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INTRODUCTION

This bibliography lists publications related to the double fluorides $XMnF_3$, where X is K, Rb or Cs. These materials are antiferromagnetic with Néel temperatures of 88.3°K, 82.6°K and 53.5°K, respectively. Considerable interest has been shown in their properties since about 1960. They are characterized by having large exchange ($H_{ex} \approx 10^6$ Oe) and small crystalline anisotropy ($H_A < 10$ Oe). Antiferromagnetic resonance (AFMR) can be observed, therefore, at microwave frequencies without the need for very large magnetizing fields. Further, there is a strong hyperfine interaction that causes pronounced coupling between the nuclear magnetic resonance (NMR) of the Mn^{55} nuclei and the AFMR modes. Hence much of the published work to date has dealt with magnetic resonance.

References are listed alphabetically by author. The consecutive numbers beside each citation provide unique identification for the articles as they appear in the subject outline and index.

The sources consulted for the literature search include the abstracting services listed here, lists of references in related published papers, and the scientific journals currently being received by the Lincoln Laboratory Library. We also extend our appreciation to NASA and DDC for their request bibliography services, which were helpful to the comprehensiveness of the survey.

Accepted for the Air Force
Franklin C. Hudson
Chief, Lincoln Laboratory Office

SOURCES CONSULTED

Chemical Abstracts	1957 – July 1968
Dissertation Abstracts	1963 – 1967
Electronics and Communications Abstracts	1961 – August 1966
Physics Abstracts/Science	1957 – July 1968
Solid State Abstracts	1960 – 1965

SUBJECT OUTLINE AND INDEX

Physical Properties

Aleksandrov et al. (1); Beckman et al. (4, 5); Belyaev et al. (6, 7); Breed (9); Chang (11); Collins et al. (15); Cooke et al. (16); Cooper et al. (17); Deenades et al. (18); Gorodetsky (41); Hashimoto (43); Heeger et al. (45); Hirakawa et al. (52); Joseph (64); Kedzie et al. (66); Lee et al. (68); Machin et al. (70); McGuire (74); Montgomery et al. (82); Moruzzi et al. (83, 84); Ogawa (89); Okazaki et al. (90); Pearson (94); Pickart et al. (97); Prohofsky et al. (105); Rao et al. (106); Simanov et al. (114); Stevenson et al. (118); Suemune et al. (121); Teaney (124).

Relaxation

Blume et al. (8); Heeger et al. (48); Hinderks et al. (51); Mahler (71); Mahler et al. (72); Portis (101); Suhl (123).

Spin Waves

Cole (12); Cole et al (13); Freiser et al. (36); Heeger (44); Heeger et al. (46); Hinderks et al. (51); Nathans et al. (87); Ninio et al. (88); Windsor et al. (137).

PROPERTIES OF THE COMPOUNDS $RbMnF_3$, $KMnF_3$ AND $CsMnF_3$

1. Aleksandrov, K.S., Reshchikova, L.M. and Beznosikov, B.V.

   Behaviour of the Elastic Constants of $KMnF_3$ Single Crystals near the Transition of Puckering
   Phys Stat Sol, Vol 18, No 1, pp K17-K20 (1 Nov 1966).

   The velocities of longitudinal and shear elastic waves along principal crystalline directions were measured by an ultrasonic pulse method at a frequency of 30 MHz.

2. Antonov, A.V., Belyaeva, A.I. and Eremenko, V.V.

   Low-Temperature Anomaly in the Absorption Spectra of the Antiferromagnets $RbMnF_3$ and $KMnF_3$
   Fiz Tverd Tela, Vol 8, No 11, pp 3397-3399 (Nov 1966); Engl. transl. in Soviet Phys-Solid State, Vol 8, No 11, pp 2718-2720 (May 1967).

   A discontinuity was found in the absorption of the $C_1(^6A_{1g} \rightarrow {}^9E_g)$ and C_1 bands (~3900 Å) at temperatures below 30°K.

3. Aoyagi, K.

   Observation of Magnon Sideband in the Absorption Spectrum of $KMnF_3$
   J Phys Soc Japan, Vol 22, No 6, pp 1516-1517 (Jun 1967).

   The absorption lines B (17,892 cm^{-1}) and C (17,811 cm^{-1}) are attributed to pure electronic transitions (main lines) corresponding to the transition $^6A_{1g} \rightarrow {}^4T_{1g}$ of Mn^{2+}, while the A (17,944 cm^{-1}) line is attributed to the magnon sideband of C.

4. Beckman, O. and Knox, K.

   Magnetic Properties of $KMnF_3$. I. Crystallographic Studies
   Phys Rev, Vol 121, No 2, pp 376-380 (15 Jan 1961).

   Measurements of the lattice parameters for $KMnF_3$ by means of an x-ray rotation camera designed for temperatures down to 15°K are reported.

5. Beckman, O., Olovsson, I. and Knox, K.

   Structural Changes of $KMnF_3$ at Low Temperatures
   Acta Cryst, Vol 13, Pt 6, p 506 (10 Jun 1960).

   Using x-ray analysis, the crystal structure of $KMnF_3$ was examined when the material was cooled through the Néel temperature.

6. Belyaev, I.N. and Revina, O. Ya.

   The MF-MnF_2 Systems (M = Li, Na, K, Rb, Cs)
   Zhur Neorgan Khim, Vol 11, No 6, pp 1446-1450 (1966); Engl. transl. in Russian J Inorgan Chem, Vol 11, No 6, pp 772-774 (Jun 1966).

   The compositions of binary systems of the alkali metal fluorides were studied by thermography.

7. Belyaev, I.N. and Revina, O. Ya.

   Ternary Systems of the Manganese and Alkali Metal Fluorides
   Zhur Neorgan Khim, Vol 11, No 8, pp 1952-1958 (1966); Engl. transl. in Russian J Inorgan Chem, Vol 11, No 8, pp 1041-1044 (Aug 1966).

   Systems studied include LiF-CsF-MnF_2, NaF-CsF-MnF_2, KF-CsF_2, CsF-KF, $NaMnF_3$-$CsMnF_3$, and $CsMnF_3$-$KMnF_3$.

8. Blume, M. and Orbach, H.

Spin-Lattice Relaxation of S-State Ions: Mn^{2+} in a Cubic Environment
Phys Rev, Vol 127, No 5, pp 1587-1592 (1 Sep 1962)

The theory of spin-lattice relaxation is developed for S-state ions; in particular, for Mn^{2+} in a cubic environment. The wave functions for Mn^{2+} are generated to 1st order in the spin-orbit coupling parameter, the orbit-lattice interaction is formulated in terms of spherical harmonics, and the rate equations are derived for this system.

9. Breed, D. J.

Experimental Investigation of Two Two-Dimensional Antiferromagnets with Small Anisotropy
Physica, Vol 37, No 1, pp 35-46 (1967).

The magnetic properties have been studied of two antiferromagnetic Mn compounds, K_2MnF_4 and Rb_2MnF_4.

10. Bullock, D. L.

Perturbation Treatment of the Antiferromagnetic Ground State
Phys Rev, Vol 137, No 6A, pp 1877-1885 (15 Mar 1965).

Ground-state parameter series expansions are generated for the Heisenberg model. Experimental results for $KMnF_3$ and MnF_2 are not contradicted by this perturbation treatment.

11. Chang, T.-S.

Dielectric Properties of $RbMnF_3$
J Appl Phys, Vol 39, No 7, pp 3511-3512 (Jun 1967).

The dielectric constant and loss tangent of $RbMnF_3$ were measured as functions of frequency in the temperature range 25°C to 300°C.

12. Cole, P. H.

Nonlinear Coupling between Antiferromagnetic Resonance Modes in $RbMnF_3$
Appl Phys Lett, Vol 10, No 10, pp 272-275 (15 May 1967).

Nonlinear coupling between AFMR modes spaced in frequency an octave apart has been demonstrated experimentally. Calculations of the power-dependent conversion relation for up-conversion, and the critical power for subharmonic oscillation are given.

13. Cole, P. H. and Courtney, W. E.

Uniform Mode Resonance and Spin-Wave Instability in $RbMnF_3$
Proc 12th Ann Conf Magnetism and Magnetic Materials, Washington, D. C., 1966, ed. by E. G. Spencer and J. S. Kouvel; J Appl Phys, Vol 38, No 3, pp 1278-1279 (1 Mar 1967).

Low-power resonance linewidth and high-power 2nd-order spin-wave instability measurements were performed at 4.2°K.

14. Cole, P.H. and Ince, W. J.

Equilibrium Spin Configuration and Resonance Behavior of $RbMnF_3$
Phys Rev, Vol 150, No 2, pp 377-383 (14 Oct 1966).

Observations of the resonance spectrum at X-band frequencies for the applied field range 0 to 12 kOe are presented.

15. Collins, M. F. and Nathans, R.

Some Measurements of Exchange Energies by Paramagnetic Neutron Inelastic Scattering
Proc 10th Conf Magnetism and Magnetic Materials, Minneapolis, Minn., 1964, ed. by I. S. Jacobs and E. G. Spencer; J Appl Phys, Vol 36, No 3, Pt 2, pp 1092-1093 (Mar 1965).

Neutron paramagnetic scattering techniques have been applied to the measurement of exchange constants for a series of perovskite salts, $KMnF_3$, $NaMnF_3$, $LaCrO_3$, $LaMnO_3$, and $LaFeO_3$.

16. Cooke, A. H. and Edmonds, D. T.

Nuclear Magnetic Interaction in an Antiferromagnetic Crystal
Proc Phys Soc, Vol 71, Pt 3, pp 517-519 (Jun 1958).

The measurement of the specific heat anomaly at the Néel temperature gave a value for the hyperfine coupling constant in MnF_2 in good agreement with previous determinations by other methods.

17. Cooper, M. J. and Nathans, R.

Critical Magnetic Scattering from $KMnF_3$
Proc 11th Ann Conf Magnetism and Magnetic Materials, San Francisco, Calif., 1965, ed. by E. G. Spencer and J. S. Kouvel; J Appl Phys, Vol 37, No 3, pp 1041-1047 (1 Mar 1966).

Magnetic scattering experiments on $KMnF_3$ are described.

18. Deenadas, D., Keer, H. V., Gopala Rao, R. V. and Biswas, A. B.

Heat Capacity of Potassium Manganese Trifluoride
British J Appl Phys, Vol 17, No 11, pp 1401-1404 (Nov 1966).

The heat capacity of $KMnF_3$ has been measured in the temperature range 80°K to 300°K.

19. DeGennes, P. G.

Dynamic Effects in the Nuclear Resonance of Magnetic Materials (in French)
"Magnetic and Electric Resonance and Relaxation," Proc 11th Colloq AMPÈRE (Atomes Mol. Études Radio Elec.), Eindhoven, 1962, ed. by J. Smidt, North-Holland Publ. Co., Amsterdam, pp 88-95 (1963).

The nuclear spin-wave spectrum produced by the Suh-Nakamura indirect interaction is discussed.

20. Denison, A. B., James, L. W., Currin, J. D., Tanttila, W. H. and Mahler, R. J.

Ultrasonically Induced Nuclear Spin Transitions in Antiferromagnetic $KMnF_3$
Phys Rev Lett, Vol 12, No 10, pp 244-245 (9 Mar 1964).

A technique for producing nuclear spin transitions of F^{19} nuclei in $KMnF_3$ single crystals via ultrasonic modulation is described.

21. Dietz, R. E., Johnson, L. F. and Guggenheim, H. J.

Fluorescence from Magnetic Crystals
"Physics of Quantum Electronics, Conference Proceedings," ed. by P. L. Kelley, B. Lax and P. E. Tannenwald, McGraw-Hill Book Co., New York, N. Y., pp 361-369 (1966).

Near-infrared fluorescence and absorption have been investigated for Ni in $KMnF_3$.

22. Eastman, D. E.

Magneto-Elastic Coupling in $RbMnF_3$
Phys Rev, Vol 156, No 2, pp 645-654 (10 Apr 1967).

Magnetoelastic coupling effects have been studied by observing shifts in AFMR frequency and changes in AFMR line shape with the application of axial stress.

23. Eastman, D. E., Joenk, R. J. and Teaney, D. T.

Antiferromagnetic Resonance in $RbMnF_3$ under Axial Stress
Phys Rev Lett, Vol 17, No 6, pp 300-302 (8 Aug 1966).

Magnetoelastic constants of antiferromagnetic $RbMnF_3$ were determined at 4.2°K.

24. Eastman, D. E. and Shafer, M. W.

Antiferromagnetic Resonance in Cubic $TlMnF_3$
J Appl Phys, Vol 38, No 3, pp 1274-1276 (1 Mar 1967).

Antiferromagnetic resonance studies at 25 GHz showed $TlMnF_3$ to be an undistorted cubic antiferromagnet at 4.2°K with $\langle 111 \rangle$ easy axes.

25. Eastman, D. E., Shafer, M. W. and Figat, R. A.

Cobalt-Doped $TlMnF_3$, a Zero Anisotropy Cubic Antiferromagnet
J Appl Phys, Vol 38, No 13, pp 5209-5211 (Dec 1967).

Single crystals of cobalt-doped thallium manganese fluoride ($TlMn_{1-x}Co_xF_3$) have been studied by AFMR for cobalt concentrations of $0 \leqslant x \leqslant 0.001$. Comparison with AFMR of undoped $TlMnF_3$ and $RbMnF_3$ is made.

26. Egashira, K. and Hirakawa, K.

Observation of the Hyperfine Interaction Constants in $KMnF_3$
J Phys Soc Japan, Vol 22, No 1, p 344 (Jan 1967).

The hyperfine constant is obtained from NMR experiments on the F^{19} nucleus.

27. Elliott, R. J., Thorpe, M. F., Imbusch, G. F., Loudon, R. and Parkinson, J. B.

Magnon-Magnon and Exciton-Magnon Interaction Effects on Antiferromagnetic Spectra
Phys Rev Lett, Vol 21, No 3, pp 147-150 (15 Jul 1968).

Green's function methods have been used to calculate the effect of magnon-magnon and exciton-magnon interactions on the sidebands in $RbMnF_3$.

28. Eremenko, V. V., Popkov, Yu. A., Novikov, V. P. and Belyaeva, A. I.

Characteristics of Exciton-Magnon Interaction in Antiferromagnetic Crystals with a Perovskite Structure
Zhur Eksper Teor Fiz, Vol 52, No 2, pp 454-462 (Feb 1967); Engl. transl. in Soviet Phys – JETP, Vol 25, No 2, pp 297-302 (Jul 1967).

The optical absorption spectra of $RbMnF_3$ and $KMnF_3$ are studied in the $^6A_{1g}(^6S) \rightarrow {}^4E_g(^4G)$ transition range in the Mn^{2+} ion.

29. Farztdinov, M. M.

Domains and S-Domain Boundaries in Antiferromagnetic Compounds
Fiz Metal Metalloved, Vol 19, No 3, pp 321-332 (1965); Engl. transl. in Phys Met Metallog, Vol 19, No 3, pp 1-12 (1965).

The possible domains and S-domain boundaries were investigated in antiferromagnetic compounds of the NiO type, and also uniaxial (Cr_2O_3, MnF_2) and orthorhombic ($CuCl_2 \cdot 2H_2O$).

30. Ferguson, J., Guggenheim, H. J. and Tanabe, Y.

Absorption of Light by Pairs of Exchange-Coupled Manganese and Nickel Ions in Cubic Perovskite Fluorides
J Chem Phys, Vol 45, No 4, pp 1134-1142 (15 Aug 1966).

The absorption of light by exchange-coupled pairs of Mn and Ni ions in $KZnF_3$ is reported. Corresponding effects of exchange interaction have also been observed in the spectra of $KMn_xNi_{1-x}F_3$ crystals.

31. Ferguson, J., Guggenheim, H. J. and Tanabe, Y.

Absorption of Light by Pairs of Like and Unlike Transition-Metal Ions
Phys Rev Lett, Vol 14, No 18, pp 737-738 (3 May 1965).

Absorption of light by pairs of like and unlike transition-metal ions is described. Absorption by pairs of unlike ions is possible, and in all cases studied, the intensity of absorption is greater than for like ion pairs.

32. Ferguson, J., Guggenheim, H. J. and Tanabe, Y.

The Effects of Exchange Interactions in the Spectra of Octahedral Manganese. II. Compounds
J Phys Soc Japan, Vol 21, No 4, pp 692-704 (Apr 1966).

Experimental measurements of the Mn-pair spectrum of $KZnF_3$:Mn and the spectrum of $KMnF_3$ are reported.

33. Ferguson, J., Guggenheim, H. J. and Tanabe, Y.

Exchange Effects in the Electronic Absorption Spectrum of Mn (II) in Perovskite Fluorides
Proc 10th Conf Magnetism and Magnetic Materials, Minneapolis, Minn., 1964, ed. by I. S. Jacobs and E. G. Spencer; J Appl Phys, Vol 36, No 3, Pt 2, pp 1046-1047 (Mar 1965).

The anomalously intense bands in the spectrum of $KMnF_3$ are interpreted on the basis of pure electronic transitions involving more than one ion.

34. Fleury, P. A.

Evidence for Magnon-Magnon Interactions in $RbMnF_3$
Phys Rev Lett, Vol 21, No 3, pp 151-153 (15 Jul 1968).

Light scattering from two-magnon excitations in $RbMnF_3$ has been detected. The experiments confirm the importance of magnon-magnon interactions.

35. Freeman, A. J. and Watson, R. E.

Origin of the F^{19} Hyperfine Structure in Transition Element Fluorides
Phys Rev Lett, Vol 6, No 7, pp 343-345 (1 Apr 1961).

The unpairing of the 1s electrons gives an appreciable contribution to the isotropic part of the hyperfine structure. This is illustrated with use of $KMnF_3$ as an example.

36. Freiser, M. J., Joenk, R. J., Seiden, P. E. and Teaney, D. T.

Magnetic Resonance Studies of the Cubic Antiferromagnet $RbMnF_3$
Proc Int Conf Magnetism, Nottingham, 1964, publ. by Institute of Physics and the Physical Society, London, pp 432-436 (1965).

The properties of the cubic antiferromagnet $RbMnF_3$ were studied by AFMR and Mn^{55} NMR.

37. Freiser, M. J., Seiden, P. E. and Teaney, D. T.

Field-Independent Longitudinal Antiferromagnetic Resonance
Phys Rev Lett, Vol 10, No 7, pp 293-294 (1 Apr 1963).

The field-independent AFMR mode for the flopped state was studied as a function of frequency and temperature.

38. Golding, B.

Ultrasonic Propagation in $RbMnF_3$ near the Magnetic Critical Point
Phys Rev Lett, Vol 20, No 1, pp 5-7 (1 Jan 1968).

Measurements of the ultrasonic attenuation and velocity near the magnetic critical point have been performed at UHF frequencies.

39. Gondaira, K.

Covalency Effects in $KMnF_3$
J Phys Soc Japan, Vol 21, No 5, pp 933-944 (May 1966).

The covalency parameters between Mn 3d orbitals and the neighboring F 2s, 2p orbitals in $KMnF_3$ are calculated by means of the molecular orbital method.

40. Gondaira, K. and Tanabe, Y.

A Note on the Theory of Superexchange Interaction
J Phys Soc Japan, Vol 21, No 8, pp 1527-1548 (Aug 1966).

Expressions are derived for the coupling constant in the interaction between a paramagnetic ion pair and an electric field. $KMnF_3$ is used as an example.

41. Gorodetsky, G.

Semiempirical Expression for the Paramagnetic Susceptibility of $LuFeO_3$ and $KMnF_3$ by the Padé Approximant
Solid State Commun, Vol 6, No 3, pp 159-162 (Mar 1968).

The theoretical susceptibility, based on the use of a Padé approximation, gives better fit to the experimental data in the region $(T/T_c) < 2$ than the expression obtained by using a high-temperature series expansion.

42. Hall, T. P. P., Hayes, W. and Williams, F. I. B.

Paramagnetic Resonance of Manganese
Proc Phys Soc, Vol 78, Pt 5, pp 883-894 (Nov 1961).

The paramagnetic resonance spectrum of bivalent Mn was studied in the crystals CdF_2, $KMgF_3$, and CdTe. Comparison is drawn with the spectrum of $KMnF_3$.

43. Hashimoto, T.

Magnetic Properties of the Solid Solutions between $KMnF_3$, $KCoF_3$, and $KNiF_3$
J Phys Soc Japan, Vol 18, No 8, pp 1140-1147 (Aug 1963).

The magnetic susceptibilities of $KniF_3$ and the solid solutions between $KMnF_3$, $KCoF_3$, and $KNiF_3$ have been measured in the temperature range between 80°K and 850°K.

44. Heeger, A. J.

Spin-Wave Instability and Premature Saturation in Antiferromagnetic Resonance
Phys Rev, Vol 131, No 2, pp 608-616 (15 Jul 1963).

Experimental evidence for the existence of spin-wave instability in the canted antiferromagnet $KMnF_3$ is presented and discussed.

45. Heeger, A. J., Beckman, O. and Portis, A. M.

Magnetic Properties of $KMnF_3$. II. Weak Ferromagnetism
Phys Rev, Vol 123, No 5, pp 1652-1660 (1 Sep 1961).

The static magnetic properties of single-crystal $KMnF_3$ were studied by magnetic torsion measurements.

46. Heeger, A. J. and Pincus, P.

Spin-Wave Instability and Premature Saturation in Antiferromagnetic Resonance
Phys Rev Lett, Vol 10, No 2, pp 53-55 (15 Jan 1963).

Premature saturation and spin-wave instability were observed in $KMnF_3$.

47. Heeger, A. J., Portis, A. M., Teaney, D. T. and Witt, G.

Double Resonance and Nuclear Cooling in an Antiferromagnet
Phys Rev Lett, Vol 7, No 8, pp 307-309 (15 Oct 1961).

Electron-nuclear double resonance was observed in $KMnF_3$. Measurements of the saturation decay yielded a value of 50 msec for T_1.

48. Heeger, A. J., Portis, A. M. and Witt, G.

Relaxation of Mn^{55} Nuclear Magnetization in Antiferromagnetic $KMnF_3$
Bull Amer Phys Soc, Ser 2, Vol 7, No 1, p 54 (24 Jan 1962).

Observations of the nuclear resonance of Mn^{55} in antiferromagnetic $KMnF_3$ by the double resonance technique are discussed.

49. Heeger, A. J., Portis, A. M. and Witt, G.

Nuclear Antiferromagnetic Double Resonance
"Magnetic and Electric Resonance and Relaxation," Proc 11th Colloq AMPÈRE (Atomes Mol. Études Radio Elec.), Eindhoven, 1962, ed. by J. Smidt, North-Holland Publ. Co., Amsterdam, pp 694-698 (1963).

This technique was applied to demonstrate the dependence of the Mn^{55} nuclear resonance frequency in $KMnF_3$ on nuclear magnetization.

50. Heeger, A. J. and Teaney, D. T.

Mn^{55} Nuclear Magnetic Resonance in Antiferromagnetic $RbMnF_3$
Proc 9th Conf Magnetism and Magnetic Materials, Atlantic City, N. J., 1963, ed. by J. A. Osborn; J Appl Phys, Vol 35, No 3, Pt 2, pp 846-847 (Mar 1964).

The observation and study of the Mn^{55} NMR in antiferromagnetic $RbMnF_3$ at low temperatures are reported.

51. Hinderks, L. W. and Richards, P. M.

Excitation of Nuclear and Electronic Spin Waves in $RbMnF_3$ by Parallel Pumping
J Appl Phys, Vol 39, No 2, Pt 1, pp 824-825 (1 Feb 1968).

Observation of the simultaneous excitation of nuclear and electronic spin waves by parallel pumping is reported. From threshold fields, which are about 1.2 Oe minimum, it is calculated that at 4.2°K, $\eta K^n \eta K^e = 6.1 \times 10^{10}$ sec^{-2} for $K \rightarrow 0$, and 9.5×10^{10} sec^{-2} for $K = 1.05 \times 10^5$ cm^{-1}.

52. Hirakawa, K., Hirakawa, K. and Hashimoto, T.

Magnetic Properties of Potassium Iron Group Fluorides KMF_3
J Phys Soc Japan, Vol 15, No 11, pp 2063-2068 (Nov 1960).

The susceptibility of $KMnF_3$, in particular, was measured as a function of temperature.

53. Holloway, W. W., Jr. and Kestigian, M.

Effect of Magnetic Ordering on the Fluorescence of MnF_2
Phys Rev Lett, Vol 13, No 7, pp 235-237 (17 Aug 1964).

Measurements were made of the wavelength, the relative intensity, and the lifetime of fluorescence in $RbMnF_3$, $CsMnF_3$, etc.

54. Holloway, W. W., Jr. and Kestigian, M.

Temperature Dependence of the $^3A_2 \rightarrow {}^3T_1$ Absorption Band Peak of the Ni^{2+} Ion in Nickel and Manganese Salts
Phys Rev Lett, Vol 15, No 1, pp 17-19 (5 Jul 1965).

The effect of magnetic interaction on the temperature dependence of the $^3A_2 \rightarrow {}^3T_1$ absorption band peak of the Ni^{2+} ion in $RbMnF_3$ is discussed with reference to $RbMnF_3$ and other compounds.

55. Holloway, W. W., Jr., Kestigian, M., Newman, R. and Prohofsky, E. W.

Anomalous Shifts in the Fluorescence of MnF_2 and $KMnF_3$
Phys Rev Lett, Vol 11, No 2, pp 82-84 (15 Jul 1963).

Large temperature-dependent changes in the fluorescence of MnF_2 and $KMnF_3$ were observed.

56. Holloway, W. W., Jr., Prohofsky, E. W. and Kestigian, M.

Magnetic Ordering and the Fluorescence of Concentrated Mn Systems
Phys Rev, Vol 139, No 3A, pp A954-A961 (2 Aug 1965).

The wavelength, lifetime, and relative intensity of the fluorescences of crystal samples of MnF_2 and the alkali Mn trifluorides were measured as functions of temperature above 21°K.

57. Horai, K. and Saiki, K.

Electron Spin Resonance of $(KMnF_3)_x(KMgF_3)_{1-x}$
J Phys Soc Japan, Vol 21, No 2, p 397 (Feb 1966).

The transition temperature at which the ESR field starts to shift from the room-temperature value has been measured for concentration x between 0.1 and 1.0.

58. Hubbard, J., Rimmer, D. E. and Hopgood, F. R. A.

Weak Covalency in Transition Metal Salts
Proc Phys Soc, Vol 88, Pt 1, No 559, pp 13-36 (May 1966).

A theory of weak covalency effects in transition-metal salts based upon a configuration-interaction approach is discussed. The method is applied to $KMnF_3$, etc.

59. Imbusch, G. F. and Guggenheim, H. J.

Fine Structure in the ${}^6A_1 \rightarrow {}^4T_1$ (${}^4G$) Absorption Transition in $RbMnF_3$
Phys Lett, Vol 26A, No 12, pp 625-626 (6 May 1968).

Two sharp magnetic dipole, no-phonon, no-magnon lines are observed in absorption in $RbMnF_3$ along with a suggested magnon sideband.

60. Ince, W. J.

Antiferromagnetic Resonance in $RbMnF_3$ below the Spin-Flop Transition
J Appl Phys, Vol 37, No 3, pp 1132-1133 (1 Mar 1966).

This paper reports an investigation of resonance for the low-field region 0 kOe to 5 kOe.

61. Johnson, L. F., Dietz, R. E. and Guggenheim, H. J.

Exchange Splitting of the Ground State of Ni^{2+} Ions in Antiferromagnetic MnF_2, $KMnF_3$, and $RbMnF_3$.
Phys Rev Lett, Vol 17, No 1, pp 13-15 (4 Jul 1966).

The splittings of some of the sidebands agree with the zone-boundary magnon frequencies determined by neutron scattering.

62. Johnson, L. F., Dietz, R. E. and Guggenheim, H. J.

Optical Studies of Ni^{2+} Ions in MnF_2 and $KMnF_3$
Bull Amer Phys Soc, Vol 10, Ser 2, No 8, p 1193 (1965).

This study concerns principally the ${}^3A_2$ (ground-state) $\rightarrow {}^3T_2$ (first excited state) transition.

63. Jones, E. D. and Jefferts, K. B.

Zero-Field Manganese Nuclear Magnetic Resonance in Antiferromagnetic Manganese Fluoride
Phys Rev, Vol 135, No 5A, pp A1277-A1280 (31 Aug 1964).

The extrapolated Mn^{55} NMR frequency at 0°K is found to be ν_0^{55} = 671.4 ± 0.2 MHz.

64. Joseph, R. I.

Theory of High-Temperature Susceptibility of Heisenberg Ferromagnets Having Nearest-Neighbor Bilinear and Biquadratic Exchange Interactions
Phys Rev, Vol 138, No 5A, pp A1441-A1444 (31 May 1965).

The high-temperature susceptibility series is derived for the nearest-neighbor Heisenberg ferromagnet when nearest-neighbor biquadratic exchange is included. $KMnF_3$ is chosen as an example.

65. Kedzie, R. W., Shane, J. R. and Kestigian, M.

Spin-Flop AFMR in an Oriented $CsMnCl_3$ Single Crystal
Bull Amer Phys Soc, Vol 10, Ser 2, No 3, p 315 (1965).

Antiferromagnetic resonances have been observed at low temperatures at X- and K-band frequencies in an oriented single crystal of $CsMnCl_3$ ($T_N = 69\,°K$).

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Resonance Observation of Antiferromagnetic Ordering in $RbMnCl_3$, $CsMnCl_3$, and $KMnCl_3$
Proc 10th Conf Magnetism and Magnetic Materials, Minneapolis, Minn., 1964, ed. by I. S. Jacobs and E. G. Spencer; J Appl Phys, Vol 36, No 3, Pt 2, pp 1195-1196 (Mar 1965).

Paramagnetic and antiferromagnetic resonances were observed as functions of temperature in $KMnCl_3$, $CsMnCl_3$, and $RbMnCl_3$ at 9.5 GHz and 25 GHz.

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Magnetoresonance Faraday Effect in the Antiferromagnets MnF_2 and $RbMnF_3$
Fiz Tverd Tela, Vol 9, No 6, pp 1655-1659 (Jun 1967); Engl. transl. in Soviet Phys – Solid State, Vol 9, No 6, pp 1302-1305 (Dec 1967).

The Faraday effect in MnF_2 and $RbMnF_3$ was measured at several wavelengths in the visible part of the spectrum in a magnetic field up to 150 kOe, over the temperature range 20°K to 150°K.

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Magnetic Properties of the Hexagonal Antiferromagnet $CsMnF_3$
Phys Rev, Vol 132, No 1, pp 144-163 (1 Oct 1963).

The magnetic properties of the hexagonal antiferromagnet $CsMnF_3$ were investigated by magnetic susceptibility, torsion, ENDOR and electron resonance.

69. Lvov, V. S. and Petrov, M. P.

The Distribution of Spin Density in Paramagnetic Perovskite Crystals
Phys Stat Sol, Vol 13, No 2, pp K65-K68 (1 Feb 1966).

A tight-binding calculation has been made. It explains the observed dependence of the spin density on the nonmagnetic nucleus (Na^+, Rb^+ . . .) on the type of paramagnetic ion (Mn^{2+}, Ni^{2+} . . .).

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The Preparation and Magnetic Properties of Some Complex Fluorides Having the Perovskite Structure
J Chem Soc, Pt 2, No 281, pp 1490-1500 (1963).

The magnetic properties of compounds of the type $KM^{II}F_3$ (M^{II} = Mn, Fe, Co, Ni, Cu, and Zn) have been studied in the temperature range 80°K to 300°K. The manganese compound shows evidence of antiferromagnetism, with a Néel point below 80°K.

71. Mahler, R. J.

Phonon Induced Nuclear Dipole Transitions
"Nuclear Magnetic Resonance and Relaxation in Solids," Proc 13th Colloq AMPÈRE (Atomes Mol. Études Radio Elec.), Leuven, 1964, ed. by L. Van Gerven, North-Holland Publ. Co., Amsterdam, pp 202-209 (1964).

This paper outlines the theory of the interaction between the nuclear spin system and the lattice. Strong interaction was detected experimentally with $KMnF_3$ at 4.2°K.

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Observation of Two Intrinsic Nuclear Relaxation Rates in Antiferromagnetic $KMnF_3$
Phys Rev Lett, Vol 19, No 2, pp 85-87 (10 Jul 1967).

Measurement of nuclear spin-lattice relaxation rates of the F^{19} nuclei at two nonequivalent sites in $KMnF_3$ were made with a spin-echo technique.

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Peculiarities of the $RbMnF_3$:Nd^{3+} Crystals Decay Kinetics due to the Migration of Excitation Energy
Phys Stat Sol, Vol 22, No 1, pp 65-69 (1 Jul 1967).

The decay kinetics of Nd^{3+} luminescence in $RbMnF_3$:Nd^{3+} crystals were investigated experimentally.

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Magnetic Susceptibility of $RbMnF_3$
Bull Amer Phys Soc, Ser 2, Vol 8, No 7, p 55 (23 Jan 1963).

Results of the temperature and field dependence of the single-crystal susceptibility are presented.

75. Mehra, A. and Venkateswarlu, P.

Spin-Orbit Coupling Parameter for Mn^{2+} in $RbMnF_3$
Phys Rev Lett, Vol 19, No 4, pp 145-146 (24 Jul 1967).

Fine structure measurements of the $^6A_{1g}(S) \rightarrow {}^4T_{2g}(D)$ band in the absorption spectrum at 77°K were used to calculate the spin-orbit coupling parameter for Mn^{2+}.

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Absorption Spectrum of $RbMnF_3$
J Chem Phys, Vol 47, No 7, pp 2334-2342 (1 Oct 1967).

The absorption spectrum of $RbMnF_3$ has been studied at room temperature and at 77°K. The observed band positions are fitted with four parameters, B, C, Dq, and α, and the values of the parameters for the 77°K spectrum are 840 cm^{-1}, 3080 cm^{-1}, 780 cm^{-1}, and 76 cm^{-1}, respectively.

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Magnetic Field-Dependent Elastic Effects in the Cubic Antiferromagnet $RbMnF_3$
Solid State Commun, Vol 5, No 9, pp 735-738 (Sep 1967).

Measurements of velocity and attenuation of 10-MHz longitudinal acoustic waves in antiferromagnetic $RbMnF_3$ are reported.

78. Minkiewicz, V. J.

Nuclear Magnetic Resonance in Antiferromagnets
Ph. D. Dissertation, University of Calif., Berkeley (1965); University Microfilms Order No. 66-3659.

The Mn^{55} nuclear magnetic resonance in $KMnF_3$ has been observed in the frequency range between 580 MHz and 620 MHz.

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Direct Observation of Mn^{55} Nuclear Magnetic Resonance in Antiferromagnetic $CsMnF_3$
Phys Rev, Vol 143, No 2, pp 361-365 (11 Mar 1966).

The direct NMR of the Mn^{55} nuclei in the hexagonal antiferromagnet $CsMnF_3$ was observed in the frequency range 250 MHz to 650 MHz.

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Magnetic Properties of $KMnF_3$. III. Nuclear and Electron Spin Resonance
Phys Rev, Vol 143, No 2, pp 356-360 (11 Mar 1966).

Direct NMR experiments on Mn^{55} nuclei in $KMnF_3$ are reported.

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Effect of Zero-Point Spin Deviation on Energy Levels of Magnetic Impurities in Antiferromagnets
Phys Rev Lett, Vol 17, No 7, pp 392-395 (15 Aug 1966).

The infrared emission spectrum of Ni^{2+} as an impurity in MnF_2, $KMnF_3$, and $RbMnF_3$ was studied.

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Hyperfine Field and Ground-State Spin Alignment in Antiferromagnetic $KMnF_3$
Phys Rev, Vol 128, No 1, pp 80-81 (1 Oct 1962).

The specific heat of antiferromagnetic $KMnF_3$ at low temperatures was measured and the contribution of the Mn^{55} polarization determined.

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Observation of the Specific-Heat Anomaly Associated with the Antiferromagnetic Transition in $RbMnF_3$
Bull Amer Phys Soc, Ser 2, Vol 8, No 4, p 382 (1963).

The specific heat of a powder sample of $RbMnF_3$ has been measured from 25°K to 170°K.

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Specific Heats of Antiferromagnet $XMnF_3$ Compounds
Bull Amer Phys Soc, Vol 9, Ser 2, No 3, p 225 (1964).

The specific heats of five powder samples of $XMnF_3$ compounds (Na, K, NH_4, Rb, Cs) have been measured in the range of 15°K to 280°K.

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Indirect Coupling of Nuclear Spins in an Antiferromagnet with Particular Reference to MnF_2 at Very Low Temperatures
Prog Theor Phys, Vol 20, No 4, pp 542-552 (Oct 1958).

The linewidth of the F^{19} NMR in MnF_2 at 1.4°K is interpreted in terms of indirect coupling of nuclear spins through hyperfine interaction with spin waves.

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Direct Mn^{55} NMR Absorption in Antiferromagnetic $KMnF_3$
Proc 9th Conf Magnetism and Magnetic Materials, Atlantic City, N. J., 1963, ed. by J. A. Osborn; J Appl Phys, Vol 35, No 3, Pt 2, pp 842-843 (Mar 1964).

The direct observation of Mn^{55} NMR absorption in $KMnF_3$ is reported.

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Inelastic Magnetic Scattering from $RbMnF_3$ in the Neighborhood of Its Néel Point
J Appl Phys, Vol 39, No 2, Pt 2, pp 1237-1238 (1 Feb 1968).

A study of the inelastic neutron scattering in the vicinity of the Néel point reveals the presence of a diffusive-type peak, accompanied by spin-wave modes that persist above the transition temperature.

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Simultaneous Parallel Pumping of Nuclear and Electronic Spin Waves
Phys Rev, Vol 165, No 2, pp 735-750 (10 Jan 1968).

The possibility is investigated of joint excitation of nuclear and electronic magnons by parallel pumping in $RbMnF_3$.

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Antiferromagnetism in $KMnF_3$
J Phys Soc Japan, Vol 14, No 8, p 1115 (Aug 1959).

The susceptibility of $KMnF_3$ was measured as a function of temperature.

90. Okazaki, A. and Suemune, Y.

Electron Distribution in $KMnF_3$, $KFeF_3$, $KCoF_3$, and $KNiF_3$
J Phys Soc Japan, Vol 16, No 7, p 1474 (Jul 1961).

The electron distributions in $KMnF_3$, $KFeF_3$, $KCoF_3$, and $KNiF_3$, determined by x-ray analysis, are reported.

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Zero-Point Spin Deviation in Antiferromagnets
Phys Rev Lett, Vol 16, No 25, pp 1164-1169 (20 Jun 1966).

The discrepancies between theoretical and experimentally observed zero-point spin deviations in $CsMnF_3$, $KMnF_3$, etc. are discussed.

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Nuclear Magnetic Resonance in $RbMnF_3$
Bull Amer Phys Soc, Vol 10, Ser 2, No 3, p 315 (1965).

A NMR study of Rb^{88}, Rb^{87}, and F^{19} in paramagnetic $RbMnF_3$ is reported. This is the first report of measured shifts of the rubidium nuclear resonances of an alkali nucleus in paramagnetic XMF_3 perovskite compounds.

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Nuclear Magnetic Resonance in $RbMnF_3$
J Chem Phys, Vol 42, No 11, pp 3806-3808 (1 June 1965).

A NMR study of Rb^{85}, Rb^{87}, and F^{19} in paramagnetic $RbMnF_3$ is reported.

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Theory of the Magnetic Anisotropy in $KMnF_3$
Phys Rev, Vol 121, No 3, pp 695-702 (1 Feb 1961).

A theoretical calculation is given of the magnetic anisotropy in $KMnF_3$ at room temperature and in its distorted structures at lower temperatures.

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Infrared Studies of Some Perovskite Fluorides. I. Fundamental Lattice Vibrations
J Appl Phys, Vol 38, No 12, pp 4616-4624 (Nov 1967).

The reflectance spectra of the cubic fluoride perovskites $KMgF_3$, $KMnF_3$, $KCoF_3$, $KNiF_3$, $RbMnF_3$, and mixed crystals of $K(Mg_{0.8}:Ni_{0.2})F_3$ and $K(Mg_{0.5}:Ni_{0.5})F_3$ have been measured from 4000 cm^{-1} to 40 cm^{-1} at 300°K and 80°K.

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Nuclear Magnetic Resonance in $RbMnF_3$
Fiz Tverd Tela, Vol 7, No 12, pp 3689-3690 (Dec 1965); Engl. transl. in Soviet Phys – Solid State, Vol 7, No 12, pp 2984-2985 (Jun 1966).

F^{19} and Rb^{87} NMR have been observed in $RbMnF_3$.

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Magnetic Structure of Binary Fluorides Containing Mn^{2+}
J de Physique, Vol 25, No 5, pp 565-566 (May 1964) (In English).

Spin orderings of the compounds $XMnF_3$, where X was Na, Rb, Cs, and NH_4, were studied by neutron diffraction.

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Spin-Wave Dispersion in $KMnF_3$
J Appl Phys, Vol 37, No 3, pp 1054-1055 (1 Mar 1966).

The spin-wave dispersion curve of antiferromagnetic $KMnF_3$ at 4.2°K was measured by means of neutron inelastic scattering.

99. Pincus, P., DeGennes, P. G., Hartmann-Boutron, F. and Winter, J. M.

Dynamic Effects of the Suhl-Nakamura Interaction in Magnetic Materials
Proc 8th Symp Magnetism and Magnetic Materials, Pittsburgh, Penn., 1962, ed. by I. S. Jacobs; J Appl Phys, Vol 34, No 4, Pt 2, pp 1036-1037 (Apr 1963).

A discussion is given of nuclear spin waves and an attempt is made to explain the nonlinear effects observed in the NMR of $KMnF_3$.

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Suhl-Nakamura Interaction and Inhomogeneous Broadening
Phys Lett, Vol 27A, No 1, pp 54-55 (20 May 1968).

The effect of microscopic inhomogeneities on the Suhl-Nakamura indirect interaction between nuclear spins is shown to alter the NMR line shapes in the direction observed experimentally.

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Nuclear Relaxation in Magnetic Materials
Proc Intl Conf Magnetism and Crystallography, Kyoto, 1961, ed. by T. Nagamiya; J Phys Soc Japan, Vol 17, Suppl B-1, pp 81-87 (Mar 1962).

Studies of relaxation of nuclei in ferromagnetic and antiferromagnetic materials are reviewed.

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Nuclear Resonance in Magnetic Materials
Nuovo Cimento Suppl, Vol 4, No 3, pp 603-606 (1966).

The use of nuclear resonance in the study of magnetic materials is discussed.

103. Portis, A. M., Witt, G. L. and Heeger, A. J.

Excitation of Nuclear Magnetic Resonance Modes in Antiferromagnetic $KMnF_3$
Proc 8th Symp Magnetism and Magnetic Materials, Pittsburgh, Penn., 1962, ed. by I. S. Jacobs; J Appl Phys, Vol 34, No 4, Pt 2, pp 1052-1053 (Apr 1963).

The Mn^{55} nuclear resonance absorption in $KMnF_3$ was monitored through the observation of the AFMR at 4.2°K and below.

104. Prohofsky, E. W.

Magnetic Virtual Local Mode Condensation and Fluorescence Anomalies
Phys Rev Lett, Vol 14, No 9, pp 302-305 (1 Mar 1965).

This letter proposes a mechanism to explain the very abrupt increase in the frequency, intensity, and lifetime of fluorescent emission, with decreasing temperature, in antiferromagnetic Mn salts.

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Magnetic Ordering and Fluorescence in Manganese Salts
Proc 10th Conf Magnetism and Magnetic Materials, Minneapolis, Minn., 1964, ed. by I. S. Jacobs and E. G. Spencer; J Appl Phys, Vol 36, No 3, Pt 2, pp 1041-1042 (1965).

The effect of antiferromagnetic ordering on the fluorescence of several Mn salts was observed. At temperatures below the Néel temperature the fluorescence moves to higher frequencies.

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The Heat Capacities of Potassium Manganese Trifluoride
Proc Phys Soc, Vol 81, Pt 1, No 519, pp 191-192 (1 Jan 1963).

The results of measurements made using an isothermal calorimeter of the heat capacity over the range of temperature 78°K to 300°K are shown.

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Covalency Effects in Magnetic Salts by a Configurations Interaction Method
Proc Intl Conf Magnetism, Nottingham, 1964, publ. by Institute of Physics and the Physical Society, London, pp 337-341 (1965).

The configurations-interaction method of treating covalency has been used to calculate the fluorine spin density and cubic-crystal field parameter for $KNiF_3$ and $KMnF_3$.

108. Satya Murthy, N. S., Venkataraman, G., Usha Deniz, K., Dasannacharya, B. A. and Iyengar, P. K.

Neutron Scattering by Paramagnetics
"Inelastic Scattering of Neutrons," Proc Symp Inelastic Scattering of Neutrons, Bombay, 1964, International Atomic Energy Agency, Vienna, Vol 1, pp 433-442 (1965).

Neutron scattering characteristics of MnO and $KMnF_3$ are reported.

109. Seiden, P. E., Freiser, M. J. and Teaney, D. T.

Field-Independent Parallel Antiferromagnetic Resonance in $RbMnF_3$
Bull Amer Phys Soc, Ser 2, Vol 8, No 3, pp 213-214 (1963).

This paper reports the observation of a field-independent antiferromagnetic resonance mode.

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Nuclear Antiferromagnetic Double Resonance in $MnCO_3$
Proc 9th Conf Magnetism and Magnetic Materials, Atlantic City, N. J., 1963, ed. by J. A. Osborn; J Appl Phys, Vol 35, No 3, Pt 2, pp 848-849 (Mar 1964).

The AFMR resonance was investigated as a function of UHF pumping power. Results are compared to similar experiments by other workers on $KMnF_3$ and $CsMnF_3$.

111. Shulman, R. G. and Knox, K.

Nuclear Magnetic Resonance in $KMnF_3$
Phys Rev, Vol 119, No 1, pp 94-101 (1 Jul 1960).

The NMR of fluorine in $KMnF_3$ has been studied, and hyperfine interactions between the fluorine nucleus and the magnetic electrons measured.

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Spin-Wave Sideline in the Luminescence Spectra of Eu^{3+} Ion in $KMnF_3$
Phys Lett, Vol 26A, No 11, pp 533-534 (22 Apr 1968).

Spin-wave sidebands were observed in the luminescence spectra of Eu^{3+} doped in antiferromagnetic $KMnF_3$ crystals.

113. Simanek, E. and Tachiki, M.

A Note on the Theory of Covalency and Superexchange in Transition Metal Salts
Phys Lett, Vol 21, No 6, pp 625-626 (1 Jul 1966).

Reference is made to $KNiF_3$ and $KMnF_3$.

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X-Ray Investigation of Double Fluorides of Bivalent Manganese
Zhur Neorgan Khim, Vol 2, No 10, pp 2410-2415 (1957); Engl. transl. in J Inorgan. Chem USSR, Vol 2.

$NaMnF_3$, $KMnF_3$, NH_4MnF_3, $RbMnF_3$ and $CsMnF_3$ are studied by the powder x-ray method.

115. Stevenson, R.

Ultraviolet Absorption Spectra of MnF_2, $KMnF_3$, $RbMnF_3$, and $CsMnF_3$
AD 610 124, 20 pp (1964).

Absorption spectra in the 3000-Å to 4000-Å region are presented for MnF_2, $KMnF_3$, $RbMnF_3$, and $CsMnF_3$ at room temperature, liquid-air temperature, and liquid-helium temperature.

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Absorption Spectra of MnF_2, $KMnF_3$, $RbMnF_3$, and $CsMnF_3$
Canadian J Phys, Vol 43, No 10, pp 1732-1743 (Oct 1965).

Absorption spectra in the 3000-Å to 4000-Å region are presented for MnF_2, $KMnF_3$, $RbMnF_3$, and $CsMnF_3$ at room temperature, liquid-air temperature, and liquid-helium temperature.

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Absorption Spectra of MnF_2 and $CsMnF_3$
AD 641 917, 15 pp (1966).

Absorption spectra in the 3950-Å region of MnF_2 and $CsMnF_3$ at 4.2°K are presented.

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Compressions of $CoCl_2$, $FeCl_2$, $NiCl_2$, EuS, MnF_2, $RbMnF_3$, and NiF_2
Canadian J Phys, Vol 44, No 1, pp 281-283 (Jan 1966).

Compressibilities in the pressure range 0 atm to 10^4 atm have been measured at 100°K, 80°K, and 4.2°K.

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Fine Structure in the Absorption Spectra of $KMnF_3$ and $RbMnF_3$
Phys Rev, Vol 152, No 2, pp 531-535 (9 Dec 1966).

Experimental studies are presented of the absorption spectra in the 3900-Å region of $KMnF_3$ and $RbMnF_3$ at 4.2°K.

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Magnon Sidebands in $CsMnF_3$
Canadian J Phys, Vol 44, No 12, pp 3269-3270 (Dec 1966).

Magnon sidebands similar to those observed in MnF_2 have been observed in $CsMnF_3$.

121. Suemune, Y. and Ikawa, H.

Thermal Conductivity of $KMnF_3$, $KCoF_3$, $KNiF_3$, and $KZnF_3$ Single Crystals
J Phys Soc Japan, Vol 19, No 9, pp 1686-1690 (Sep 1964).

The thermal conductivities of single crystals of $KMnF_3$, $KCoF_3$, $KNiF_3$, and $KZnF_3$ were measured at 15°K to 300°K by the absolute longitudinal heat-flow method.

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Effective Nuclear Spin Interactions in Ferromagnets
Phys Rev, Vol 109, No 2, p 606 (15 Jan 1958).

This paper presents the first discussion of the so-called Suhl-Nakamura interaction.

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Nuclear Spin Interactions in Ferromagnetics and Antiferromagnets
J Phys Radium, Vol 20, No 2-3, pp 333-335 (Feb-Mar 1959) (In English).

The influence of the hyperfine coupling on relaxation times is discussed.

124. Teaney, D. T.

Anomalous Dynamical Properties of the "Ideal" Antiferromagnet $RbMnF_3$
Bull Amer Phys Soc, Ser 2, Vol 13, No 2, p 164 (1968).

Deviations from the ideal Heisenberg model for an antiferromagnet are discussed.

125. Teaney, D. T. and Freiser, M. J.

Antiferromagnetic Resonance in Cubic $RbMnF_3$
Proc 8th Symp Magnetism and Magnetic Materials, Pittsburgh, Penn., 1962, ed. by I. S. Jacobs; J Appl Phys, Vol 34, No 4, Pt 2, p 1036 (Apr 1963).

Observation of antiferromagnetic resonance in cubic $RbMnF_3$ is reported.

126. Teaney, D. T., Blackburn, J. S. and Stevenson, R. W. H.

Antiferromagnetic Resonance of Three $XMnF_3$ Single Crystals
Bull Amer Phys Soc, Ser 2, Vol 7, No 3, p 201 (23 Mar 1962).

Magnetic resonances in $RbMnF_3$, $NaMnF_3$, and $CsMnF_3$ were investigated as functions of temperature.

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Discovery of a Simple Cubic Antiferromagnet: Antiferromagnetic Resonance in $RbMnF_3$
Phys Rev Lett, Vol 9, No 5, pp 212-214 (1 Sep 1962).

Antiferromagnetic resonance in $RbMnF_3$ is reported; measurements were performed at a frequency of 23.285 GHz.

128. Teaney, D. T., Moruzzi, V. L. and Argyle, B. E.

Critical Point of the Cubic Antiferromagnetic $RbMnF_3$
Proc 11th Ann Conf Magnetism and Magnetic Materials, San Francisco, Calif., 1965, ed. by E. G. Spencer and J. S. Kouvel; J Appl Phys, Vol 37, No 3, pp 1122-1123 (1 Mar 1966).

The critical region of $RbMnF_3$ was studied by use of specific heat, x-ray, and strain-gage measurements.

129. Turov, E. A. and Kuleev, V. G.

Coupled Oscillations of Electronic and Nuclear Spins in Antiferromagnets
Zhur Eksper Teor Fiz, Vol 49, No 1, pp 248-256 (Jul 1965); Engl. transl. in Soviet Phys. – JETP, Vol 22, No 1, pp 176-181 (Jan 1966).

Coupled electron-nuclear spin resonance modes in antiferromagnets are analyzed.

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Nuclear Magnetoacoustic Resonance in Ferro- and Antiferromagnetics
Fiz Metal Metalloved, Vol 24, No 5, pp 769-781 (1967); Engl. transl. in preparation.

A theoretical discussion is given of the interactions of the nuclear spins with lattice oscillations, of effective fields, and of ultrasound absorption as studied via nuclear magnetoacoustic resonance.

131. Walker, M. B.

Exchange Interactions from Nuclear Magnetic Resonance Linewidths
Proc Phys Soc, Vol 87, Pt 1, No 555, pp 45-48 (1 Jan 1966).

The exchange interactions in $RbMnF_3$, and $KMnF_3$, and MnF_2 have been deduced from F^{19} NMR linewidth measurements.

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Nuclear Magnetic Resonance in $RbMnF_3$
Proc Phys Soc, Vol 87, Pt 1, No 555, pp 35-43 (1 Jan 1966).

The F^{19}, Rb^{85}, and Rb^{87} NMR's observed at room temperature in single crystals of $RbMnF_3$ are described.

133. Waring, R. K., Jr.

Magnetic Domains
Chapter 12 in "Magnetism and Magnetic Materials Digest," Vol 2, ed. by C. Warren Haas and H. S. Jarrett, pp 149-162, Academic Press, New York (1966).

Investigations of static domain patterns are reviewed.

134. Welsh, L. B.

Properties of the Mn^{55} Nuclear-Magnetic-Resonance Modes in $CsMnF_3$
Phys Rev, Vol 156, No 2, pp 370-382 (10 Apr 1967).

A new NMR mode of the Mn^{55} nuclei in the hexagonal antiferromagnet $CsMnF_3$ has been observed directly in the frequency range 673 MHz to 676 MHz.

135. Windsor, C. G.

Neutron Scattering from Paramagnetic $RbMnF_3$
Proc Phys Soc, Vol 89, Pt 4, No 566, pp 825-831 (1 Dec 1966).

The energy distribution of neutrons scattered from polycrystalline $RbMnF_3$ at room temperature ($T/T_N = 2.8$) has been measured using time-of-flight analysis.

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Spin Correlations in a Classical Heisenberg Paramagnet
Proc Phys Soc, Vol 91, Pt 2, pp 353-355 (Jun 1967).

The neutron scattering from a polycrystalline sample of $RbMnF_3$ is predicted and compared with experiment.

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Spin Waves in $RbMnF_3$
Proc Phys Soc, Vol 87, Pt 2, No 556, pp 501-504 (1 Feb 1966).

The spin-wave dispersion relations for the simple cubic antiferromagnet $RbMnF_3$ have been determined at 4.2°K by inelastic neutron scattering.

138. Witt, G. L.

Nuclear and Electronic Resonance Modes in Antiferromagnets
Ph. D. Dissertation, University of Calif., Berkeley (1964); University Microfilms Order No 64-13, 22.

Electron-nuclear double resonance has been observed in $KMnF_3$ and $CsMnF_3$.

139. Witt, G. L. and Portis, A. M.

Excitation of Coupled Nuclear Antiferromagnetic Resonance Modes
Phys Rev, Vol 136, No 5A, pp A1316-A1320 (30 Nov 1964).

The observation of ENDOR in $KMnF_3$ and $CsMnF_3$ is reported.

140. Witt, G. L. and Portis, A. M.

Nuclear Magnetic Resonance Modes in Magnetic Materials. II. Experiment
Phys Rev, Vol 135, No 6A, pp A1616-A1618 (14 Sep 1964).

Electron-nuclear double resonance in $KMnF_3$ is reported. Nuclear absorption was observed for a range of frequencies 570 MHz to 685 MHz.

141. Young, E. F. and Perry, C. H.

Infrared Studies of Some Perovskite Fluorides. II. Multiphonon Spectra
J Appl Phys, Vol 38, No 12, pp 4624-4628 (Nov 1967).

The transmission spectra of thin single-crystal samples of $KMgF_3$, $KMnF_3$, $KCoF_3$, $KNiF_3$, $KZnF_3$ and $K(Mg_{0.5}:Ni_{0.5})F_3$ have been investigated from 2.5μ to 400μ at 300°K and 85°K.

142. Zhogolev, D. A.

Shift of the NMR Frequencies in Paramagnetic $TlMnF_3$
Fiz Tverd Tela, Vol 8, No 9, pp 2798-2800 (Sep 1966); Engl. transl. in Soviet Phys – Solid State, Vol 8, No 9, pp 2237-2238 (Mar 1967).

The chemical shifts of Tl^{203}, Tl^{205}, and F^{19} in $TlMnF_3$ have been calculated.

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13. ABSTRACT

This bibliography lists and briefly annotates publications related to the double fluorides $XMnF_3$, where X is K, Rb or Cs. References are listed alphabetically by author, and there is a subject outline and index. The period covered by the search is 1957 to July 1968.

14. KEY WORDS

nuclear magnetic resonance	perovskites	$CsMnF_3$
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