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Potentials of Spark Lines of Mercury vapor

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the magnetic properties not at all, (2) the films are permanent in
time in magnetic properties and do not rust.

STATE UNIVERSITY OF IOWA,
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POTENTIALS OF SPARK LINES OF MERCURY VAPOR

J. A. ELDREDGE

(ABSTRACT)

It has been shown by a series of photometric readings on thirty
spark lines of mercury falling in the range 2000-5000 angstroms,
that these lines fall into three groups. (1) Excitation potential
at about 20 volts, (2) excitation potential about 28 volts and (3)
excitation potential about 55 volts. The exact values of these
potentials are uncertain since they depend upon pressure and cur­
rent conditions. If we accept the results of Smythe that double
ionization occurs first at 20 volts and triple ionization certainly
not under 100 volts we may suppose the first class of lines as due
to the removal of the second valence electron. The other lines
are not so easily explained but are probably due to electrons dis­
placed from the inner levels.

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THE ABSORPTION OF MOISTURE BY HARD RUBBER

Geo. E. THOMPSON

(ABSTRACT)

A study is being made of the effects of relative humidity and
electric fields on moisture absorption by hard rubber.

A specimen of hard rubber is suspended in a constant tempera­
ture box from the beam of a sensitive chainomatic balance. The
relative humidity of the box is varied by placing sulphuric acid of
various concentrations in the box. The rubber specimen is sus­
pended between two brass electrodes which are attached to a
10,000 volt transformer.

At 100 per cent humidity the effect of the electric field is to
increase the rate of moisture absorption at first and later to dimin­
ish it. At 70 per cent humidity the electric field seemed to be
without effect.