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Nature Of Chemical Elements

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Abstract

The main problem is that using X-rays, we have determined the crystal lattices of different materials, and why they are so, and not others are not yet known. For example, copper crystallizes in the fcc lattice, and iron in the bcc, which becomes fcc on heating, this is used for heat treatment of steels. Copper does not change the crystal lattice when heated. There are many factors affecting the crystallization in the literature, so they decided to remove them as much as possible, and the metal model in the article, say so, is ideal, i.e. all atoms are the same (pure metal) without inclusions, without implants, without defects, etc. using the Hall effect and other data on properties, as well as the calculations of Ashcroft and Mermin, my main determining factor for the type of lattice was the core of the atom or ion, which resulted from the transfer of some electrons to the conduction band. It turned out that the metal bond is due not only to the socialization of electrons, but also to external electrons of atomic cores, which determine the direction or type of the crystal lattice.

The change in the type of metal lattice can be connected with the transition of an electron to the conduction band or its return from this zone. Phase transition. It is shown that in the general case, the metal bond in the closest packages (hec and fcc) between the centrally chosen atom and its neighbors is presumably carried out by means of nine (9) directional bonds, in contrast to the number of neighbors equal to 12 (twelve) (coordination number). Probably the "alien" 3 (three) atoms are present in the coordination number 12 stereometrically, and not because of the connection. The answer is to give an experimental test.

.Biography:

Born in 1948 in the Grodno region of the Belarusian SSR of the Soviet Union. After serving in the army, he graduated from the Leningrad Electrotechnical Institute (LETI) with a degree in semiconductors and dielectrics.

Single crystals of yttrium garnet were grown in lead oxide melts at NPO Ferrit. Since 1986, he worked out the technology of production of products by powder metallurgy methods at the Kazan Scientific Research Radiotechnological Institute. He graduated from labor as a teacher of materials science at the Grodno Electrotechnical College in 2014.

During his studies at LETI, he tried to explain the nature of phase transitions in barium titanate. During his career, he sought the mechanisms of interaction of atoms during the formation of various crystal lattices of metals. Along the way, I built a table of elements.

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