

Copy of a printed graph referenced as "Energy bonds in diamond"

Contributors

Fuller, Watson, 1935-

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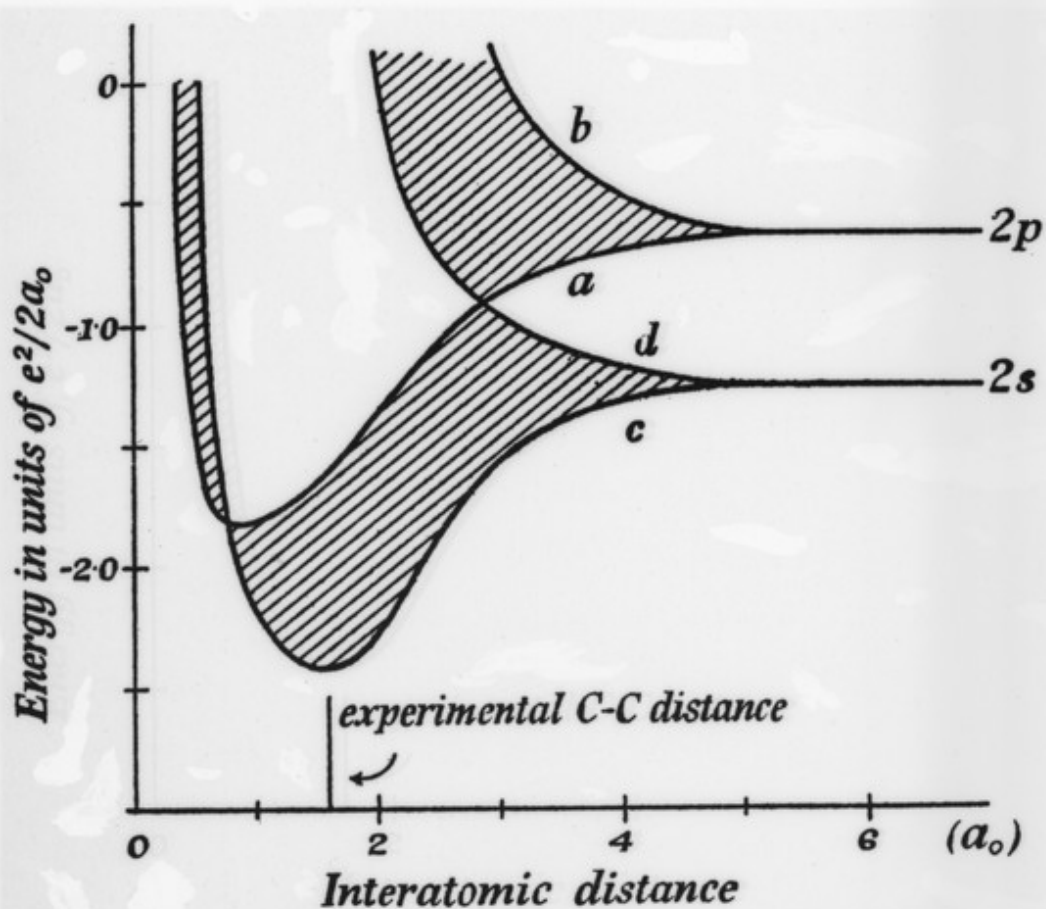
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own.

The argument above is easily generalized. If there are partially filled bands of electrons, the substance is a conductor: if there are only completely filled and completely empty bands, it is an insulator.



Energy bands in diamond (after Kimball). In addition to the shaded bands, there are bands of zero width following curves (a) and (b) of the figure.

We may illustrate this in terms of lithium and diamond, which the first is a metal and the second an insulator. The band structure of lithium has already been given in Fig. 4. The corresponding structure for diamond† is reproduced in Fig. 7. In the case of lithium there is only one valence electron per atom, but the largest band in the crystal should there