

## PUBLICATIONS

### Hans Bill

1. **H. Bill, R. Bieri.** Z. Angw. Math. Phys., **14** (1963) 189. Der Resonanznachweis von Ionen im Omegatron.
2. **H. Bill, R. Lacroix.** Phys. Letters **21** (1966) 257. Preliminary results on a centre in CaF<sub>2</sub> crystals.
3. **H. Bill, H. Suter, R. Lacroix.** Phys. Letters **21** (1966) 257. The V<sub>k</sub> centre in SrCl<sub>2</sub> crystals.
4. **H. Bill, H. Suter, R. Lacroix.** Phys. Letters **22** (1977) 250. EPR of a centre in Y<sup>3+</sup> doped artificial CaF<sub>2</sub> crystals.
5. **H. Bill, R. Lacroix.** Proc. XIVth Colloque Ampère, Editor R. Blinc, **262** (1966) 262. Investigation on different centres in CaF<sub>2</sub> crystal.
6. **H. Bill, J. Sierro, R. Lacroix.** The American Mineralogist **52** (1967) 1003. Origin of Coloration in some fluorites.
7. **H. Bill, R. Lacroix.** Proc. J. de Physique **8 - 9 C** (1967) C 4-138. RPE de l'ion moléculaire (OF)<sup>2-</sup> contenant de l'oxygène <sup>17</sup>O.
8. **H. Bill, J.M. Moret, R. Lacroix.** Proc. XVth Colloque Ampère, Editor R. Averbuche, (1969) 323. A V<sub>k</sub> centre in SrFCl Crystals.
9. **H. Bill.** Phys. Letters, **29A** (1969) 593. ENDOR investigation of Gd<sup>3+</sup> in CaF<sub>2</sub> crystals.
10. **H. Bill.** Helv. Phys. Acta, **42** (1969) 771. Investigations on colour centres in alkaline earth fluorides.
11. **H. Bill.** C.R. des Séances SPHN Genève **5** (1970) 165. Le centre O<sub>2</sub><sup>-</sup> dans les fluorines naturelles.
12. **H. Bill.** Proc. XVIth Colloque Ampère, Editor I. Ursu (1971) 929. Resolved Electron Phonon Interaction Observed in the optical absorption spectrum of a colour centre in CaF<sub>2</sub>.
13. **H. Bill.** Sol. State Comm. **9** (1971) 477. Jahn-Teller effect of the O<sup>-</sup> ion in CaF<sub>2</sub>.
14. **H. Bill.** Phys. Rev. B **6** (1972) 4359. Comment on Jahn-Teller distortion of Ag<sup>2+</sup> ions in SrF<sub>2</sub> and CaF<sub>2</sub> by odd modes.
15. **H. Bill, C. Milleret, R. Lacroix.** Proc. XVIIth Colloque Ampère (1973) 233. EPR Study of the Ag<sup>2+</sup> ion in SrCl<sub>2</sub>.

16. **H. Bill, R. Chatterjee, J.M. Dixon.** *Phy. Stat. Sol. (b)* **57** (1973) K 51. Comments on the relativistic orbit lattice interaction as a possible mechanism of the ground state splitting of S-state ions.
17. **H. Bill.** *Phys. Letters* **44A** (1973) 101. Observation of  $\text{Cu}^{2+}$  in  $\text{SrCl}_2$  crystals.
18. **H. Bill, W. Von Der Osten.** *Journal de Physique*, **C9 – 11** (1973) C9-519. Experimental results on a new  $\text{O}^-_2$  center in  $\text{CaF}_2$  crystals.
19. **J.M. de Siebenthal, H. Bill, R. Lacroix.** *Solid State Comm.* **14** (1974) 167. Paramagnetic Resonance Results on a tetragonal  $\text{Eu}^{2+}$  center in  $\text{SrClF}$  crystals.
20. **J.P. Rivera, H. Bill, J. Weber, R. Lacroix, G. Hochstrasser, H. Schmid.** *Sol. State Comm.* **14** (1974) 21. Très forte séparation de l'état fondamental  $^6\text{S}_{5/2}$  du  $\text{Mn}^{2+}$  dans des boracites de Cl, Br et I en phase cubique.
21. **W. Zingg, H. Bill, J. Buttet, M. Peter.** *Phys. Rev. Letters* **32** (1974) 1221. ESR observations of the  $7_6$  excited state of  $\text{Er}^{3+}$  in the dilute alloy  $\text{Pd:ER}$
22. **J.P. Rivera, H. Schmid, J.M. Moret, H. Bill.** *Int. Journal Magnetism* **6** (1974) 212. Measurements of the Magnetolectric Effect in Ni-Cl Boracite.
23. **J.M. de Siebenthal, H. Bill.** *Phys. Stat. Sol. (b)* **65** (1974) K 35. A new  $\text{O}^-$  center in  $\text{SrCl}_2$  crystals.
24. **H. Bill.** *Sol. State Comm.* **15** (1974) 911 . Motional Effects in the EPR spectrum of an  $\text{O}^{-3}$  molecule ion in Natural  $\text{CaF}_2$  crystals.
25. **H. Bill, R-H. Silsbee.** *Phys. Rev.* **B10** (1974) 2697. Dynamical Jahn-Teller and Reorientation Effect in the EPR spectrum of  $\text{CaF}_2:\text{O}^-$ .
26. **C. Balestra, H. Bill.** *Proc. XVIIIth Ampère Congress, Nottingham* (1974) 155. Investigation of the  $4d^1$  ion  $\text{Y}^{2+}$  in  $\text{CaF}_2$  crystals.
27. **H. Bill, J. Mareda.** *Chem. Phys. Letters* **36** (1975) 218. ENDOR investigation of a  $\text{V}_F$  center in natural  $\text{CaF}_2$  crystals.
28. **H. Bill.** *Sol. State Comm.* **17** (1975) 1209. Experimental results on the off center  $\text{O}^-$  ion in KI crystals.
29. **H. Bill, W. Von Der Osten.** *Phys. Stat. Sol. (b)* **75** (1976) 613 . Raman and Vibronic spectra of a new oxygen molecule in  $\text{CaF}_2$ .
30. **D. Nicollin, H. Bill.** *Sol. State Comm.* **20** (1976) 135.  $\text{Gd}^{3+}$ ,  $\text{Eu}^{2+}$  in  $\text{SrFCl}$  and  $\text{BaFCl}$  singel crystal : EPR results and application of the superposition model.

31. **J.P. Rivera, H. Bill, R. Lacroix.** *Ferroelectrics* **12** (1976) 387. EPR of  $Mn^{2+}$  in the Ferroelectric and Paraelectric Phases of natural (Mg-Cl) Boracite (I).
32. **J.P. Rivera, H. Bill, R. Lacroix.** *Ferroelectrics* **13** (1976) 363. EPR of  $Mn^{2+}$  in the three ferroelectric phases of Zn-Cl Boracite. A model for the monoclinic phase with bigger cell is proposed (II).
33. **J.P. Rivera, H. Bill, R. Lacroix.** *Phys. Stat. Sol. (a)* **35** (1976) K105. EPR of powder Mg-OH :  $Mn^{2+}$  Boracites suggesting a rhombohedral phase.
34. **J.M. de Siebenthal, H. Bill.** *Chem. Phys. Letters* **45** (1977) 334. EPR of  $O_2^-$  pairs in  $SrCl_2$  crystals.
35. **J.M. de Siebenthal, H. Bill.** *Phys. Stat. Sol. (b)* **79** (1977) 259. A perturbed  $O_2^-$  molecule ion in  $SrCl_2$  single crystals.
36. **R. Juryiska, H. Bill.** *Il Nuovo Cimento* **38B** (1977) 369. EPR investigation of defects in  $MoO_3$  single crystals.
37. **J.M. Moret, H. Bill.** *Phys. Stat. Sol. (a)* **41** (1977) 163. Experimental determination of the spin-stress coefficients of  $Gd^{3+}$  in the new host crystal  $Na_2S$ .
38. **W. Bühner, H. Bill.** *Helv. Phys. Acta* **50** (1977) 431. Photonendispersion im  $Na_2S$  Kristall.
39. **J. Weber, H. Bill.** *Chem. Phys. Letters* **52** (1977) 562. Jahn-Teller distortion and electronic structures of the  $O^-$  center in  $CaF_2$  and  $Ms X_9$  study.
40. **J.P. Rivera, H. Bill, R. Lacroix.** *Ferroelectrics* **20** (1978) 225. *Comptes Rendus Conf. sur les transitions de phases, Leningrad.* Reinterpretation of an EPR experiment on  $Cu^{2+}$  with regard to the structure of Rhombohedral Zn-Cl Boracite.
41. **H. Bill.** *Phys. Stat. Sol. (b)* **89** (1978) K49. Parametrization of the measured temperature dependence of the crystal field splitting in axial  $^8S$  state ion centers.
42. **H. Bill, G. Calais.** *Phys. Chem. Minerals* **3** (1978) 117. Color centers, associated Rare-earth ions and the origin of coloration in natural fluorites.
43. **D. Nicollin, H. Bill.** *J. Phys. C* **11** (1978) 4803. Experimental contribution to the study of S-state ions in ionic single crystals.
44. **J.M. de Siebenthal, D. Nicollin, H. Bill.** *Chem. Phys. Letters* **58** (1978) 317. An EPR investigation of  $Fe^{3+}$  in  $SrCl_2$ .
45. **H. Bill, L. Schwan, E. Siegmund.** *C.R. SPHN Genève* **13** (1978) 23. A Jahn-Teller model of the  $S^-$  ion in KCl and KBr crystals.

46. **H. Bill.** J. Chem. Phys. **70** (1979) 277. An  $O_2^-$  molecule ion in  $CaF_2$ : Structure and dynamical features.
47. **C. Balestra, H. Bill, J.L. Clignez.** J. Phys. E Sci. Instrum. **12**, (1979) 824. A computer controlled ENDOR spectrometer.
48. **J.M. de Siebenthal, H. Bill.** Phys. Stat. Sol. (b) **91** (1979) 479. Investigation of sulfur molecular paramagnetic centers in  $SrCl_2$ .
49. **A. Montaner, M. Galtier, C. Benoit, H. Bill.** Phys. State. Sol. (a) **52**, (1979) 597. Optical constants of sodium sulphide.
50. **H. Bill, D. Döhrer, L. Schwan, E. Siegmund.** Sol. State Comm. **34** (1980) 383. g-Tensor analysis of  $S^-$  and  $Se^-$  centers in cubic crystals.
51. **W. Bühner, H. Bill.** J. Phys. C **13** (1980) 5495. Lattice dynamics of  $Na_2S$ .
52. **J.M. de Siebenthal, H. Bill.** J. Phys. Chem. Sol. **42** (1981) 89. EPR of  $N_2^-$  centers in Strontium Chloride.
53. **F. Deyhimi, H. Bill.** Chem. Phys. Letters **78** (1981) 603. Raman investigation of the structural and vibrational properties of the rose center in alkaline earth fluorides.
54. **J.C. Gâcon, A. Gros, H. Bill, J.P. Wicky.** J. Phys. Chem. Sol. **42** (1981) 587. New measurements of the emission spectra of  $Sm^{2+}$  in  $KMgF_3$  and  $NaMgF_3$  single crystals.
55. **Ch. Jörgensen, H. Bill, R. Reisfeld.** J. Luminesc. **24/25** (1981) 91. Candoluminescence of rare earths.
56. **Tho Nguyen-Xuan, J.M. Tronchet, H. Bill.** Helv. Chim. Acta **64**, (1981) 1949. Etude par des techniques de partition d'énergie des facteurs qui conditionnent l'équilibre conformationnel de propènes di-substitués-1,3 de configuration E.
57. **H. Bill.** J. Chem. Phys. **76** (1982) 219. Origin of the coloration of yellow fluorites : The  $O_3^-$  center - structure and dynamical aspects.
58. **F. Deyhimi, H. Bill,** J. Sol. State Chem. **43** (1982) 181 . Analogs of the rose center in the alkaline earth fluoride produced by hydrolysis and identification by Raman spectroscopy.
59. **R. Buchet, H. Bill, B. Siegfried.** Spectrochimica Acta **38A** (1982) 239 . Experimental Raman and IR Investigation of Phenobarbital Febarbamate, Diferbarbamate and Tetrabamate.
60. **H. Hagemann H.Bill.** Chem. Phys. Letters **87** (1982) 45. Low temperature Raman spectra of Bis(ethylammonium)tetrachlorocadmate (EACdC) and two isotopic analogs.
61. **J.M. de Siebenthal, H. Bill.** Chem. Phys. Letters **87** (1982) 40. EPR investigation on an  $O_3^-$  center in  $SrCl_2$ .

62. **Hagemann H. Bill.** Chem. Phys. Letters **90** (1982) 282. Vibrational characterization of the compound  $(C_2H_5NH_3)_2PdCl_4$  (EAPdC).
63. **Y. Ravi Sekhar, H. Bill.** Chem. Phys. Letters **92** (1982) 349. The electronic structure of  $CrO_4^{3-}$  as studied by EPR in  $K_2SO_4$  single crystals.
64. **H. Hagemann, H. Bill.** Chem. Phys. Letters **93** (1982) 582. Raman investigation on structural phase transitions in EACdC.
65. **F. Deyhimi, H. Bill.** Chem. Phys. **81** (1983) 433. Multiple-order resonant Raman scattering of the localized molecular Rose center in  $BaF_2$ .
66. **H. Bill, Y. Ravi Sekhar.** J. Phys. C **16** (1983) L889. E x e type Jahn-Teller effect of  $ReO_4^{2-}$  in KBr crystals : an EPR study.
67. **H. Bill, Y. Ravi Sekhar.** Phys. Rev. B **28** (1983) 2352.  $(ReO_4)^{2-}$  ion in KCl : Experimental evidence for a multimode intramolecular Jahn-Teller effect.
68. **Z. Iqbal, H. Bill, R.H. Baughman.** J. de Physique C3 **44** (1983) C3-761. Vibrational spectra and structure of undoped and doped polyparaphenylene.
69. **H. Hagemann, H. Bill.** J. Chem. Phys. **80** (1984) 111. Raman spectroscopic study of  $EtNH_3X$  ( $X = Cl, Br$ ) and several deuterated analogs.
70. **H. Bill, G. Magne, H.U. Güdel, K. Neuenschwander.** Chem. Phys. Letters. **104**, (1984) 258. ENDOR study of  $Gd^{3+}$  in  $Cs_2NaYCl_6$ .
71. **H. Bill.** *Observation of the Jahn-Teller Effect with Electron Paramagnetic Resonance.* Chapter **13** (p. 709-817) in « The Dynamical Jahn-Teller effect in Localized Systems » edited by Yu. E. Perlin, M. Wagner. North Holland Amsterdam (1984).
72. **G. Magne, H. Bill.** Proceedings **XXIIIth** Ampère Congress (1984) Zürich. EPR of  $Cu^{2+}$  in NaF and  $KzF_3$ .
73. **Y. Ravi Sekhar, H. Bill.** Proceedings **XXIIIth** Ampère Congress, Zürich (1984). EPR studies on  $ReO_4$  in alkali halide crystals : intramolecular E x e type static JT effect.
74. **G. Magne, H. Bill.** Sol. State Comm. **53** (1985) 661.  $Cu^{2+}$  in NaF: EPR study of a dynamic center.
75. **H. Bill, O. Pilla.** J. Phys. C **17** (1985) 3263. Study of the intermediate JT system  $La^{2+}$  in  $CaF_2$  by Raman and EPR spectroscopy.
76. **Y. Ravi Sekhar, H. Bill.** J. Chem. Phys. **82** (1985) 645 . EPR Studies on an « unperturbed »  $CrO_4^{3-}$  center in  $K_2SO_4$  crystals.
77. **Y. Ravi Sekhar, H. Bill.** Mol. Phys. **54** (1985) 757. EPR of  $MnO_4^{2-}$  in KBr crystals under uniaxial stress. A case of an intermediate to weak JT effect.

78. **H. Hagemann, H. Bill, J. Mareda.** J. Mol. Structure **127** (1985) 241. Raman study of conformational disorder in n-PrNH<sub>3</sub>X (X=Cl, Br, I).
79. **H. Hagemann, H. Bill, D. Joly, P. Müller, N. Pautex.** Spectrochimica Acta **41A** (1985) 751. Raman investigation of 1,4-cyclohexadiene in the liquid and solid state.
80. **H. Hagemann, H. Bill.** J. Phys. C **18** (1985) 6441. Raman spectroscopic study of structural phase transitions in the layer crystals (EtNH<sub>3</sub>)<sub>2</sub> MCl<sub>4</sub> with M = Cd and Mn.
81. **H. Bill, A. Magne, C. Balestra, D. Lovy.** J. Phys. C **19** (1986) L 19. A trigonally charge compensated Y<sup>2+</sup> ion in CaF<sub>2</sub>: a Jahn-Teller system.
82. **H. Hagemann, J.-L. Clignez, F. Rouge, H. Bill.** J. Phys. E **19** (1986) 199. A simple, low cost furnace for high temperature Raman measurements.
83. **Y. Ravi Sekhar, H. Bill.** J. Chem. Phys. **85** (1986) 4938. A paramagnetic Cl-O defect produced by X-irradiation of KBr : ClO<sub>4</sub><sup>-</sup>.
84. **Y. Ravi Sekhar, H. Bill, D. Lovy.** Chem. Phys. Letters **136** (1987) 57. The identification and structure of FSO<sub>2</sub> radical trapped in potassium sulphate crystals.
85. **H. Hagemann, Y. Ravi Sekhar, H. Bill.** J. Chem. Education **64** (1987) 456. Vibrational spectra of MnO<sub>4</sub><sup>-</sup> isolated in KBr crystals.
86. **Y. Ravi Sekhar, H. Bill.** Phys. Stat. Sol. (b) **143** (1987) K111. <sup>2</sup>S ground state ions in ionic crystals : ESR results.
87. **J.P. Rivera, H. Bill, R. Lacroix.** Ferroelectrics **80** (1988) 31. ESR and Buerger Precession study of orthorhombic Mg-Cl : Mn<sup>2+</sup> Boracite.
88. **H. Bill, Y. Ravi Sekhar, D. Lovy.** J. Phys. C : Solid state phys. **21** (1988) 2795. An EPR Study of a new low temperature phase transition in K Li SO<sub>4</sub> : MoO<sub>4</sub><sup>3-</sup>.
89. **Y. Ravi Sekhar, H. Bill.** Phys. Rev. B **38** (1988) 11802. EPR evidence of a pressure induced phase transition in Li K SO<sub>4</sub>.
90. **B. Moine, C. Pedrini, D.S. Mc Clure, H. Bill.** J. Lum. **40-41** (1988) 299. Fluorescence and photoionisation processes of divalent Yb ions in SrF<sub>2</sub>.
91. **M. Mohnhaupt, H. Hagemann, J.P. Perler, H. Bill, J. Boukavalas, J.C. Rossier, Ch. W. Jefford.** Helv. Chimica Acta **71** (1988) 992. A vibrational study of some 1,2,4-Trioxanes.
92. **D. Shaltiel, H. Bill, M. Decroux, H. Hagemann, A. Junod, M. Peter, Y. Ravi Sekhar, G. Triscone, E. Walker, Y.R. Yan, Z.X. Zhao.** Physica C **157** (1989) 240. Observatin of ESR in the Bi High-T<sub>c</sub> superconductors.

93. **H. Hagemann, H. Bill**, Proc. XI Ram Conf. (1988) 451, eds, R.J.H. Clark and D.A. Long. Low temperature Raman study of the thermochromic crystal  $(C_2H_5NH_3)_2CuCl_4$  (EACuC)
94. **H. Bill, D. Lovy, H. Hagemann**. Sol. State Comm. **70** (1989) 511. Study of the T x t Jahn-Teller Effect : ESR of  $Ag^{2+}$  in the Alkaline earth fluorides.
95. **D. Shaltiel, H. Bill, P. Fisher, M. François, H. Hagemann, M. Peter, Y. Ravi Sekhar, W. Saclowski, H.J. Schell, G. Triscone, F. Walker, H. Yvon**. Physica C. **158** (1989) 424. Single crystal ESR studies on tetragonal  $YBa_2Cu_3O_{6+x}$ .
96. **H. Hagemann, H. Bill, J. Mareda**. J. Mol. Structure **196** (1989) 69. The conformational equilibrium of  $CH_3CH_2NH_3^+$  : Raman study in solution and ab initio calculation.
97. **D. Shaltiel, S.E. Barnes, H. Bill, M. François, H. Hagemann, J. Jegondaz, D. Lovy, P. Monod, P. Peter, A. Ravi Sekhar, W. Sadowski, E. Walker**. Physica C **161** (1989) 13. Unusual behavior of the Gd ESR in single crystals of  $Gd_yY_{1-y}Ba_2Cu_3O_{6+x}$  with  $x = 0.1 - 0.8$  and  $y = 0.03 - 0.06$ . Evidence for magnetic interaction in the superconductors.
98. **A. Monnier, D. Chambaz, H. Bill, H.U. Güdel, J. Weber**. J. Chem. Phys. **91** (1989) 6650. Electronic structure of  $Cr^{3+}$  in  $Cs_2NaYCl_6$  and  $Cs_2NaYBr_6$  lattices. EPR and ENDOR measurements and multiple scattering  $X\alpha$  calculations.
99. **H. Bill, D. Lovy**. J. Phys. Cond. Matter **1** (1989) 10265. The effect of trigonal and tetragonal stresses on the model Jahn-Teller system  $Y^{2+}$ :  $SrCl_2$ .
100. **H. Hagemann, H. Bill, W. Sadowski, E. Walter, M. François**. Sol. State Comm **73** (1990) 447. Raman spectra of single crystal CuO.
101. **W. Sadowski, H. Hagemann, M. François, H. Bill, M. Peter, E. Walker, K. Yvon**. Physica C **170** (1990) 103. Growth of single crystals, thermal dependency of lattice parameters and Raman scattering in the  $Nd_{2-x}Ce_xCuO_{4-\delta}$  system.
102. **H. Hagemann, A. Lucken, H. Bill, J. Gysler-Sanz, H.A. Stalder**. Phys. Chem. Minerals **17** (1990) 395. Polarized Raman spectra of Beryl and Bazzite.
103. **E. Minner, H. Bill**. Chem. Phys. Letters **175** (1990) 231. EPR and optical investigation of thermally treated NaF:Cu single crystals.
104. **D. Lovy, J.B. Plüss, H. Bill**. Meas. Sci. Technol. **1** (1990) 720. A new pulse generator for pulsed ESR.
105. **A. Monnier, A. Gerber, H. Bill**. J. Chem. Phys. **94** (1991) 5891. The Jahn-Teller system  $Ag^{2+}$  : NaF; an EPR and optical absorption study.
106. **D. Shaltiel, H. Bill, A. Grayevsky, A. Junod, D. Lovy, W. Sadowski, E. Walker**. Phys. Rev. B. **43** (1991) 13594. Microwave absorption across Tc: Determination of the angular dependence  $H_{c2}(\theta)/H_{c2}$
107. **W. Bührer, F. Altdorfer, J. Mesot, H. Bill, P.-L. Carron, H.G. Smith**. J. Phys. C **3** (1991) 1055. Structural and dynamical properties of Lithium-sulfide investigated by coherent neutron scattering.

108. **A. Lucken, H. Hagemann, H. Bill.** J. Phys. Condensed Matter **3** (1991) 5085. Raman study of the incommensurate Layer crystal  $(\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_3)_2 \text{MnCl}_4$  from 10K to 300K.
109. **R. Jaaniso, H. Bill.** Phys Rev. B **44** (1991), 2389. Rapid communications. f-f and f-d transition interference in  $\text{Sm}^{2+} : \text{SrFCl}$ .
110. **R. Jaaniso, H. Bill.** Europhys. Letters, **16** (1991) 569. Room temperature persistent spectral hole burning in Sm-doped  $\text{SrFCl}_{0.5}\text{Br}_{0.5}$  mixed crystals.
111. **P.M. Mjware, J.D. Comins, P.,E. Ngoepe, W. Bühler, H. Bill.** J. Phys. Con. Mat. **3** (1991) 4289. Brillouin scattering investigation of the high temperature diffuse phase transition in  $\text{Li}_2\text{S}$ .
112. **R. Jaaniso, H. Hagemann, F. Kubel, H. Bill.** Chimia **46** (1992) 133. Members of the  $\text{PbFCl}$ -Type family. Possible Candidates for Room-Temperature Photochemical Hole Burning.
113. **C. Pedrini, D. Moine, H. Bill.** J. Phys. Cond. Matter C **4** (1992) 1615. One- and two-photon spectroscopy of monovalent copper ions in Calcium Fluoride.
114. **R. Jaaniso, H. Bill.** XIth Symposium on the Jahn-Teller Effect, Ovronnaz, Switzerland. Abstracts (1992) 20. Quantum interference on selected f-f transitions through electron-phonon coupling.
115. **E. Minner, H. Hagemann, H. Bill.** XIth Symposium on the Jahn-Teller Effect, Ovronnaz, Switzerland. Abstracts (1992) p. 32. Copper (II) in  $\text{RbCdF}_3$ , an E 1 e Jahn-Teller System with a temperature dependent trigonal ligand field.
116. **F. Altdorfer, W. Bühler, I. Anderson, O Schärpf, H. Bill, P.L. Carron, H.G. Smith.** Physica B **180/181** (1992) 795. Lithium diffusion in the superionic conductor  $\text{Li}_2\text{S}$ .
117. **E. Minner, H. Bill.** Proc. XIIth Int. Conf. on Defects in Isolating Materials, Eds. G. Kanert, J. Spaeth, World Sci. Publ. (1993), 571. The Jahn-Teller systems  $\text{Ag}^{2+}$  and  $\text{Ca}^{2+}$  in  $\text{RbCdF}_3$ . An EPR investigation.
118. **C. Pedrini, B. Moine, H. Bill.** Proc. XIIth Int. Conf. on Defects in Insulating Materials. Eds G. Kanert, J. Spaeth, World Sci. Publ. (1993), 593.  $\text{Cu}^+$  Luminescent centers in  $\text{CaF}_2$ .
120. **J.C. Gâcon, G.W. Burdick, B. Moine, H. Bill.** Proc. XIIth Int. Conf. on Defects in Insulating Materials, Eds. G. Kanert, J.M. Spaeth (1993) 1306. Two-photon Spectroscopy of  $\text{Sm}^{2+}$  in  $\text{SrF}_2$ : Polarization dependences of  ${}^7\text{F}_0 - {}^5\text{D}_J$  Transitions.
121. **J.C. Gâcon, G.W. Burdick, B. Moine and H. Bill.** Phys. Rev. B. **47** (1993) 11712.  ${}^7\text{F}_0 - {}^5\text{D}_3$  two-photon absorption transition of  $\text{Sm}^{2+}$  in  $\text{SrF}_2$ .
122. **R. Jaaniso, H. Hagemann and H. Bill.** Technical Digest Opt. Soc. America, Ascona (1993) 16. Inhomogeneous broadening and spectral hole burning in  $\text{Sr}_y\text{Ba}_{1-y}\text{FCl}_x\text{Br}_{1-x}$
123. **H. Hagemann, F. Kubel, H. Bill.** Material Research Bulletin. **28** (1993) 353. Crystallochemical Study of mixed Strontium-Barium Fluorohalides.

124. **R. Jaaniso, H. Bill.** J. Phys. Cond. Matter **5** (1993) 5921. Optical detection of  $\text{Sm}^{2+}$  nuclear quadrupole resonances in  $\text{SrFCl}$  and  $\text{BaFCl}$ .
125. **E. Minner, D. Lovy, H. Bill.** J. Chem. Phys. **99** (1993) 6378. Electron paramagnetic resonance and relaxation study of Copper(II) and Silver(II) in  $\text{CsCdF}_3$  single crystals.
126. **F. Altdorfer, W. Bührer, I. Anderson, O. Schärpf, H. Bill, P.L. Carron.** J. Phys. Cond. Matter **6** (1994) 9937. Fast ionic diffusion in  $\text{Li}_2\text{S}$  investigated by quasi-elastic Neutron Scattering.
127. **C. Pedrini, B. Bouttet, C. Dujardin, B. Moine, H. Bill.** Chem. Phys. Lett. **220** (1994) 433. Spectroscopic studies of the f – d ultraviolet transitions of  $\text{Pr}^{3+}$  in alkaline earth fluorides.
128. **A. Monnier, P. Boutinaud, H. Bill,** J. Phys. Chem. Sol. **55** (1994) 559. Silver-doped alkaline earth fluorides : crystal growth and physico-chemical processes studied by optical spectroscopy and EPR.
129. **P. Boutinaud, A. Monnier, H. Bill,** J. Phys. C. Cond. matter **6** (1994) 8931. Luminescence mechanisms of  $\text{Ag}^+$  Cubic centers in Strontium Fluoride crystals.
130. **Ch. W. Jefford, M. C. Josso, M. da Graça, H. Vicente, H. R. Hagemann, D. Lovy, H. Bill.** Helv. Chim. Acta **77** (1994) 1851. Thermolysis and chemiluminescence of monocyclic 1,2,4-Trioxan-5-ones.
131. **H. Hagemann, A. Lucken, D. Lovy, H. Bill.** Proceedings XIVth Conf. on Raman Spectroscopy. Edts. N.T. Yu, X.Y. Li, J. Wiley Sons, Singapore (1994), 1072.
132. **R. Jaaniso, H. Hagemann, H. Bill.** J. Chem. Phys. **101** (1994) 10323. Inhomogeneous broadening of optical spectra in mixed crystals: Basic model and its application to  $\text{Sm}^{2+}$  in  $\text{SrFCl}_x\text{Br}_{1-x}$
133. **L. Oliveira, O.R. Nascimento, M. Siu Li, C. Pedrini, H. Bill.** Radiation Effects and Defects in Solids **135** (1995) 121. Thermally stimulated depolarization current of monovalent copper ions in Calcium Fluoride.
134. **A. Monnier, M. Schnieper, R. Jaaniso, H. Bill.** Radiation Effects and Defects in Solids **133-134** (1995) 253. Samarium doped alkaline earth halide thin films as spectrally selective materials for optical hole burning?
135. **F. Kubel, H. Hagemann, H. Bill.** Mat. Res. Bulletin **30** (1995) 405. Crystallochemical and optical study of mixed alkaline earth samarium Fluorhalides of the Lead fluoride chloride type.
136. **P. Boutinaud, A. Monnier, D. Lovy, H. Bill.** Proc. Estonian. Acad. Sci. Phys. Mat. **44** 2/3 (1995) 199. Silver impurities in cubic metal fluorides. Jahn-Teller effects in the  $4d^9 5s^1$  and  $4d^9$  multiplets.
137. **P. Boutinaud, A. Monnier, H. Bill.** Radiation Effects and Defects in Solids **136** (1995) 69.  $\text{Ag}^+$ centers in Alkaline Earth Fluorides : New UV solid state Lasers ?

138. **R. Jaaniso, H. Bill.** *J. Luminescence* **64** (1995) 173. High temperature spectral hole burning on Sm-doped single crystal materials of PbFCl family.
139. **H. Bill, R. Jaaniso, H. Hagemann, D. Lovy, A. Monnier, M. Schnieper.** *Optical Engineering* **34** (1995) 2333. High-temperature spectral hole burning on Sm(II) in single crystals for the Lead Fluorohalide structure family and in thin films of calcium fluoride.
140. **M.L. Falin, M.V. Eremin, H. Bill, D. Lovy.** *Appl. Magn. Res.* **9** (1995) 329. ENDOR and transferred hyperfine interaction of impurity RE ions with nearest diamagnetic ions in crystals.
141. **P. Boutinaud, H. Bill.** *J. Phys. Chem. Sol.* **57** (1996) 55. Optical centers related to silver in Ag<sup>+</sup>-doped Strontium Fluoride crystals.
142. **F. Kubel, H. Hagemann, H. Bill.** *Z. anorg. allgem. Chemie* **622** (1996) 343. Synthesis and structure of Ba<sub>12</sub>F<sub>19</sub>Cl<sub>5</sub>.
143. **F. Kubel, H. Hagemann, H. Bill.** *Z. anorg. allgem. Chemie*, **622** (1996) 1374. Synthesis and structure of mixed Ba<sub>12</sub>F<sub>19</sub>Cl<sub>5-x</sub>Br<sub>x</sub> crystals.
144. **H. Hagemann, F. Kubel, H. Bill.** *Eur. J. Sol. State Inorg. Chem.* **33** (1996) 1101. Crystal structure of Sr<sub>4</sub>Ocl<sub>6</sub>.
145. **X.F.D. Chillier, A. Monnier, H. Bill, F.O. Gülaçar, A. Buchs, S.A. Luckey, G.J. Van Berkel.** *Rapid Comm. in Mass Spectrometry* **10** (1996) 299. A mass spectrometry and optical spectroscopy investigation of gas-phase ion formation in electrospray.
146. **F. Kubel, H. Hagemann, H. Bill.** *Z. anorg. allgem. Chemie* **623** (1997) 573. Synthesis and Structure of mixed Ba<sub>6</sub> Mg<sub>7</sub>F<sub>26</sub> crystals.
147. **F. Kubel, H. Hagemann, H. Bill.** *Mat. Res. Bulletin* **32** (1997) 263. Synthesis, crystal structure and spectroscopic investigations of Samarium doped mixed Ba<sub>1-8</sub>Sr<sub>8</sub>MgF<sub>4</sub> crystals.
148. **A. Monnier, M. Schnieper, R. Jaaniso, H. Bill.** *J. Appl. Phys.* **82** (1997) 536. Samarium-doped thin films of the Matlockite structure : design, luminescence, and hole-burning experiments.
149. **V. Lefèvre, A. Monnier, M. Schnieper, D. Lovy, H. Bill.** *Z. Physikal. Chemie*, **200** (1997) 265. Defect association, Jahn-Teller or Off-center effect in CaF<sub>2</sub>:Copper, BaF<sub>2</sub>:silver?
150. **H. Hagemann, J. Mareda. C. Chiancone, H. Bill.** *J. Mol. Structure* **410-411** (1997) **357**. Conformational studies of 2-butanol using temperature-dependent Raman measurements and MM3 calculations.
151. **F. Kubel, H. Hagemann, H. Bill.** *Zeitschrift für Kristallographie – New crystal structures* **212** (1997) 89. Crystal structure of sodium barium aluminiumhexafluoride, NaBaAlF<sub>6</sub>.

152. **B. Bertheville, D. Lovy, F. Kubel, H. Bill.** J. Phys. Chem. Sol. **58** (1997) 1569. Ionic conductivity of Na<sub>2</sub>S single crystals between 298K and 1350K. Experimental setup and first results.
153. **J.M. Rey, H. Bill, D. Lovy, H. Hagemann.** Journal of Alloys and Compounds **268** (1998) 60. Europium doped BaMgF<sub>4</sub>, an EPR and optical investigation.
154. **F. Kubel, H. Hagemann, H. Bill.** Acta Cryst. **C53** (1997) 1735. Mixed Ba<sub>5.24</sub>Sr<sub>0.76</sub>Mg<sub>7</sub>F<sub>26</sub>.
155. **B. Bertheville, H. Bill, H. Hagemann.** J. Phys. C **10** (1998) 2155. Experimental Raman scattering investigation of phonon anharmonic effects in LiS<sub>2</sub>.
156. **J. M. Rey, H. Bill, D. Lovy, H. Hagemann.** Journal of Alloys and Compounds **274** (1998) 164. EPR and optical investigation of Europium doped Ba<sub>2</sub>Mg<sub>3</sub>F<sub>10</sub>.
157. **D.L.Falin, V.A. Latypov, H. Bill, D. Lovy.** Applied Magn. Reson. **14** (1998) 427. Electron nuclear double resonance of the cubic Dy<sup>3+</sup> center in the KZnF<sub>3</sub> single crystal.
158. **H. Bill, G. J. Hollingsworth, D. S. McClure, B. Moine, Ch. Pedrini.** J. Chem. Phys. **109** (1998). 7328. Optical spectroscopy of the Ag<sup>+</sup> ion in NaF : experimental results and analysis of manifestations of the Jahn-Teller effect.
159. **R. Jaaniso, T. Avarmaa, M. Paas, M. Schnieper, F. Trotta, H. Bill.** Mol. Cryst. Liquid. Cryst. **314** (1998) 155. Thin film materials with Sm(III) for room temperature hole burning : design and photomechanism studies.
160. **F. Kubel, H. Bill, H. Hagemann.** Z. Kristallogr. **214** (1999) 139. Crystal structures of Eu(II) substituted barium magnesium fluorides : Ba<sub>0.78(3)</sub>Eu<sub>0.22(3)</sub>MgF<sub>4</sub> and Ba<sub>5.20(6)</sub>Eu<sub>0.80(6)</sub>Mg<sub>7</sub>F<sub>26</sub>.
161. **F. Kubel, H. Bill, H. Hagemann.** Zeitsch. Für Naturforschung. **54b** (1999) 515 . Low temperature crystal growth and structure of ordered Ba<sub>7</sub>F<sub>12</sub>Cl<sub>2</sub>.
162. **M. Schnieper, F. Trotta, S. Bersier, H. Bill.** Applied Physics letters **75** (1999) 40. Room-temperature persistent spectral hole burning in SrFCl : Sm<sup>2+</sup> films : temporal and spatial response.
163. **H. Hagemann, P. Tissot, D. Lovy, F. Kubel, H. Bill.** Journal of Thermal Analysis and Calorimetry **57** (1999) 193. Study of the solid-liquid equilibrium in mixed alkaline earth fluorohalides.
164. **F. Kubel, H. Bill, H. Hagemann.** Z. anorg. allg. Chem. **625** (1999) 643. Synthesis and structure of Ba<sub>7</sub>F<sub>12</sub>Cl<sub>2</sub>.
165. **F. Kubel, B. Bertheville, H. Bill.** Z. Kristallogr. **214** (1999) 302. Crystal structure of dilithiumsulfide, Li<sub>2</sub>S.
166. **J. Rey, H. Bill, D. Lovy, F. Kubel.** J. Phys. : Condens. Matter **11** (1999) 7301. EPR and optical investigation of europium doped Ba<sub>12</sub>F<sub>19</sub>Cl<sub>5</sub>.

167. **P. Mikhail, M. Schnieper, H. Bill, J. Hulliger.** Phys. Stat. Sol (b) Rapid Research Notes. **215** (1999) R17. Optical Hole Burning on  $\text{Sm}^{2+}$  at 5 K in Czochralski Grown  $\text{Sr}_2\text{MgSi}_2\text{O}_7$ : Sm Crystals.
168. **F. Kubel, H. Hagemann, H. Bill.** J. Sol. State Chem. **149** (2000) 56. Synthesis and structure of the disordered modification of  $\text{Pb}_7\text{F}_{12}\text{Cl}_2$ .
169. **P. Mikhail, J. Hulliger, M. Schnieper, H. Bill.** J. of Mat. Chem. **10** (2000) 987.  $\text{SrB}_4\text{O}_7$  :  $\text{Sm}^{2+}$  : crystal chemistry, Czochralski growth and optical hole burning.
170. **M. Falin, V. Latypov, B. Kazakov, A. Leushin, H. Bill, D. Lovy.** Physical Review B, **61** (2000) 9441. EPR, ENDOR, and optical spectroscopy of the tetragonal  $\text{Yb}^{3+}$  center in  $\text{KMgF}_3$ .
171. **P. Boutinaud, A. Monnier, D. Lovy, H. Bill.** J. Phys.Chem. Sol. **61** (2000) 1663. Optical analysis of x-ray effects on  $\text{Ag}^+$ -doped  $\text{SrF}_2$  crystals.
172. **F. Kubel, H. Bill, H. Hagemann.** Z. Allg. Anorg. Chem **626** (2000) 1721. Synthesis and structure of the ordered modification of  $\text{Ba}_6\text{EuF}_{12}\text{Cl}_2$ .
173. **R. Rodrigues-Herzog, F. Trotta, H. Bill, J.-M. Segura, B. Hecht, H.-J. Güntheradt.** Phys. Rev. B **62** (2000) 11163. Optical microscopy of single ions and morphological inhomogeneities in samarium-doped  $\text{CaF}_2$  thin films.
174. **B. Bertheville, H. Bill.** Solid State Ionics **139** (2001) 159. The temperature dependence of the Raman  $T_{2g}$  lattice mode in  $\text{K}_2\text{S}$  crystals.
175. **M. L. Falin, K. I. Gerasimov, A. M. Leushin, H. Bill, D. Lovy, T. Sanadze.** Journal of Alloys and Compounds **323** (2001) 692. EPR and optical spectroscopy of  $\text{SrF}_2$  doped with  $\text{Yb}^{3+}$ .
176. **J. M. Rey, H. Bill.** Journal of Luminescence **97** (2002) 224. Photostimulated luminescence of  $\text{Ba}_{12}\text{F}_{19}\text{Cl}_5$ :Eu.
177. **M. L. Falin, K. I. Gerasimov, V. A. Latypov, A. M. Leushin, H. Bill, D. Lovy.** Journal of Luminescence **102-103** (2003) 239. EPR and optical spectroscopy of  $\text{Yb}^{3+}$  ions in  $\text{CaF}_2$  and  $\text{SrF}_2$ .
178. **M. Matsarski, D. Lovy, H. Bill, K. M. Mohnhaupt.** Phys. Rev. B **68** (2003) 205113. Light induced valence state switching in  $\text{BaFCl}:\text{La}$  and  $\text{SrFCl}:\text{La}$ .
179. **H. Hagemann, F. Kubel, H. Bill, F. Gingl.** Journal of Alloys and Compounds **374** (2004) 194.  $^5\text{D}_0 \rightarrow ^7\text{F}_0$  transition of  $\text{Sm}^{2+}$  in  $\text{SrMgF}_4$ :  $\text{Sm}^{2+}$ .
180. **M. Falin, H. Bill, D. Lovy.** J. Phys. Condens. Matter **16** (2004) 1293. EPR of  $\text{Sm}^{3+}$  in  $\text{BaFCl}$  single crystals.
181. **J. M. Rey, J. R. G. Thorne, R. G. Denning, H. Bill.** J. Phys. Condens. Matter **17** (2005) 1861. Inter- and Intra-configurational transitions of europium (II) in  $\text{Ba}_2\text{Mg}_3\text{F}_{10}$ .
182. **J. M. Rey, H. Bill, H. Hagemann, F. Kubel.** Phys. Rev. B **72** (2005) 184107. Ordering of the heavy anions in mixed  $\text{BaFBr}_{0.5}\text{I}_{0.5}$  crystals.

183. **B. Frühmann, F. Kubel, H. Hagemann and H. Bill.** Z. Anorg. Allg. Chem **630** (2004) 1484. Synthesis and structure of new Fluoride Bromide  $\text{Ba}_{6.668(2)}\text{Ca}_{0.332(2)}\text{F}_{12}\text{Br}_2$  and solid solutions with composition  $\text{Ba}_{7-x}\text{Ca}_x\text{F}_{12}(\text{Cl}_y\text{Br}_{1-y})_2$  with  $x = \sim 0.5$ ,  $0 < y < 1$ .