal Charge Transfer Excited States of Iron(III)- and Osmium(III)polypyridine Complexes. Effects of Isotopic Substitution and Temperature

Bergkamp, M.A.; Gütlich, P.; Netzel, T.L.; Sutin, N.

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- (80) **The Effect of a Magnetic Field on the High Spin $\leftrightarrow$ Low Spin Transition in $[\text{Fe}(\text{phen})_2(\text{NCS})_2]$**
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- (81) **The Influence of Phosphoric Acid on Steel and on its Corrosion Products: A Mössbauer Spectroscopic Approach**
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- (82) **Exchange Coupling in $\text{Tris}(\mu\text{-hydroxo})\text{bis}[(1,4,7\text{-trimethyl-}1,4,7\text{-triazacyclononane})\text{chromium(III)}]$ Triperchlorate Trihydrate**
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- (83) **High Spin $\leftrightarrow$ Low Spin Transitions in Hexacoordinate Complexes of Iron(II) with Monodentate 1-Alkyltetrazole Ligands: A Variable-Temperature Mössbauer, Magnetic Susceptibility, and Far-Infrared Study**
Müller, E.W.; Ensling, J.; Spiering, H.; Gütlich, P.
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- (84) **Light-Induced Excited Spin State Trapping in a Transition-Metal Complex: The Hexa-1-Propyltetrazole-Iron(II) Tetrafluoroborate Spin Crossover System**
Decurtins, S.; Gütlich, P.; Köhler, C.P.; Spiering, H.; Hauser, A.
Chem. Phys. Lett. **1984**, 105 /1, 1
- (85) **Effect of Crystal Quality on the Spin Transition Behavior in a Cobalt(II) Complex**
Müller, E.W.; Spiering, H.; Gütlich, P.
Inorg. Chem. **1984**, 23, 119
- (86) **Synthesis, Structure, and Magnetic Properties of Catena-(μ -Oxo) (hemiporphyrinato- π)iron(IV), the First Polymeric μ -Oxo-Bridged Complex of Iron**

Hiller, H.; Strähle, J.; Datz, A.; Hanack, M.; Hatfield, H.E.; terHaar, L.W.; Gütlich, P.
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(87) The Metal Dilution Effect on the High Spin (5T_2) $\leftrightarrow$ Low Spin (1A_1) Transition in $[Fe_xCo_{1-x}(2-pic)_3]Cl_2 \cdot EtOH$

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(88) Hot Atom Chemistry in Relation to Mössbauer Emission Spectroscopy

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(89) ^{61}Ni Mössbauer Spectroscopy of Magnetic Hyperfine Interaction in Nickel Spinel

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(93) Spin Transition in Iron Compounds

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(94) New Examples of Light-Induced Excited Spin State Trapping (LIESST) in Iron(II) Spin Crossover Systems

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(96) Mössbauer Spectroscopic Evidence of a Crystal Field Effect on Transient Electronic States of $^{57}\text{Fe}^{3+}$ After the EC Decay of ^{57}Co

Doerfler, R.; Gruber, W.; Gütlich, P.; Hasselbach, K.M.; Leupold, O.; Molnar, B.; Nagy, D.L.; Ritter, G.; Spiering, H.; Tuczek, F.

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