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G. R. Wait
State University of Iowa

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THE DEPENDENCE OF THE RESISTANCE OF SILVER FILMS UPON THE METHOD OF DEPOSITION

G. R. WAIT

ABSTRACT

1. Most observers investigating the specific resistance in thin metallic films have found that it decreases rapidly with time. In the present investigation Brashear's process of obtaining silver films was followed. Figure 39 shows how the resistance of a typical film changes with time.

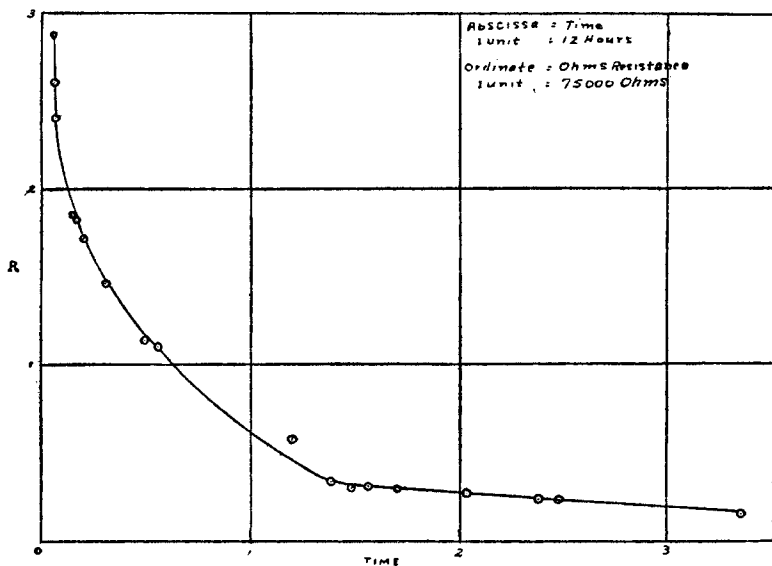


Fig. 39

2. The method mentioned above was modified somewhat; (a) by the addition of double the amount of sodium hydroxide stipulated; (b) by going over the surface of the glass upon which the film is to be deposited, after it is in solution, with a glass brush, thus freeing the surface of small air bubbles; (c) by keeping the temperature of the solution below 60° F.

3. Figure 40 shows films obtained by Brashear's process unmodified (points marked .), and films obtained by the process

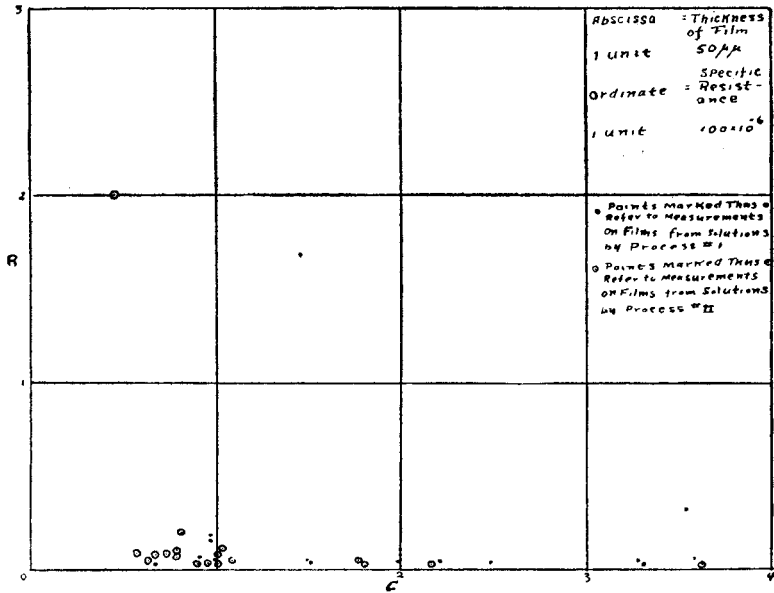


Fig. 40

modified as explained above (points marked \ominus). It will be seen that for those films obtained by the unmodified process, the resistance is not only much higher than that of the others, but the variations are much greater.