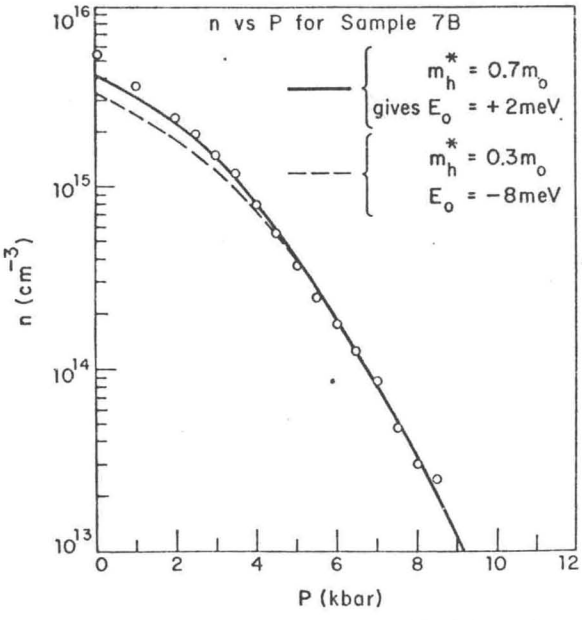

FIG. 5. Number of electrons in sample 7B as a function of pressure. The points are the values of n deduced from the experimental data. The lines are calculated from the Kane's $\vec{k}\cdot\vec{p}$ model with $P_K = 8.4\times10^{-8}$ eV/cm, $\alpha = dE_g/dP = 7.0\times10^{-6}$ eV/bar.

kbar), R is constant initially and then shows strong quantum effects but remains negative. The resistivity rises very rapidly with transverse magnetic field from 0.03 Ω cm to more than 80 Ω cm at 20 kG. At high fields the Hall angle was less

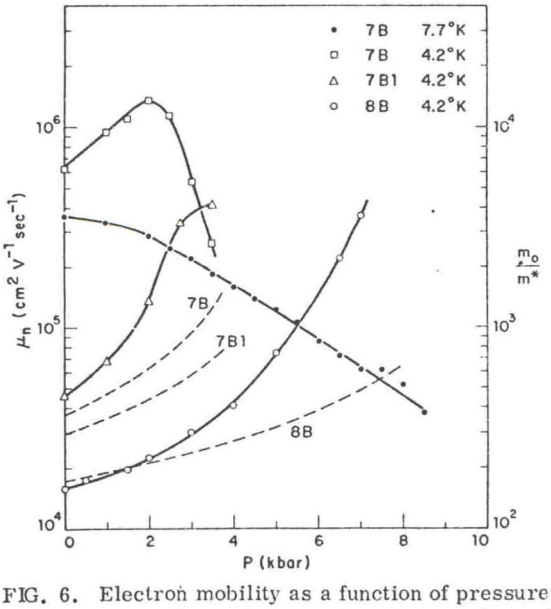

FIG. 6. Electron mobility as a function of pressure for the three samples. The variation of the reciprocal effective mass due to the change in E_g is shown by the dashed lines for comparison. The mobility is seen to increase faster than $1/m^*$ at low pressure, and for sample 7B at 4.2 °K to turn downward above 2 kbar.

TABLE I. Values for the carrier concentrations and mobilities at atmospheric pressure.

		77 °K			$P=0$		4.2 °K		$P=0$	
Sample	x	p (cm^{-3})	μ_p (cm^2 V^{-1} sec^{-1})		n (cm^{-3})	μ_n (cm^2 V^{-1} sec^{-1})	p (cm^{-3})	μ_p (cm^2 V^{-1} sec^{-1})	n (cm^{-3})	μ_n (cm^2 V^{-1} sec^{-1})
7B	0.149 ± 0.005	1.5×10^{16} ($P>5$ kbar)	450 ($P>5$ kbar)		5.3×10^{15}	3.7×10^5	...	...	3.4×10^{14}	6.3×10^5
7B1	0.149 ± 0.005	6.3×10^{17}	174		3.0×10^{15}	3.2×10^4	1.5×10^{17}	76	8.8×10^{14}	4.6×10^4
8B	0.138 ± 0.005	8.3×10^{17}	168		4.8×10^{15}	2.5×10^4	7.6×10^{17}	78	3.2×10^{15}	1.6×10^4