

TRIP REPORT

T-4

March 24, 1955

Destination: General Electric Research Laboratory

Date of Contact: March 16, 1955

Report by: H. L. McLeland and T. W. Trout, Materials and Processes Section

Persons contacted: V. L. Stout
M. D. Gibbons

Purpose of Trip:

This trip was necessary in order to obtain information about the latest techniques in high vacuum systems, calibrated leaks, gettering and outgassing procedures, and latest developments in sintered cathodes.

Results:

Several all glass vacuum systems were examined along with calibrated leaks. Methods of making the leaks and calibrating them were observed. Gettering and outgassing measurements and errors inherent in the technique were discussed. A very useful method of measuring rate of outgassing in a dynamic system was disclosed to us. This involves the use of ionization gauges on each end of a capillary of known conductance. Techniques of temperature measurement inside a sealed off tube were discussed, including location of cold junction of a thermocouple and means of minimizing errors due to inaccessibility of a cold junction.

It has been determined that an alloy of 95% electrolytic nickel and 5% titanium hydride is more suitable for the nickel-titanium matrix cathode than the 44% Ti-56% Ni alloy. Future development of this cathode in this section will proceed in this direction. A new tantalum bucket to be used as an R. F. oven was given to this section in order that the investigation not be delayed.

H. L. McLeland
Materials and Processes
CATHODE-RAY TUBE SUB-DEPARTMENT

HIM/ldb

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