used in the experiment, so that absence of a spin-orbit contribution was to be expected.

The present note reports new results for the MCP of *F*-center emission in KCl and an unsuccessful attempt to observe the spin-orbit contribution under different conditions.

The 5145-Å line of a cw argon-ion laser was used to excite the *F* emission in KCl. The laser power measured at the sample location was about 30 mW, implying a pumping rate of 500–1000 $\sec^{-1}$ for the *F*-center concentration typical of our measurements. The MCP signal obtained for excitation with unpolarized laser light consisted of a zero-moment change of the *F* band, very similar to that observed for KF. The signal increased linearly with magnetic field, and was independent of temperature from 1.3 to 4.2 °K. Using the same analysis[1] as for KF, the circular dichroism is

$$(I_+ - I_-)/I = -4g_{\text{orb}}\mu_\beta H_z/\delta E, \qquad (1)$$

where $g_{\text{orb}} = |\langle 2p_y|L_z|2p_x\rangle|$, H_z is the applied field in a [100] direction, μ_β is the Bohr magneton, and δE is the characteristic energy separation between $2s$- and $2p$-like relaxed excited states.[3] The measured value for KCl is

$$\Delta = -(9\pm 1)\times 10^{-8}\, H(\text{G}). \qquad (2)$$

Using the recent value $\delta E \simeq 0.017$ eV measured for KCl,[3] this gives

$$g_{\text{orb}} = 0.06 \pm 0.01, \qquad (3)$$

which is close to the value of 0.04 found for KF.

The search for a spin-dependent contribution was made using intense circularly polarized pumping light. Mollenauer *et al.*[4] and Karlov *et al.*[5] showed that this will lead to a saturation value $\langle S_z\rangle^{\text{sat}}$ of the spin polarization which is proportional to the circular dichroism in absorption at the excitation wavelength. This optically induced spin polarization will contribute to the MCP depending on the sense (±) of circular polarization:

$$\Delta_\pm = \frac{-4g_{\text{orb}}\mu_\beta}{\delta E}\left(H_z \pm \frac{\lambda^*}{\mu_\beta}\langle S_z\rangle^{\text{sat}}\right), \qquad (4)$$

where λ^* is the spin-orbit coupling constant for the relaxed excited state. If the sense of circular polarization of the pumping light is reversed, the relative change of the MCP signal will be

$$(\Delta_+ - \Delta_-)/(\Delta_+ + \Delta_-) = \lambda^* \langle S_z\rangle^{\text{sat}}/\mu_\beta H_z . \qquad (5)$$

For the 5145-Å line, $\langle S_z\rangle^{\text{sat}}$ should be ~ 0.025 in KCl.[4] At $H_z = 12$ kG the signal-to-noise ratio was such that a 10% change would have been observable, but none was seen. This implies that $\lambda^* < 0.2\times 10^{-3}$ eV, whereas in the "unrelaxed" excited state seen in absorption[6] $\lambda = 6\times 10^{-3}$ eV.

At the present time I cannot offer a satisfactory explanation of the small value of the spin-orbit coupling constant in the relaxed excited state of the *F* center.

Experimentally the use of a higher-power argon laser would probably improve the sensitivity to the point where the spin-dependent contribution to the MCP could be observed.

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PHYSICAL REVIEW B VOLUME 2, NUMBER 10 15 NOVEMBER 1970

ERRATA

Coulomb Effects at Saddle-Type Critical Points, E. O. Kane [Phys. Rev. 180, 852 (1969)]. It was brought to my attention by Y. Petroff that a factor ω^2 was missing in the denominator of Eq. (38). It should also be noted that immediately after Eq. (38), $\langle p^2\rangle_{\text{av}}$ should equal $3\langle p_x^2\rangle_{\text{av}}$ and Eq. (39) should read $\epsilon_2(\omega) = 6.3\, S_{\text{tot}}(\hbar\omega)$. This correction results in an estimated longitudinal-to-transverse mass ratio of − 12 instead of − 60 for CdTe. Theory and experiment are then in better agreement with less need for phonon broadening and a mass ratio which seems more plausible.