

Abstract Submitted
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Determination of the Eliashberg's Equations in the Superconductivity Post BCS CARLOS FIGUEROA, RENE BETANCOURT, LAZARO FERRER, MARTIN MOLINAR, DIFUS — The Eliashberg theory was a significant advance with respect to the BCS Theory because of it extends the rank of application without changing its origin, which is based on the formation of Cooper pairs by the interaction electron phonon. It doesn't modify the essential characteristics of BCS theory but it includes more information about the subject. Another point to be considered is BCS theory works, better with the weak electron-phonon coupling superconductors as the aluminium (Al). As the coupling becomes strong the results show significant deviations as in the case of lead (Pb). The Eliashberg's equations make an extension to incorporate the strong electron-phonon interaction. This theory synthesizes the information in a expression known as Eliashberg's function, or effective spectral density. Using the last problem solutions it can be possible to recover the universal relation of the BCS, likewise, the deviation function and the isotope effect. No doubt, it is a qualitative jump in the knowledge of the conventional superconductor materials.

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