

ELECTRON PARAMAGNETIC RESONANCE  
FOR THE SURFACE MANGANESE  
IN ZnS SUBMICRON POWDERS

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S u m m a r y

A new kind of paramagnetic center (PC) associated with  $\text{Mn}^{2+}$  ions has been detected in ZnS submicron powders. The parameters of the EPR spectrum for this center are  $g = 2.001$ ,  $A = 9.5$  mT, and  $D = 8$  mT. To explain peculiar features of the spectrum, an influence of the axial crystalline field is taken into account by means of a perturbation method employed with regard for the third-order terms inclusive. A symmetry of the center environment and the proximity of a value of the hyperfine interaction (HFI) constant to that of the free  $\text{Mn}^{2+}$  ion allow us to identify the observed EPR spectrum as that originating from a surface manganese ion.