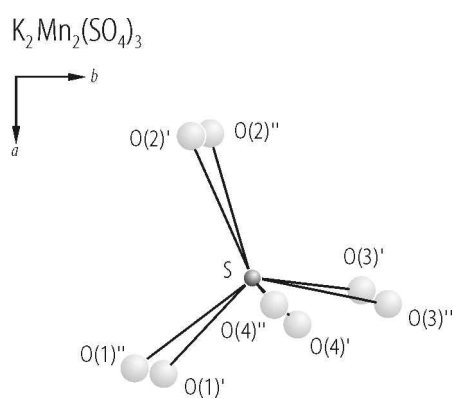
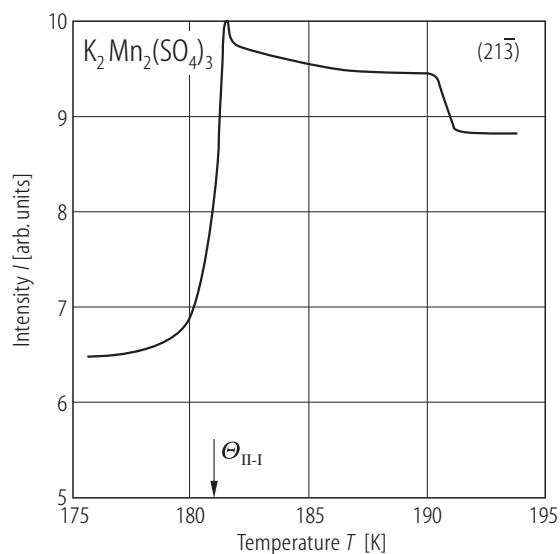


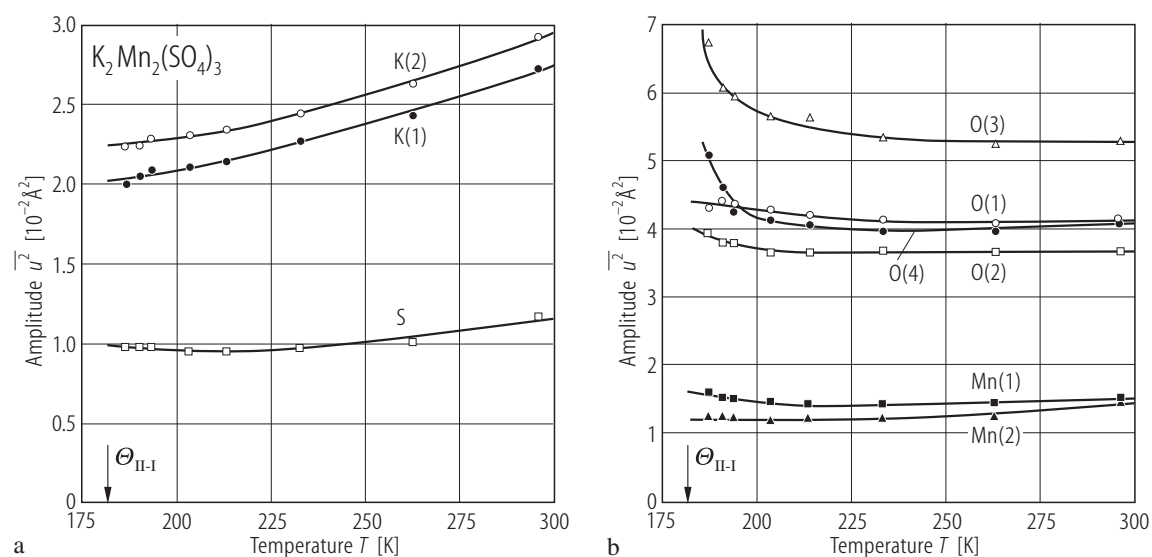
**Fig. 43A-8-004.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ . Structure of phase I [95Uke]. Projection along the  $c$  axis.



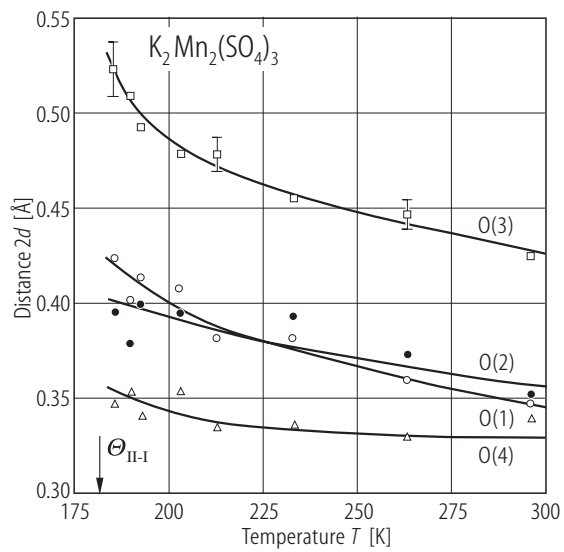
**Fig. 43A-8-005.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ . Structure of phase I [95Uke]. Two arrangements of the disordered  $\text{SO}_4$  ion.



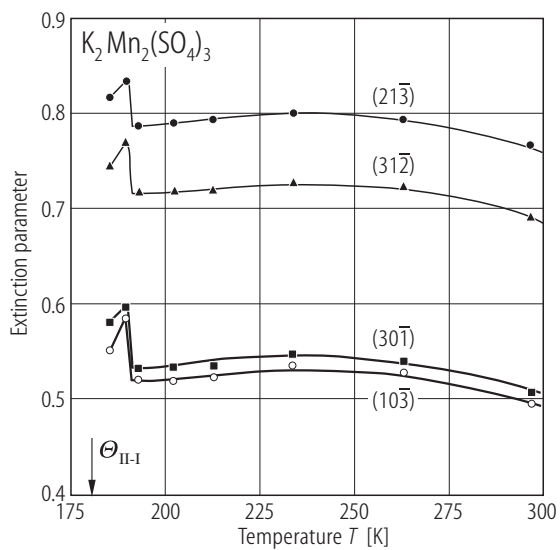
**Fig. 43A-8-006.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $I$  vs.  $T$  [92Ito].  $I$ : X-ray diffraction intensity at  $(21\bar{3})$ .



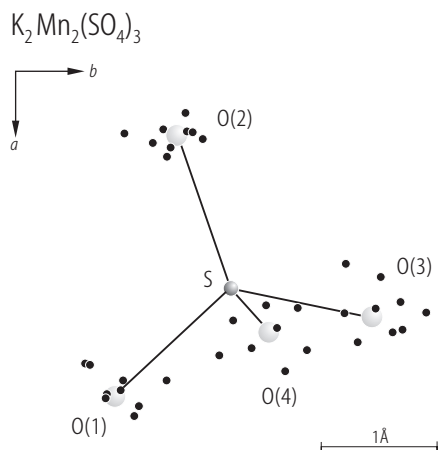
**Fig. 43A-8-007.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\overline{u^2}$  vs.  $T$  [95Uke].  $\overline{u^2}$ : mean-square thermal displacement.



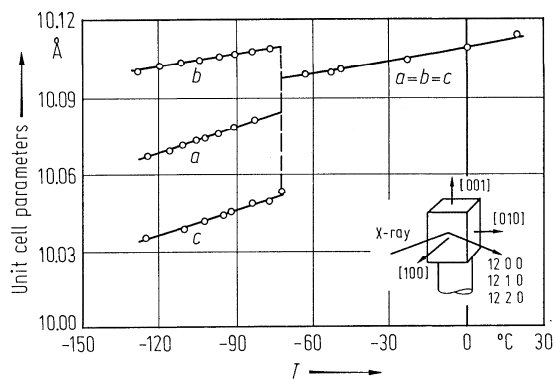
**Fig. 43A-8-008.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ . Structure of phase I [95Uke].  $2d$  vs.  $T$ .  $2d$ : distance between two equilibrium positions of the disordered oxygen atoms.



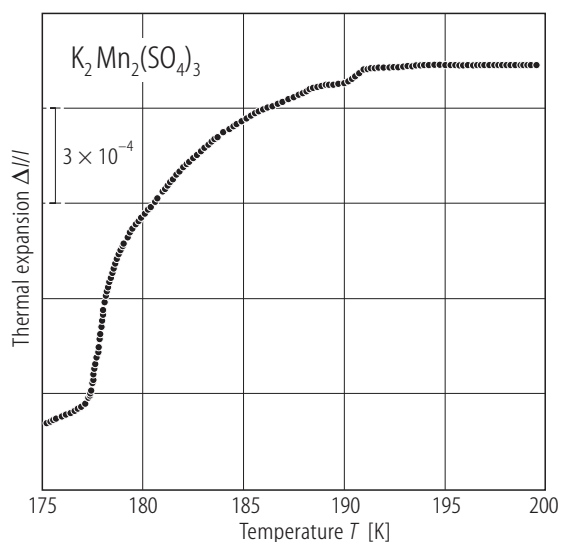
**Fig. 43A-8-009.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ . Extinction parameter vs.  $T$  [92Ito].



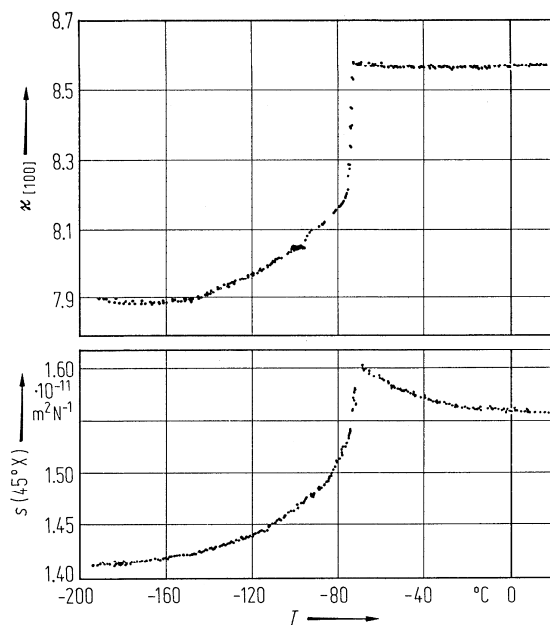
**Fig. 43A-8-010.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ . Multi-site model for  $\text{SO}_4$  groups [96Mor]. Disordered ion derived from 9-position model (186 K). Full circles stand for the positions of split O atoms. The average positions of the S and O atoms are depicted by shaded circles.



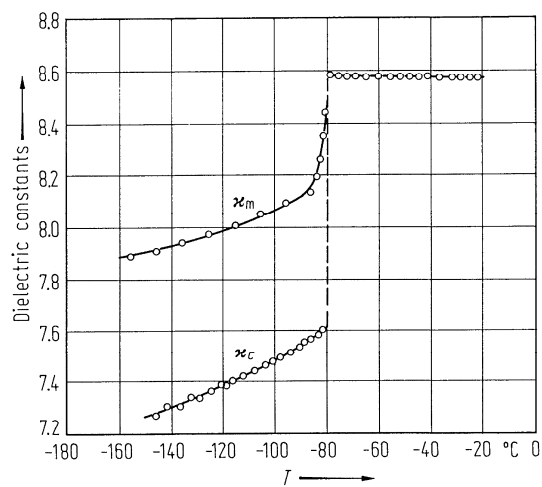
**Fig. 43A-8-011.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ . Unit cell parameters vs.  $T$  [78Hik].



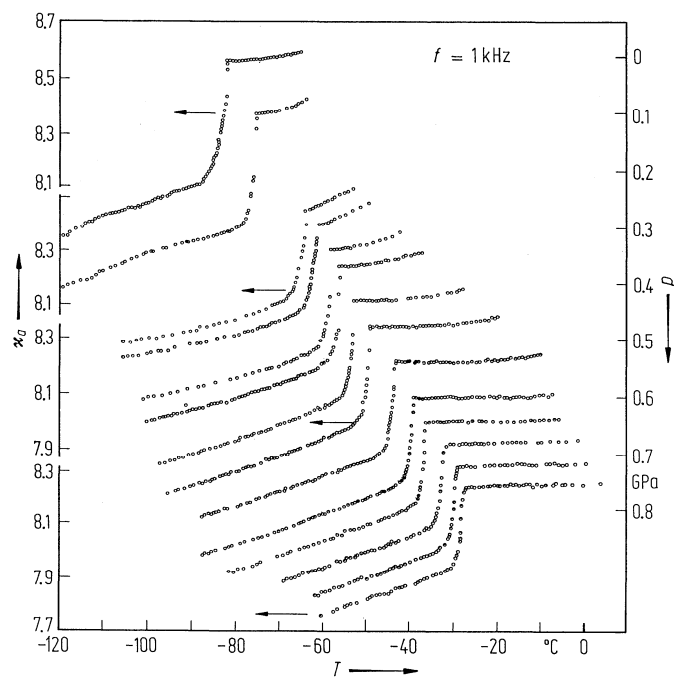
**Fig. 43A-8-012.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\Delta l/l$  vs.  $T$  [88Kah].  $\Delta l/l$ : fractional thermal expansion along the  $\langle 111 \rangle$  axis. Relative to the brass dilatometer cell.



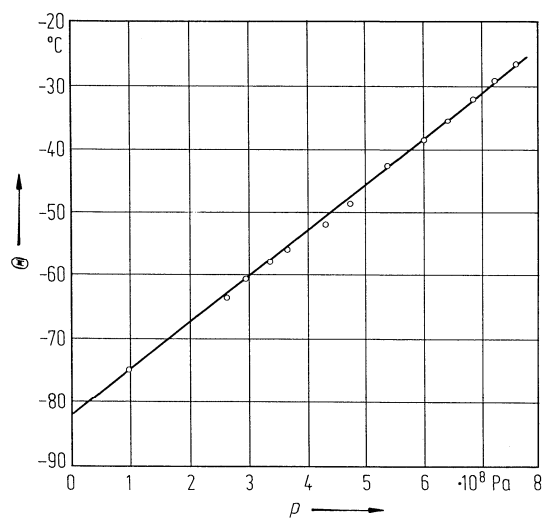
**Fig. 43A-8-013.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\kappa_{[100]}$ ,  $s(45^\circ X)$  vs.  $T$  [77Hik].  $s(45^\circ X)$ : elastic compliance of  $45^\circ X$ -cut bar.  $\kappa_{[100]}$  at  $f=1$  kHz.



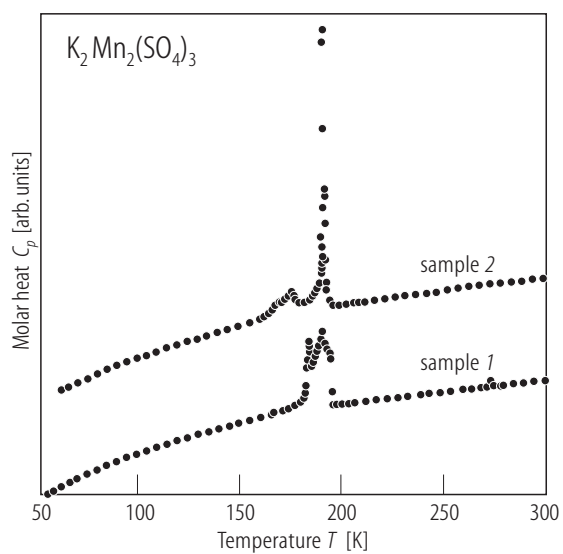
**Fig. 43A-8-014.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\kappa_c$ ,  $\kappa_m$  vs.  $T$  [78Yam].  $\kappa_m$ : dielectric constant measured on multidomain crystals.  $f=1$  kHz.



**Fig. 43A-8-015.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\kappa_a$  vs.  $T$  [80Hik]. Parameter:  $p$ . The pressure at the II–I transition can be read from the right-hand side ordinate. Only representative curves indicated by arrows correspond to  $\kappa_a$  scales (left-hand side ordinate).

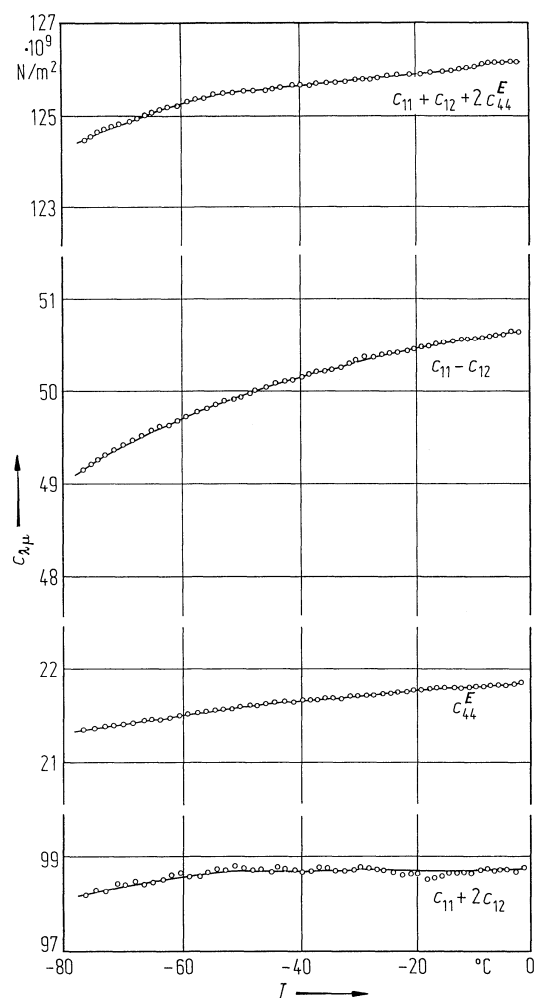


**Fig. 43A-8-016.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\Theta$  vs.  $p$  [80Hik].

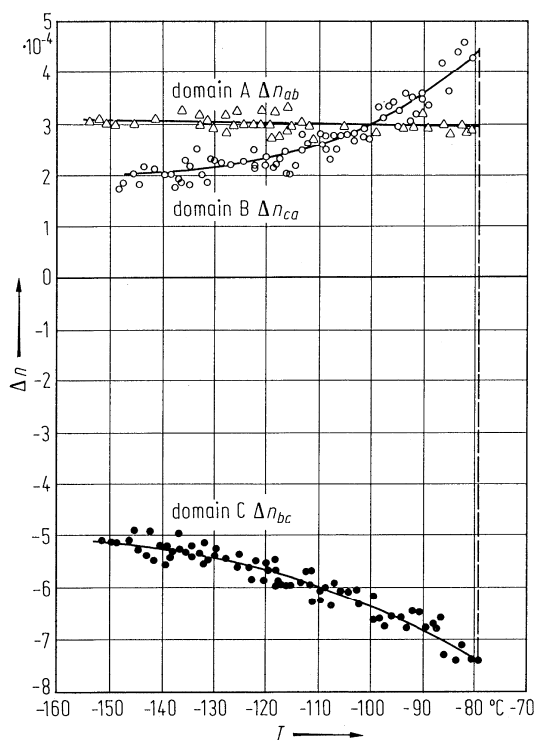


**Fig. 43A-8-017.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $C_p$  vs.  $T$  for different samples [89Boe].  $C_p$ : molar specific heat at constant pressure. The top curve for sample 2 is shifted by  $200 \text{ J K}^{-1} \text{mol}^{-1}$  from that for sample 1.

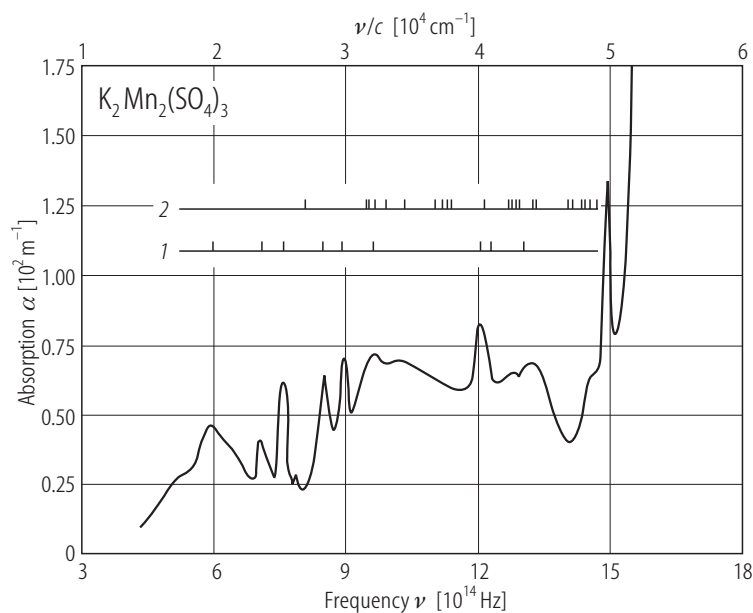




**Fig. 43A-8-018.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ . Elastic stiffnesses vs.  $T$  [79Mae].  $f = 10$  MHz.



**Fig. 43A-8-019.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\Delta n$  vs.  $T$  [78Yam]. Three types of domains (A, B, C) were observed in the low temperature phase according to the magnitude of birefringence.  $\Delta n_{ab} = n_b - n_a$ ,  $\Delta n_{ca} = n_a - n_c$ ,  $\Delta n_{bc} = n_c - n_b$ .



**Fig. 43A-8-020.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\alpha$  vs.  $\nu$  [89Bre].  $\alpha$ : optional absorption coefficient. 1 and 2 indicate calculated frequencies for  ${}^6\text{A}_1 \rightarrow {}^4\Gamma$  and  ${}^6\text{A}_1 \rightarrow {}^2\Gamma$ , respectively.

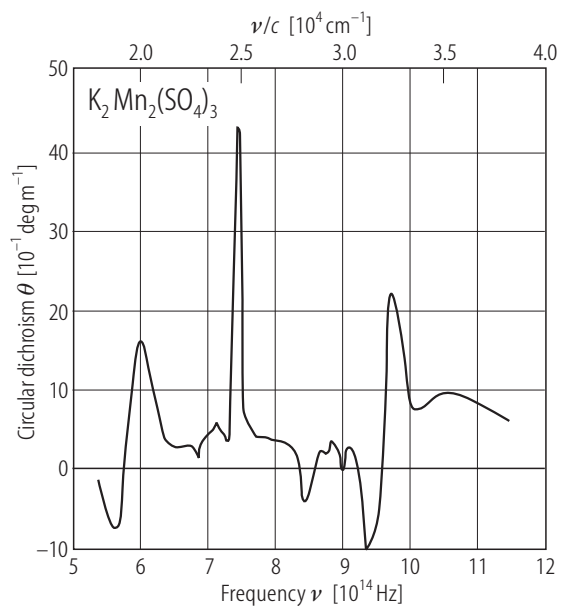


Fig. 43A-8-021.  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\theta$  vs.  $\nu$  [89Bre].  $\theta$ : circular dichroism.

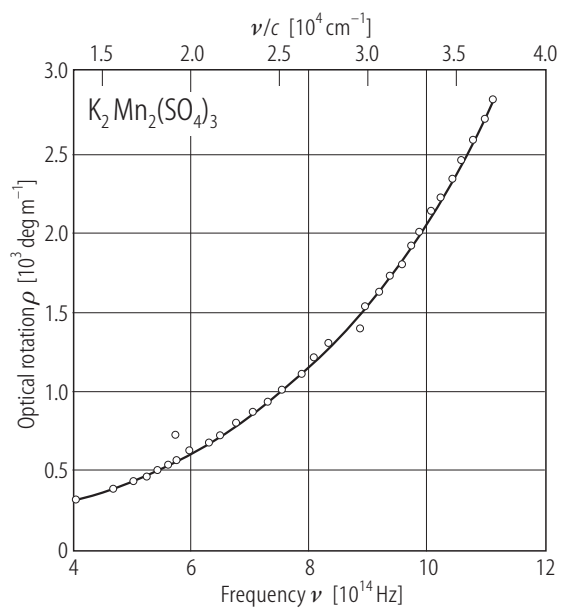
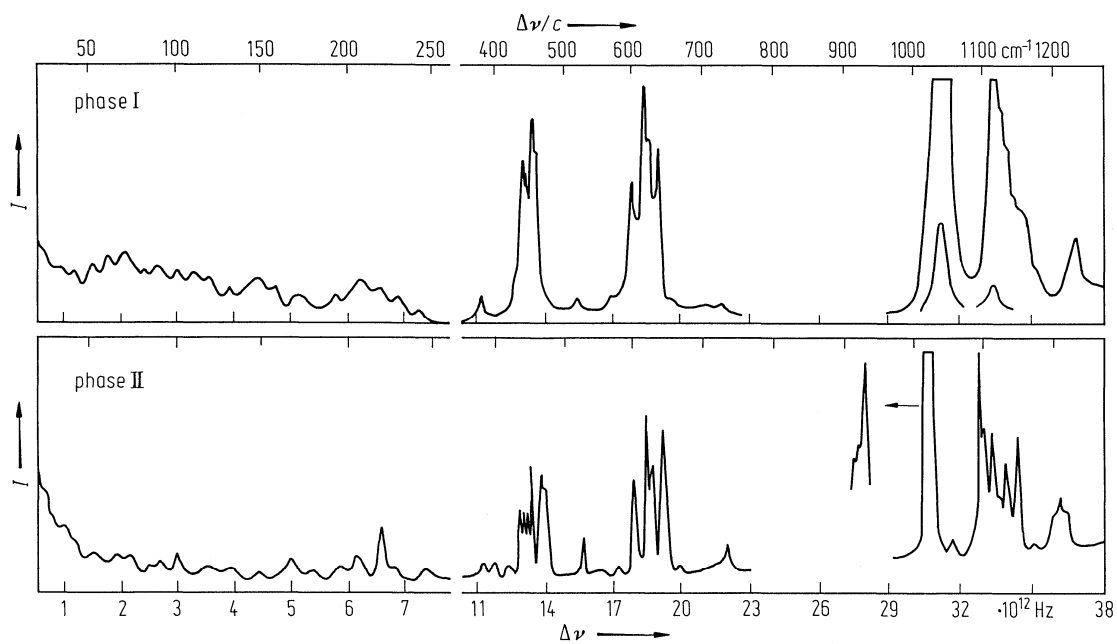
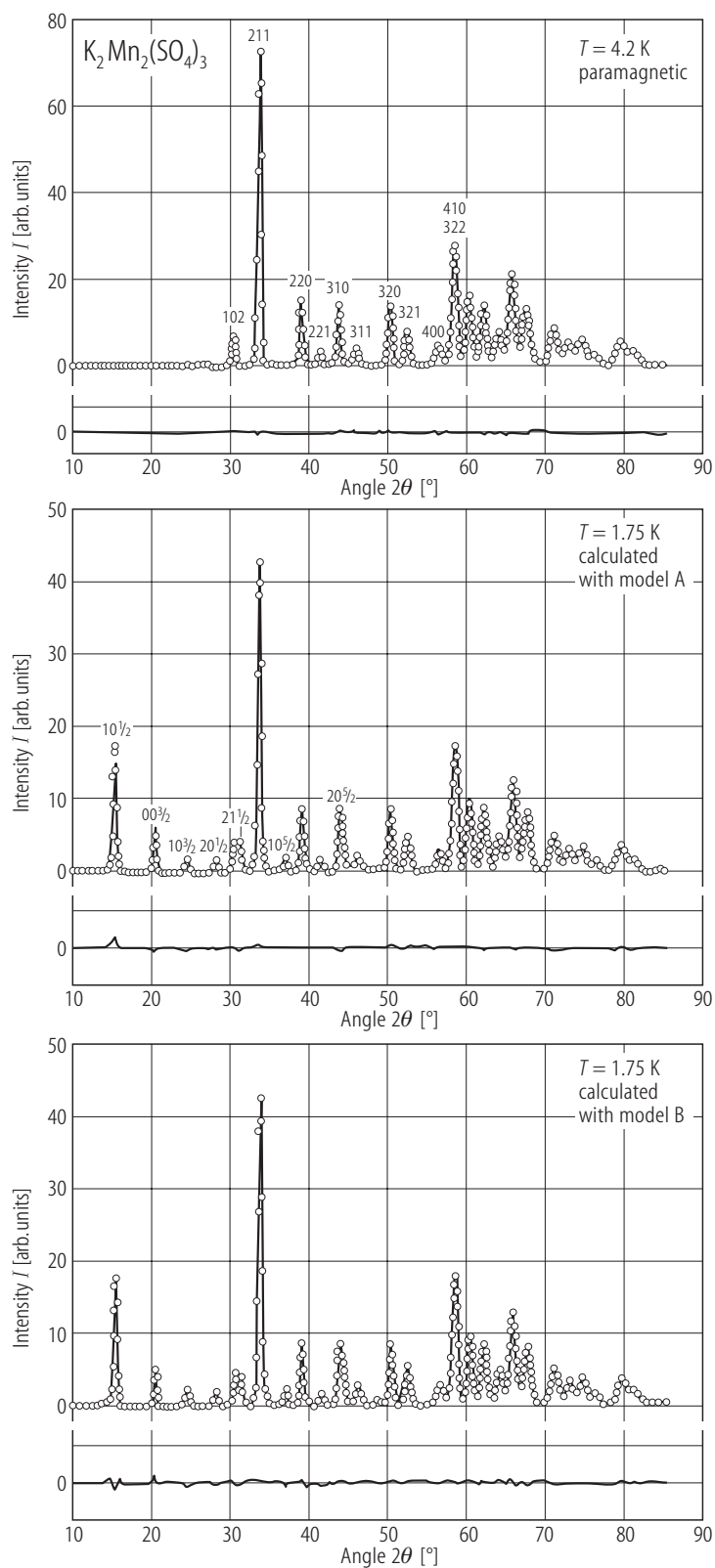


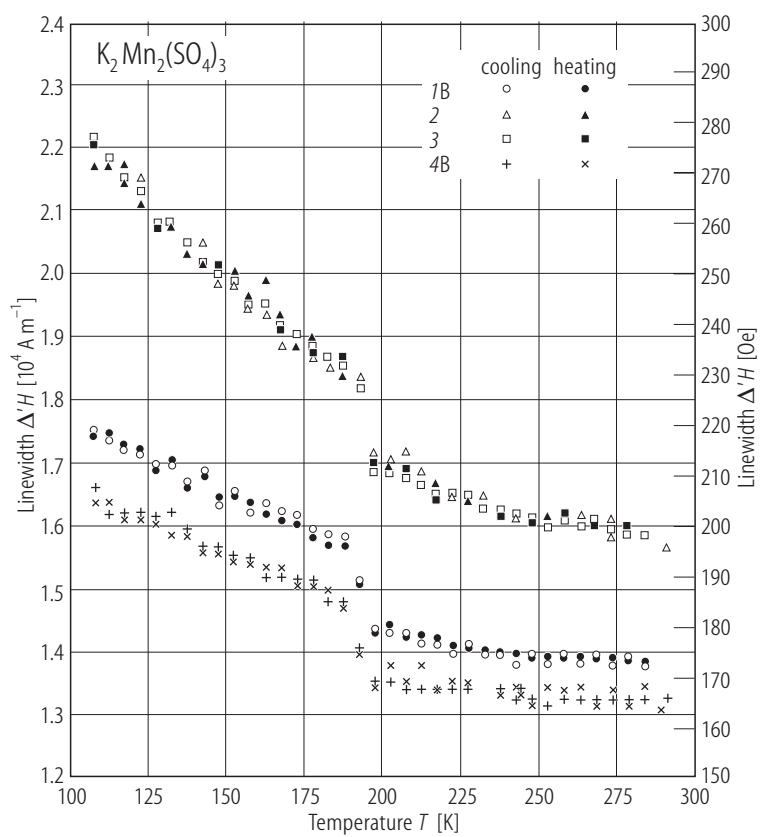
Fig. 43A-8-022.  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\rho$  vs.  $\nu$  [89Bre].  $\rho$ : optical rotation.



**Fig. 43A-8-023.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $I$  vs.  $\Delta\nu$  [82Kre].  $I$ : Raman scattering. Scattering geometry:  $Z(YY)X$ .



**Fig. 43A-8-024.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ . Calculated (—) and observed (open circle) neutron diffraction intensities at 4.2 K and 1.75 K [88Oel]. Calculated intensities (smooth curves) are based on two different models A and B.



**Fig. 43A-8-025.**  $\text{K}_2\text{Mn}_2(\text{SO}_4)_3$ .  $\Delta'H$  vs.  $T$  [98Tan].  $\Delta'H$ : linewidth of  $\text{Mn}^{2+}$  resonance. The numbers show sample crystals.