

TRIP REPORT
Chemical Products Works
General Electric Company
Cleveland, Ohio

V.C. Campbell
109

August 28, 1953

DATE: August 11 and 12, 1953

PERSONS CONTACTED: D. Beaumont R. Gale
W. Cartun F. Geraghty
G. Dragt W. Graff
A. Friedman D. Kinney
S. Jones D. Mackie
of the Chemical Products Works

T. Harr
of the General Engineering Laboratory, SCHENECTADY WORKS

J. Aicher
H. Froelich
V. Vodicka
of the Lamp Development Laboratory

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AUG 31 1953
G. R. TUBE ENGINEERING - 1

INTRODUCTION:

A meeting was arranged at the Chemical Products Works between their representatives and T. Harr, C. Dichter (Materials & Processes, CRT Engineering), and the writer to discuss phosphor problems.

The testing of phosphors was discussed at a conference attended by Messrs. Dragt, Gale, Harr, Kinney, and the writer. The CPW's Analytical Laboratory is prepared to do the chemical analyses. They already gave us valuable information on constituents of some phosphors we are presently evaluating. Minor constituents are determined spectrographically and also undesirable impurities may be so detected. G. Dragt proposed that every production lot of phosphors for monochrome TV be analyzed for ZnO, Ag, Na, Cl, Silica, and sulphur. Zinc and cadmium may best be determined polarographically if the number of samples will justify the use of this method.

Some other tests may be run concurrently at CPW Laboratory and CRT Engineering Laboratory (Materials & Processes). In both places, Fischer Sub-siever and Roller Analyzer are available for particle size determinations. CPW has the ASTM apparatus and porosity measurement by the air-permeation method. We intend to read color and brightness on the demountable tube as they will. A. Friedman has built a phosphoroscope for decay measurement. The writer reported the construction details to F. Gordon (Materials and Processes). Functioning of the Roller Analyzer was discussed with D. Beaumont. Photomicrograph problems were the topic of conversation with F. Geraghty. He is using Leitz Panphot camera in his work. We would prefer more flexible combination comprising a good polarizing microscope and a precision camera. MSA portable microprojector is a mean of standardizing other particle size measuring instruments.

J. Aicher and V. Vodicka showed us a very ingenious set-up for determination of particle size distribution by automatic recording of turbidity changes in the settling cell of a Eagle-Picher Turbidimeter.

H. Froelich showed us slides with electro-luminescent coatings.

Some applications of ultrasonic generator were discussed at CPW. According to their experiments, ultrason did not break phosphor aggregates apart.

The writer informed F. Romano (Facilities Development) of this fact. T. Harr intends to further investigate the use of the ultrasonic generator for dispersing phosphors in liquids. In his recent screening experiments, he was using chemical dispersing agents.

Shannon Jones was very helpful in suggesting various binders for our current investigations on inside paints. Among other metaphosphates, ethylborate and permafill were discussed. T. Harr mentioned the use of a Dag dispersion No. 38 (Acheson Colloids Corporation, Port Huron, Michigan). Other materials were reviewed for possible use in screening, such as "deionized" silicate (a colloidal solution of silicic acid) and CMC (a Hercules Powder product). Small samples of the two were brought to Syracuse to try them out for screening and filming investigations.

The manager and the staff of the CPW were perfect hosts.

V. M. Srepel
Materials and Processes
CATHODE RAY TUBE SUB DEPARTMENT

VS:AB

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