

INVESTIGATION OF ADP CRYSTALS DOPED  
WITH MANGANESE IONS

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Dielectric properties of ADP crystals doped with  $Mn^{3+}$ -ions are investigated. The conditions under which those crystals are grown and the influence of incorporated impurities on crystal habit are reported in [1]. The investigations are performed on the crystal plates of different thickness. The measurements of dielectric permittivity are carried on at the frequency of 800 Hz. The measuring cell of special construction, which enables measuring in the range from the ambient temperature to liquid nitrogen temperature, is applied.

The measurement of dielectric permittivity of undoped samples of ADP crystals and of ADP crystals doped with  $Mn^{3+}$ -ions show that appreciable influence of those ions exists. While for the undoped ADP crystals at the ambient

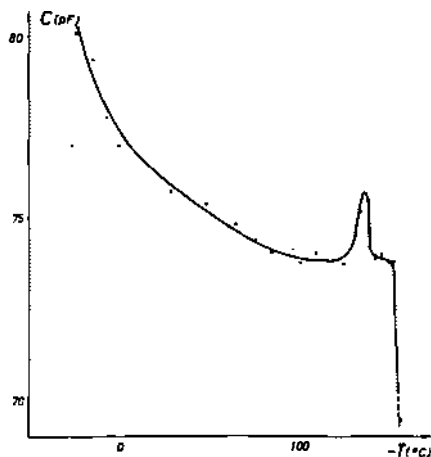


Fig. 1.

temperature  $\epsilon_r(^{\circ}\text{C}) = 58 [2]$ , for the doped samples with  $\text{Mn}^{3+}$ -ions  $\epsilon_r = 105$ .

The influence of doping on the position of the Curie point in the temperature scale is investigated by the determination of the dependence of electric capacity  $C$  of the measuring cell with examined sample on temperature  $T$ . In fig.1. the dependence  $C(T)$  for undoped ADP and in fig.2 the same dependence for the ADP doped with  $\text{Mn}^{3+}$ -ions are given. Those measurements show that the Curie temperature for the undoped crystals  $T_C = 137 \text{ K}$  and for ADP doped with  $\text{Mn}^{3+}$ -ions  $T_C = 121 \text{ K}$ .

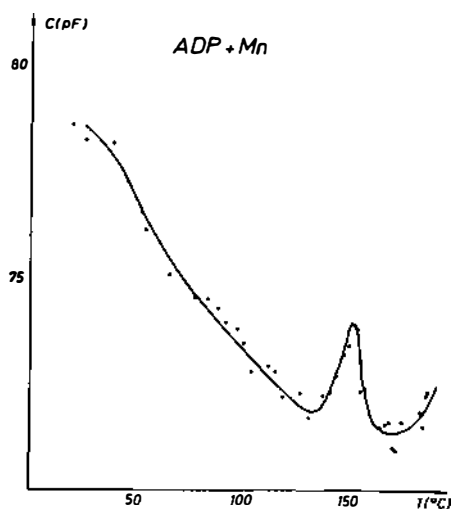


Fig. 2.

References:

1. Juranić Z., Napijalo M.Lj., Ristić R. and Žižić B., reported at this Symposium
2. Matthias B., Merz W. and Scherrer P., *Helv.Phys.Acta* 20, 273 (1947).