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# Correlations Between Electronic and Superconducting Properties of Superconductors

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This study focuses on investigating the superconducting and electronic properties of compounds with the A15, B1 and perovskite-type lattices. The properties analysed incl... **View more**

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##### Abstract:

This study focuses on investigating the superconducting and electronic properties of compounds with the A15, B1 and perovskite-type lattices. The properties analysed include the critical temperature of transition to the superconducting state, the superconducting energy gap, the concentration of carriers (conduction electrons)  $N$ , and the penetration depth of the magnetic field (London penetration depth). The study results demonstrate that there is a correlation between the mentioned parameters and it follows the power law.

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## Contents

### I. Introduction

Fundamental and applied research on superconductors, especially their superconducting, optical, tunnelling properties and microcharacteristics is one of the current issues of modern physics. The

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development of devices based on the [phenomenon of superconductivity](#) is of particular interest for the information technology. The tasks associated with the training of highly qualified personnel and producing the devices and equipment based on the effect of superconductivity are also relevant.

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