

UNCLASSIFIED

AD 401 282

DEFENSE DOCUMENTATION CENTER

FOR

SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA, VIRGINIA



UNCLASSIFIED

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

401 282

⑤ 17511

21

S/073/62/028/009/002/011
A057/A126

STEP

AUTHORS: ⑧ Pamfilov, A. V., Mazurkevich, Ya. S.

TITLE: ⑥ The photocatalytic activity of cadmium sulfide

PERIODICAL: ⑮ TRANS. FROM
Ukrainskiy khimicheskiy zhurnal, v. 28, no. 9, 1962, 1014 - 1018

WIA
FILE COPY

TEXT: The effect of preparing and thermally pre-treating cadmium sulfide, the effect of admixtures (W, Ag, Cu) upon its activity as catalyst in the photosynthesis of hydrogen peroxyde, and the photoreduction of methylene blue by formaldehyde were studied in the Chernovitskiy gosudarstvennyy universitet (Chernovits State University). Also the photocatalytic activity of some zinc sulfide samples was investigated. The activity was determined by a previously described method and the photo-emf measured by the condenser method. A considerable effect of the preparation method upon the catalytic activity of CdS was observed. Highest activity showed CdS prepared from CdCl₂. Also the introduction of halogens increases the activity of CdS. The effect rises in the sequence J - Br - Cl. Preheating of CdS to 400 - 700°C in a thoroughly purified nitrogen atmosphere improves also the catalytic activity. The authors state that, contrary

Card 1/2

S/073/62/028/009/002/011
A057/A126

The photocatalytic activity of cadmium sulfide

to the opinion of R. E. Stephens et al. (J. Phys. Chem., v. 59, 1955, 966) an increase in excess Cd, effected by heating or by the resulting loss of sulphur, causes a rise in the activity, since the Cd atoms play the role of active centers. Also admixtures of metals (W, Ag, Cu) increase the catalytic activity of CdS. Maximum activity showed CdS containing 0.002 - 0.003 at.% of metal admixture. The effect rises in the sequence Cu - Ag - W. The simultaneous change of the photo-emf with the photocatalytic activity of CdS is stipulated by the electronic state of its surface. Experiments with ZnS catalysts showed a very low activity of the latter and a drop in activity effected by metal admixtures. There are 6 tables.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovits State University)

SUBMITTED: July 12, 1961

Card 2/2