

The K P Method Electronic Properties Of Semiconductors

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The K P Method Electronic Properties Of Semiconductors

for p-type doping. (See the article on semiconductors for a more detailed description of the doping mechanism.) A semiconductor doped to such high levels... 35 KB (4,525 words) - 15:14, 6 March 2024

crystal silicon used in the electronics industry to make semiconductor devices like integrated circuits.

Other semiconductors, such as gallium arsenide... 14 KB (1,793 words) - 00:01, 9 May 2023

constituent atoms. Different semiconductor materials differ in their properties. Thus, in comparison with silicon, compound semiconductors have both advantages... 54 KB (2,516 words) - 04:16, 18 March 2024

about 30-40% the band gap in insulators and semiconductors. It is commonly believed that DFT is a theory to predict ground state properties of a system only... 36 KB (4,772 words) - 05:58, 9 November 2023

points. The two sets are labeled K and K'. The sets give graphene a valley degeneracy of $g_v = 2$. By contrast, for traditional semiconductors the primary... 44 KB (5,073 words) - 10:45, 2 March 2024

crystal doped with another type of dopant). p-n junctions are elementary "building blocks" of semiconductor electronic devices such as diodes, transistors, solar... 19 KB (2,740 words) - 07:46, 16 March 2024

or semiconductor nanocrystals are semiconductor particles a few nanometres in size with optical and electronic properties that differ from those of larger... 113 KB (13,175 words) - 01:08, 15 March 2024

the concentration of impurities, which allows the use of doping to achieve desirable electronic properties. Hence, semiconductors form the basis of the... 62 KB (6,522 words) - 01:26, 25 February 2024

A semiconductor device is an electronic component that relies on the electronic properties of a semiconductor material (primarily silicon, germanium,... 31 KB (4,833 words) - 04:22, 10 February 2024

semiconductors, and electronics. The electrical properties of silicon and germanium enabled the establishment of the semiconductor industry in the 1950s... 248 KB (28,106 words) - 20:28, 6 February 2024

and components for electronic devices and circuits. The semiconductor industry is one of the largest and most profitable sectors in the global economy, with... 36 KB (3,355 words) - 06:24, 6 March 2024

various compound semiconductors are used for specialized applications. The fabrication process is

performed in highly specialized semiconductor fabrication... 103 KB (10,877 words) - 20:37, 17 March 2024

use an alloy of silicon and germanium (SiGe) in MOSFET channels.[citation needed] Many semiconductors with better electrical properties than silicon,... 93 KB (11,350 words) - 15:25, 7 March 2024
often realised in dilute magnetic semiconductors (DMS) and Heusler alloys and are of particular interest in the field of quantum computing and neuromorphic... 30 KB (3,306 words) - 21:36, 5 January 2024
cross the band gap of the semiconductor. White light is obtained by using multiple semiconductors or a layer of light-emitting phosphor on the semiconductor... 164 KB (18,069 words) - 10:52, 13 March 2024

from the original on 2014-03-02. Retrieved 2013-02-19. C. S. Fuller "Defect Interactions in Semiconductors" Chapter 5 pp. 192-221 in "Semiconductors" N... 88 KB (9,563 words) - 01:08, 23 February 2024

influences the electronic structure of semiconductors and, therefore, their optical band gaps. In a regular semiconductor crystal, the band gap is fixed... 23 KB (2,482 words) - 15:24, 19 February 2024
of semiconductor material, usually with at least three terminals for connection to an electronic circuit. A voltage or current applied to one pair of... 94 KB (9,852 words) - 23:13, 7 March 2024

in 1924. The theory of graphene was first explored by P. R. Wallace in 1947 as a starting point for understanding the electronic properties of 3D graphite... 246 KB (26,739 words) - 14:08, 1 March 2024
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ISBN 9812838848. Klingshirn, Claus F. (2012). Semiconductor Optics... 27 KB (3,340 words) - 18:23, 3 February 2024