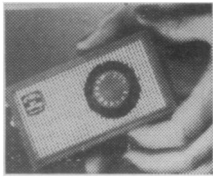


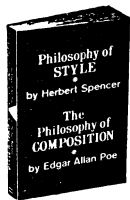
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## CHEMISTRY

# New Luminescent Screen

► A WAY TO RETAIN a luminescent image for as long as a half hour has been developed. It short-cuts viewing X-rays and electron microscope images.

Use in medical radiography is foreseen, eliminating making a photograph and shortening the exposure of patients to radiation. Castings inspection by X-rays will be speeded and simplified.

The image retaining panel can be used at least 10,000 times and gives an immediate picture without developing.

Chemical compounds known as phosphors glow when excited by an electric field, usually an alternating current. This phenomenon is known as electroluminescence and was first observed by the French scientist, Prof. Georges Destriau, in 1936.

Basically a zinc cadmium sulfide, the new phosphor is activated differently from a.c. excited phosphors. When stimulated with a combination of a direct electrical current and a radiation source, the chemical luminescences.

The unusual phosphor was reported by Dr. P. W. Ranby, Mrs. Doreen Y. Hobbs, D. W. Turner and H. L. Burrus, who were working on electroluminescent compounds at the Thorn Electrical Industries Laboratories at Enfield, England.

The "image retaining panel" on which the picture is produced consists of the phosphor sandwiched between two metal electrodes.

When the direct current is turned on, the panel containing the new phosphor remains dark until a light or other radiation is introduced to "trigger" the electroluminescence. Then a yellowish glow appears and the phosphor continues to glow for about 30 minutes after the triggering radiation is removed and the object taken away.

Emission from the phosphor is reduced to about three quarters brilliance when the radiation source is removed, but the picture

stays sufficiently clear and distinct, and provides a means of obtaining instant images for a wide range of scientific, engineering or medical purposes. The images can be photographed for record purposes.

When the electric current is turned off, the electroluminescence ceases and the image disappears. The panel is then ready for the next "picture."

Because of the low energy required to produce an image, satisfactory pictures could be produced on a fluorescent screen with an electron microscope for quick examination without damage to the specimen being examined.

Such a device would be useful in an operating room where a surgeon would be able to control the progress of an operation by observing quick flashes on a screen.

• Science News Letter, 83:142 March 2, 1963

## Do You Know?

*Boron* is used to slow or stop a nuclear chain reaction.

A major source of meteoritic *dust* on earth may be the moon from meteorite impact.

*Arbovirus* infections are central nervous system infections caused by insect-borne viruses.

Radioactive gold-198 and sulphur-32 are used in gold thioglucose to locate appetite control centers in the *brain*.

*Israel* is the first country to almost wipe out tuberculosis of cattle, one of the main sources of human TB infection.

• Science News Letter, 83:142 March 2, 1963

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