Consequently, although the magnitudes of the effects decribed here have not been evaluated, the present suggestions indicate that not only can energetic ions produce both vacancy and interstitial clusters, the former being capable of at least partial thermal anneal at room temperature but that a radiation anneal mechanism must also operate. In this work, it is believed that the anneal of damage created by initial more energetic ions by a second lower energy ion is a result of interstitial cluster annihilation by vacancies generated by the lower energy ion.

Quite clearly, some of these suggestions are speculative and a more direct confirmation would be attained by direct electron microscopic observations of defect production and by further studies at different temperatures and solids with different defect migration properties. Such parallel experiments are now engaging our attention.

Acknowledgment

A. R. Bayly would like to thank the Science Research Council for provision of a maintenance grant during the course of these studies.

References

1) For a review of electron bombardment studies see for example „The Ion Bombardment of Solids" by G. Carter and J. S. Colligon, Heinemanns, London, 1968.
2) V. Teodosić, Appl. Phys. Letters, **9** (1966) 209:
3) B. Navinšek and G. Carter, Can. J. Phys., **46** (1968) 719;
4) B. Jouffrey, Ph. D. Thesis, University of Paris (1964);
5) For a review of this work, see ref. 1).
6) K. L. Chopra and M. R. Randlett, J. Appl. Phys., **38** (1967) 3144;
7) G. K. Wehner, General Mills Electronics Group, Report No 2309, (1962);
8) X. L. Merkle, Proc. Int. Conf. on Solid State Physics Research with Accelerators, Brookhaven, U.S.A. (1967);
9) G. J. Ogilvie, J. V. Sanders and A. A. Thomson, J. Phys. Chem. Solids, **24** (1963) 247;
10) J. A. Venables and R. W. Balluffi, Phil. Mag., **11** (1965) 1021 and 1039;
11) P. B. Bowden and D. G. Brandon, Phil. Mag., **8** (1963) 935;
12) J. Diehl, H. Diepers and B. Hertel, Can. J. Phys., **46** (1968) 647;
13) L. E. Thomas and R. W. Balluffi, Phil. Mag., **15** (1967) 1117 and 1137;
14) G. Högberg, and H. Norden, (1970) to be published;
15) L. E. Thomas, T. Schober and R. W. Balluffi, Radiation Effects, **1** p. 257, 269 and 279.

2.8 Influence of the type of bombarding ions on the change of resistivity of bombarded thin metal layer

V. M. TEODOSIĆ, *Electrical Engineering Faculty, University of Beograd, Beograd, Yugoslavia*