

LETTER TO THE EDITOR

Comment on "Comments on 'Equilibrium space-charge distributions in semiconductors'"

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MS received 24 July 1972

Abstract. A brief discussion is given of a priority matter associated with the problem of calculating the potential distribution in a finite layer of intrinsic semiconducting material.

Gasanov (1971) several times refers to earlier work (Gasanov 1966) in which he obtained an exact, Jacobian-elliptic-function solution for the potential distribution in a finite layer of intrinsic semiconducting material. Gasanov seems to imply that his is the first published solution of this problem. It is desirable to point out that such is far from the case. The first published solution appears to be that of Jaffé (1933). Some practical simplifications in his results, which avoid problems with Jacobian elliptic functions, were given later (Macdonald 1954). A summary of many independent solutions to this space-charge problem has been published (Macdonald 1964). Various conditions of dissociation and charge mobility have been considered by different authors. Finally, Anderson (1964) has obtained a Jacobian-elliptic-function solution applicable when the usual condition of overall charge neutrality fails to apply.

References

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