

# Proceedings of the Iowa Academy of Science

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Volume 40 | Annual Issue

Article 77

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1933

## The Effect of Cathode Rays on Metal Surfaces

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### Recommended Citation

Wilcox, Elizabeth (1933) "The Effect of Cathode Rays on Metal Surfaces," *Proceedings of the Iowa Academy of Science*, 40(1), 150-150.

Available at: <https://scholarworks.uni.edu/pias/vol40/iss1/77>

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## CURRENT VIEWS CONCERNING THE LIQUID STATE

ROSS D. SPANGLER

Investigation of ether in the region of the critical point by the x-ray diffraction methods leads to a new conception of the liquid state. A review is made of authoritative views on the subject and these views discussed in the light of new evidence obtained by x-ray methods. It appears that existing definitions of the liquid state are not adequate and should be supplanted by ones more in conformity with the facts.

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THE EFFECT OF CATHODE RAYS ON  
METAL SURFACES

ELIZABETH WILCOX

Metal surfaces which have been bombarded with cathode rays and those which have not been so bombarded, react differentially toward chemical vapors. Surfaces which have been rayed through a stencil and developed in certain vapors, reveal the image of the stencil pattern. It was desired to protect the unrayed areas with an inactive and nonconducting coating. The rayed areas should then acquire a deposit when the specimen is electroplated. This was best accomplished by development in the absence of air, with ionized organic vapors. Attempts were also made to raise the surface of the rayed regions directly. Preliminary experiments indicate the development with metallic vapors, in the absence of air.

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THE EFFECT OF SLOW ELECTRONS ON  
METAL SURFACES

J. B. PHILIPSON

It has been shown that the impact of electrons on a metal surface alters the chemical properties of the surface in such a way that certain subsequent chemical treatments will make the exposed portions visibly different from the unexposed portions. This prop-