

## Index

- a**  
Alternating chain model 123, 203–206  
Anthracenetetrone 240  
Azido 200, 203–205, 217–218
- b**  
Bis(dithiolato)metallates 131, 143–146, 240–241, 243, 244–246  
Bis(dithiolato)metallates, *see also* Metalloccenium bis(dithiolato)metallates  
Bis(heptamethylindenyl)iron(II) 250
- c**  
Canted antiferromagnetism 79–81  
Chiral magnets 41–68  
[Co(C<sub>5</sub>Me<sub>5</sub>)<sub>2</sub>][TCNE] 232  
Cobalt hydroxide carboxylates 263, 354, 356–361  
Cobalt imidazolates 272, 273  
CoHMPA-B bis(2-hydroxy-2-methylpropanimido)benzene 247  
Conductivity 105–155  
Copper hydroxide layers 266–269, 352–355  
[Cr(C<sub>5</sub>Me<sub>5</sub>)<sub>2</sub>][TCNE] 232, 242  
Cr(NCS)<sub>4</sub> 126–130, 131  
Critical constants 77, 82, 347–375  
Cu Phthalocyanine 110–111
- d**  
Dawson-Wells ions, *see* Polyoxometallates  
Decaethylferrocene 249  
Dicyanamide, *see* M[N(CN)<sub>2</sub>]<sub>2</sub>  
Dicyanofumarate salts 233–235, 242  
Dicyanomethylene 248  
2,3-Dicyano-1,4-naphthoquinones 236–238, 243  
2,5-Dichloro-3,6-dihydroxy-1,4-benzoquinone 248–249  
2,3-Dihalo-5,6-dicyanoquinone 235, 243  
2,5-Dimethyl-N,N'-dicyanoquinodiamines 239–240, 242  
Dipolar-dipolar interactions 277, 352, 362  
Dzyaloshinsky-Moriya interaction 42
- e**  
Electrochromism 337  
Exchange between localized moments and conduction electrons, *see* RKKY model  
Exchange models 294–300, 306–322
- f**  
Faraday effect 44, 62–63  
Fe clusters 209, 219–220  
[Fe(C<sub>5</sub>Me<sub>5</sub>)<sub>2</sub>][TCNE] 225, 226–227, 230–233, 242, 249, 250  
Hysteresis 231  
Mössbauer 251–252  
Specific Heat 230, 253–254  
Structure 227, 251–256  
[Fe(C<sub>5</sub>Me<sub>5</sub>)<sub>2</sub>][TCNQ] 225, 228–229, 238–239, 242, 247, 250  
Structure 228–229  
Ferrimagnetic 19  
Ferromagnetic 6, 8, 23, 27, 76  
Ferromagnetism and superconductivity 107, 153  
Fisher chain 194, 200, 202, 209–211  
Fisher model 115

- g**  
 Gd(III) and a nitronyl nitroxide radical 165–169, 170–173, 174–177, 180–184  
 Gd(III) 161, 164–169  
 Gd(III)-Cu(II) 164–165, 170
- h**  
 Haldane chain 368–375  
 Heisenberg Model 78, 196, 197, 200, 253, 348, 351, 358, 361, 363, 366, 368, 370  
 Hexacyanobutadiene 242, 247–248  
 Hexacyanometallates 53–68, 105, 124–125, 127  
 Hexacyanometallates, *see also* Prussian blue  
 Hexahalohalometallates 122–124  
 Hexathiocyanatometallates 124–128
- i**  
 Ising model 189, 196, 253, 351
- k**  
 Kagomé lattice 72, 267, 268, 269  
 Keggins ions, *see* Polyoxometallates
- l**  
 Ladder-type structure 178  
 Lanthanides 161–185  
 Light-induced magnetization 338–339
- m**  
 $M(CN)_6]^{n-}$  *see* Hexacyanometallates and Prussian blue  
 $M(NCS)_6]^{3-}$  *see* Hexathiocyanatometallates  
 $M(ox)_3]^{3-}$  *see* Tris(oxalato)metallate  
 $M[C(CN)_3]_2$ , 71–73, 76, 85, 86  
 $M[N(CN)_2]_2$ , 71–100  
   magnetic behavior 76–82, 84, 94–98  
   structure 73–76, 79, 82–84, 87–93, 96, 99  
 Magnetic semiconductor 121, 122  
 Magneto-chiral optical effects 48–49  
 Magneto-optical effects 43–48  
 Magnetostriction 153  
 Magnets and conductivity 105–155  
 Magnets, chiral, *see* Chiral magnets,  
 Magnets, chiral, *see* Nitroxide chiral magnets,  
 Manganese formate 269–271  
 McConnell model 3, 20, 25, 232–239, 250, 254–255  
 Mean field approximation 201  
 Mechanism for magnetic ordering 81, 82  
 Metallocene 1–38  
   magnetic properties 4–37  
   structure 4–37  
   magnets 223–227  
 Metallocenium bis(dithiolato)metallates 1–38  
 Metamagnetic 7, 8, 10, 11, 13, 14, 20, 30, 34, 35, 228–229, 236, 238, 241, 242, 243, 244  
 $[Mn(C_5Me_5)_2][TCNE]$  232–242  
 $[Mn(C_5Me_5)_2][TCNQ]$  227, 242  
 $Mn(hfac)_2$  49–53  
 Molecular orbital analysis 300–302, 310–319  
 Monte Carlo Simulation of Magnetic Properties 189–220, 374  
 Mössbauer spectroscopy 251–252  
 Muon spin relaxation 251  
 $[MX_4]^{2-}$  *see* Tetrahalometallates  
 $[MX_6]^{3-}$  *see* Hexahalohalometallates
- n**  
 $N_3^-$  *see* Azido  
 Nanoparticles 339–340  
 Nanoporous magnetic materials 261–280  
 Neutron diffraction 78, 94  
 $Ni(C_2H_8N_2)_2NO_2ClO_4$  369, 373–374  
 Nickel carboxylate 263, 265, 366–369  
 $NiCp^*_2][TCNE]$  232, 242  
 Nitroxide 357–358  
   chiral magnets 49–53, 67
- o**  
 Octamethylferrocene 249–250  
 Optical effects 337
- p**  
 Pentamethylferrocene 249  
 Perylene 112, 115, 143–146

- Polychlorinated triphenylmethyl 273–278  
 Polyoxometallates (POM) 133–143  
 POM *see* Polyoxometallates  
 Porous materials *see* Nanoporous  
 Prussian blue 43, 53, 60–68, 161, 238–341, 263, 264  
   critical temperatures 302–305  
   magnets 291–337  
   structure 385–387  
   synthesis 384–385, 388–390
- r**  
 Relativistic magnetic properties 373–384  
 RKKY Model 107, 108–111, 120  
 Room temperature magnets 322
- s**  
 Scaling *see* Critical constants  
 Semiquinone 169, 178–180,  
 Specific heat 230  
 Spin coupling mechanism 254–255  
 Spin crossover 72, 98–99, 271–272  
 Spin density 20, 26, 27, 253  
 Spin flop 80  
 Spin fluctuations 78  
 Spin frustration 72, 73
- Superconductivity and magnetism 107–108  
 Superexchange 82, 170–173, 180–184  
 Superparamagnetic scaling 364
- t**  
 TCNE *see* Tetracyanoethylene  
 TCNQ *see* 7,7,8,8-Tetracyano-*p*-quinodimethane (TCNQ)  
 Tetracyanoethylene 169  
 7,7,8,8-Tetracyano-*p*-quinodimethane (TCNQ) 169, 238, 242  
 Tetrahalometallates 111–122  
 Thin layers 337  
 Tricyanomethanide *see*  $M[C(CN)_3]_2$   
 Tris(oxalato)metallates 67, 105, 131, 146, 154, 202, 214–215  
 TTF-based electron donors 105–106, 111–143
- v**  
 Valance bond configuration interaction 319–322  
 Vanadium carboxylates 269
- x**  
 XY Model 351