DAIDBEKOVA, E.A.; KURBANOVA, F.M.

Lithofacies characteristics of sediments in the producing formation of the lower Kura Valley in connection with their oil potential. Azerb. neft. khoz. 38 no.8:13-15 Ag '59. (MIRA 13:2)
(Kura Valley--Petroleum geology)

[illegible], E. A.

DAIDBEKOVA, E.A.

Mineral and geochemical facies of sediments in the flysch formation of the southeastern Caucasus. Trudy AzNII DN no.9:44-53 '60.
(Caucasus--Flysch) (MIRA 14:5)

DAIDBEKOVA, E.A.; POKIDIN, A.K.

Lithological and thermographic characteristics of carbonate rocks in the southeastern Caucasus. Trudy AzNII DN no.10:122-130 '60.
(MIRA 14:4)

(Caucasus--Rocks, Carbonate)

DAIDBEKOVA, E. A., Doc Geol ~~and~~ Min~~eral~~ Sci, "Petrography of the Flysch formation of the Southeastern Caucasus." Baku, 1961. (Joint Council of Azerbaydzhan Inst of Petroleum and Chem imeni M. Azizbekov and Institutes and Institutions of Acad Sci AzSSR for Geol and Mineral Sciences). (KL-DV, 11-61, 212).

DAIDBEKOVA, E.A.; IBRAGIMOVA, B.M.

Hydrotroilite in deposits of the akchagyl stage in the Kura Lowland.
Dokl. AN SSSR 137 no.3:678-680 Mr '61. (MIRA 14:2)

1. Azerbayzhanskiy nauchno-issledovatel'skiy institut po dobyche nefti. Predstavleno akademikom N.M.Strakhovym.
(Kura Lowland--Hydrotroilite)

DAIDBEKOVA, E.A.; POKIDIN, A.K.; ISMAYLOVA, R.S.

Mineralogy of clays of Cretaceous sediments of the southeastern Caucasus. Biul.MOIP.Otd.geol. 36 no.6:37-48 N-D '61.
(MIRA 15:7)

(Caucasus--Clay)

DAIDBEKOVA, E.A.; BABAYEVA, R.S.; GRIGOR'YANTS, Z.G.; KURBANOVA, F.M.;
IBRAGIMOVA, B.M.; SHAMAILOVA, O.D.

Granulometric types of rocks and allothigene minerals. Trudy
GIN no.115:29-67 '65. (MIRA 18:12)

DAIEV Khr.

S/075/60/015/004/013/030/XX
B020/B064

AUTHORS: Yordanov, N. and Daiyev, Khr.

TITLE: Photometric Determination of Cerium by Means of o-Tolidine

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol. 15, No. 4, pp. 443 - 445

TEXT: The present paper describes a new, unpublished method for a more selective and accurate determination of tetravalent cerium with o-tolidine (3,3'-dimethyl benzidine); the qualitative reaction has been known since long, but has hitherto not been used for quantitative cerium determination. Cerium was separated from the disturbing components together with the rare earths in the form of oxalates. If there are no rare earths present in the analyzed material, lanthanum nitrate is added, and the oxalates are precipitated. A 12 mg/ml $La(NO_3)_3$ solution was used in the experiments.

Since the lanthanum nitrate available contained approximately 0.14% Ce, it was purified by the method of V. M. Klinayev and N. N. Senyavin (Ref. 12). The optical density of the solution was measured with a photoelectric

Card 1/3

Photometric Determination of Cerium by Means of o-Tolidine

S/075/60/015/004/013/030/XX
B020/B064

colorimeter of the type ФЭК-М (FEK-M) with a blue filter (permeability maximum at 410 mμ). Fig. 1 shows that the solutions follow the Beer law at concentrations up to 3 γ Ce/ml. The molar extinction coefficient is approximately 9500. The reaction with o-tolidine is 20 times as sensitive as with H_2O_2. The coloring produced remained stable for several hours under the chosen conditions, and vanished only on the following day. The yellow color remains unchanged for 20 minutes after the addition of the reagent; then it fades gradually (Fig. 2). A change of pH between 0 and 4 has no appreciable effect upon the sensitivity of the reagent. When using 12 mg of $La(NO_3)_3$ as a collector, the coprecipitation of 10 - 200 γ Ce proceeds quantitatively. Table 1 shows the reproducibility of the method, which is mainly due to the quantitative conversion of Ce^{III} to Ce^{IV}, and also the stability of the oxidation products of o-tolidine. The effect of Fe, Al, Mn, and Ti in amounts of Ce:Fe = 1:10,000, Ce:Al = 1:3,000, Ce:Mn = 1:350, and Ce:Ti = 1:100 was studied for the purpose of using this method for cerium determination in minerals and rocks. Fig. 1 shows the calibration curve used to determine cerium by means of o-tolidine. The time dependence of the optical density is illustrated in Fig. 2. Table 2

Card 2/3

Photometric Determination of Cerium by Means of o-Tolidine

S/075/60/015/004/013/030/XX
B020/B064

shows that under the above conditions, the coprecipitation of cerium proceeds practically quantitatively, that even in the presence of comparatively large iron and aluminum quantities, no soluble cerium oxalate complexes of these elements are formed, and that in the precipitation of both hydroxides and oxalates, no coprecipitation of manganese takes place in the presence of hydroxylamine hydrochloride. The fact that a number of elements is not coprecipitated with lanthanum oxalate, is also related to the separation of the latter in acid media. Thorium, yttrium, neodymium, praseodymium, ytterbium, terbium, and samarium have no disturbing effect. The method described was used to determine the cerium content in apatite, titanite, and monzonite (Table 3). There are 2 figures, 3 tables, and 12 references: 6 Soviet, 5 German, and 1 British

ASSOCIATION: Sofiyskiy gosudarstvennyy universitet (Bolgariya) (Sofiya State University (Bulgaria))

SUBMITTED: July 9, 1959

Card 3/3

IORDANOV, N.; DAIXEV, Khr.

Separation of small amounts of rare earth elements from minerals and rocks by chlorination with carbon tetrachloride. Zhur.anal.khim. 17 no.4:429-431 Jl '62. (MIRA 15:8)

1. Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Sofia.
(Rare earths--Analysis) (Carbon tetrachloride)

IORDANOV, N.; DAIYEV, Kh. [Daiev, Kh.]

The N, N, N', N' tetramethyl o-tolidine (Tetron) as reagent in determining small quantities of oxidants (Au (III), Ce (IV), BrO_3 etc.) Doklady BAN 16 no.1:69-72 '63.

1. Predstavleno chl.-korr. N. Penchevym.

IORDANOV, N.; DAIEV, Khr.

Distribution of cerium, and amount of rare-earth elements in certain effusive, intrusive, and metamorphic rocks in southern Bulgaria. Doklady BAN 17 no.1:49-52 '64

1. Predstavleno chlenom-korrespondentom N.P. Penchevym.

DAIKHES, A. I.

Professor Il'ia Mironovich Burakov; on his 70th birthday. Vest. otorin. no.2:123 '62. (MIRA 15:2)

(BURAKOV, IL'IA MIRONOVICH, 1891-)

RUBIN, S.S.; DAILEVSKIY, A.F.; IL'CHENKO, V.A.; KARASYUK, I.M.

Methods of studying the root systems of agricultural plants.
Bot. zhur. 47 no.8:1176-1184 Ag '62. (MIRA 15:10)

1. Umanskiy sel'skokhozyaystvennyy institit imeni A.M. Gor'kogo.

DAILIDONIENE, Jadvyga; KAMINSKIENE, L., red.

[Tuberculosis, an infectious disease] Tuberkulioze - uzkreciama liga. Vilnius, Valstybine politines ir mokslines lit-ros leid kla, 1963. 16 p. [In Lithuanian]
(MIRA 17:7)

DAILIDONIENE, J.

Tuberculosis morbidity in the Republic according to fluorographic data. Sveik. apsaug. 9 no.3:36-39 Mr'64

1. Respublikinio tuberkuliozes dispanserio vyr. gydytoja.

*

DAILIDONIENE, J.

Tuberculosis morbidity in the Republic according to fluorographic data. Sveik. Apsaug. no.3:36-39 '64.

1. Lietuvos respublikinio tuberkuliozes dispanserio vyr. gydytoja.

DAIMACA, Victor, prof.

Celestial phenomena in December 1961. Gaz mat fiz 13 no.10:559-560) 1961

(Mechanics, Celestial)

DAIMACA, Victor, prof.

Data on celestial phenomena in February 1962. Gaz mat fiz 13 no.12: 663-664 D '61.

DAIMACA, Victor, prof.

Celestial phenomena of March 1962. Gaz mat fiz 14 no.1:54-55 Ja '62.

DAIMACA, Victor,, prof.

Celestial phenomena of April 1962. Gaz mat fiz 14 no.2:110-111 F '62

DAIMACA, Victor, prof.

Celestial phenomena in May 162. Gaz mat fiz 14 no. 3:167-168. Mr '62

DAIMACA, Victor, prof.

The celestial phenomena in June 1962. Gaz mat fiz 14 no.4:
220-221 Ap '62.

DAIMACA, Victor, prof.

The celestial phenomena in July 1962. Gaz mat fiz 14 no.5: 279-280 My '62.

DAIMACA, Victor, prof.

Celestial phenomena in the month of August, 1962. Gaz mat fiz 14 no.6:333-334 Je '62.

DAIMACA, Victor, prof.

Celestial phenomena in September 1962. Gaz mat fiz 14 no.7: 391-392 Jl '62.

DAIMACA, Victor, prof.

Celestial phenomena in October 1962. Gaz mat fiz
14 no.8:445-446 Ag '62.

DAIMACA, Victor, prof.

Celestial phenomenon in November 1962. Gaz mat fiz 14 no.9:503-504 S '62.

DAIMACA, Victor, prof.

Celestial phenomena in December 1962. Gaz mat fiz 14 no.10:559-560
O '62.

DAIMACA, Victor, prof.

Celestial phenomena in January and February 1963. Gaz mat fiz 14 no.11/12:653-655 N-D '62.

DAIMACA, Victor, prof.

Celestial phenomena in March 1963. Gaz mat fiz 15 no.1:55-56
Ja '63.

DAIMACA, Victor, prof.

Celestial phenomena in April 1963. Gaz mat fiz 15 no.2:110-111 F '63.

DAIMACA, Victor, prof.

Celestial phenomena in May 1963. Gaz mat fiz 15 no.3:166-167
Mr '63.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 15 no.4:221-222 Ap '63.

DAIMACA, Victor, prof.

Celestial phenomena in July 1963. Gaz mat fiz 15 no.5:277-278
My '63.

DAIMACA, Victor, prof.

Celestial phenomena in August 1963. Gaz mat fiz 15 no.6:
335-336 Je '63.

DAIMACA, Victor, prof.

Celestial phenomena in September 1963. Gaz mat fiz 15 no.7:390-391 Jl '63.

DAIMACA, Victor, prof.

Celestial phenomena in November 1963. Gaz mat fiz 15 no.9:504-505 S '63.

DAIMACA, Victor, prof.

Celestial phenomena in December 1963. Gaz mat fiz 15 no.10:558-559 O'63.

DAIMACA, Victor, prof.

Celestial phenomena in October 1963. Gaz mat fiz 15 no. 8: 447-478 Ag '63.

DAIMACA, Victor, prof.

Celestial phenomena in January 1964. Gaz mat fiz 15 no.11: 667-668 N '63.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 15 no.12:724-725 D '63.

DAIMACA, Victor, prof.

Planetary phenomena in May 1964. Gaz mat fiz 69 no. 4:
156-157 Ap '64.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 69 no. 5:197 My '64.

DAIMACA, Victor, prof.

Planetary phenomena during July 1964. Gaz mat fiz 69 no.6:231-232 Je'64.

DAIMACA, Victor

Planetary phenomena in August 1964. Gaz mat fiz 69 no. 7:
278 Jl '64.

LAIMACA, Victor, prof.

Astronomical data. Gaz. mat fiz 69 no.8:319 Ag'64.

[illegible], Victor, prof. (Bucharest)

Planetary phenomena in April 1964. Gaz mat fiz 69 no.3:[illegible] Mr '64.

DAIMACA, Victor, prof.

Astroronical data. Gaz mat fiz 69 no.9:360 S '64.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 69 no.10:400-401 O '64.

DAIMACA, Victor, prof. (Bucuresti)

Astronomical data. Gaz mat fiz 69 no.11:439-440 N '64.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 70 no.2:75 F '65.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 70 no.4:159 Ap '65.

DAIMACA, Victor, prof.

Astronomical data. Gaz mat fiz 70 no.3:119 Mr '65.

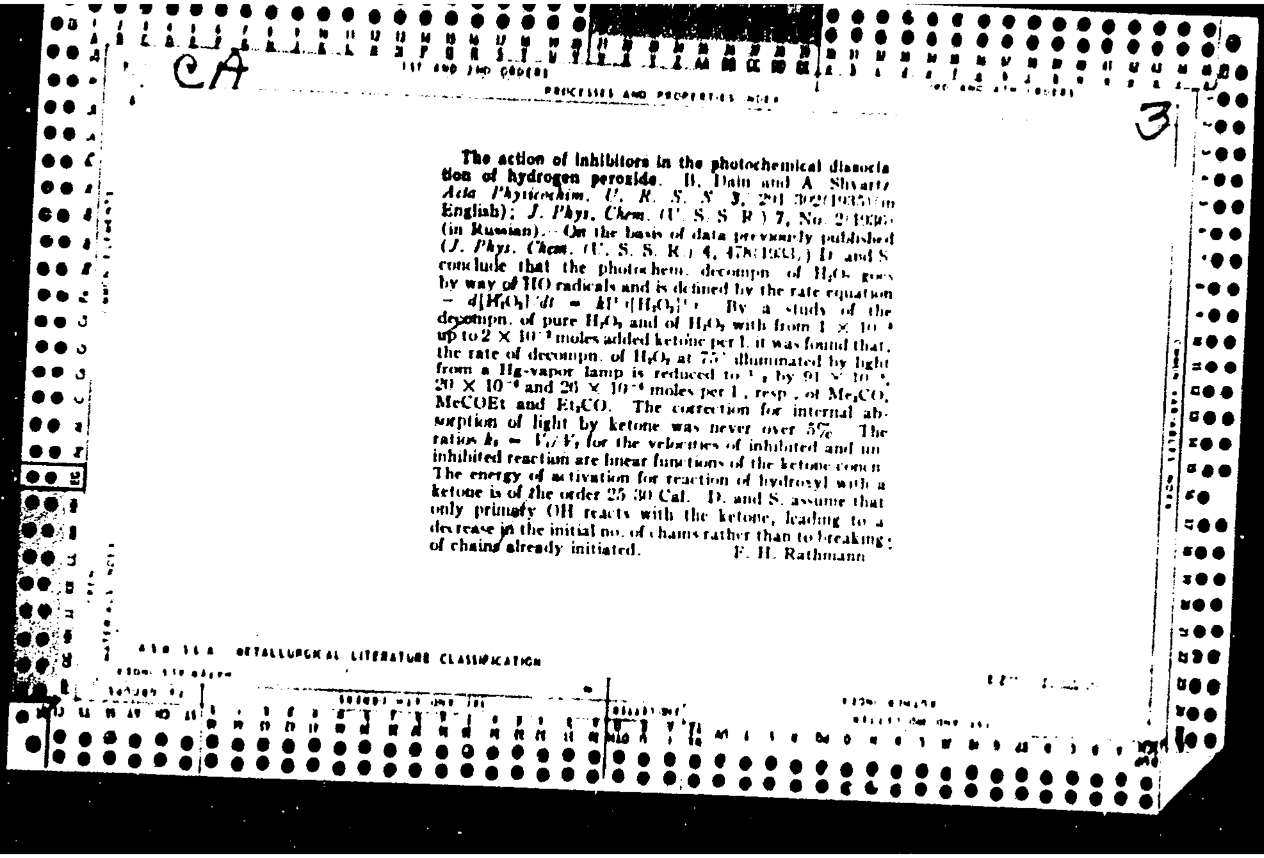
PROCESSES AND PROPERTIES INDEX

3

The use of the hydrolysis of monochloroacetic acid for absolute actinometric measurements. B. I. Dain and E. S. Pusenkin. *Ber. ukrain. wiss. Forsch.-Inst. physik. Chem.* 4, 75-81(1934).—To test the method the quantum yield in the photolysis of H_2O_2 was measured. The results obtained in this manner for the quantum yields of H_2O_2 solns. of different concns. are in agreement with those of Allmand and Style (*C. A.* 24, 3711) who measured the energy absorbed with thermopiles. The method is particularly suited to solns. which absorb strongly.

W. R. Keighton

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3

The action of inhibitors in the photochemical dissociation of hydrogen peroxide. B. Dain and A. Shvarts. *Acta Physicochim. U. R. S. S.* **3**, 291-302(1935)(in English); *J. Phys. Chem.* (U. S. S. R.) **7**, No. 2(1936) (in Russian).—On the basis of data previously published (*J. Phys. Chem.* (U. S. S. R.) **4**, 478(1933).) D. and S. conclude that the photochem. decompn. of H_2O_2 goes by way of HO radicals and is defined by the rate equation $-d[H_2O_2]/dt = kI^{1/2}[H_2O_2]^{1/2}$. By a study of the decompn. of pure H_2O_2 and of H_2O_2 with from 1×10^{-4} up to 2×10^{-3} moles added ketone per l. it was found that the rate of decompn. of H_2O_2 at 75° illuminated by light from a Hg-vapor lamp is reduced to $\frac{1}{2}$ by 91×10^{-4}, 20×10^{-4} and 26×10^{-4} moles per l., resp., of Me_2CO, MeCOEt and Et_2CO. The correction for internal absorption of light by ketone was never over 5%. The ratios $k_i = V_0/V_i$ for the velocities of inhibited and uninhibited reaction are linear functions of the ketone concn. The energy of activation for reaction of hydroxyl with a ketone is of the order 25-30 Cal. D. and S. assume that only primary OH reacts with the ketone, leading to a decrease in the initial no. of chains rather than to breaking of chains already initiated. F. H. Rathmann

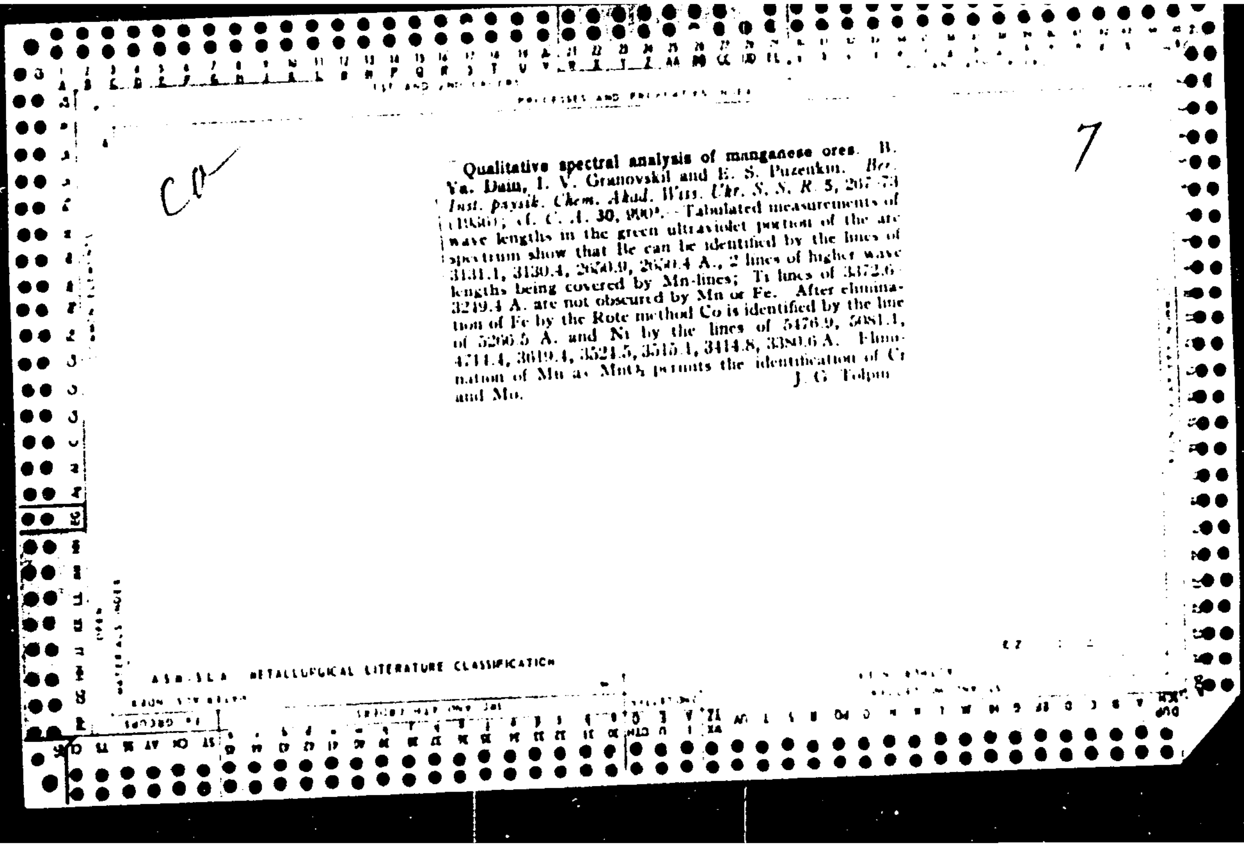
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

7

Method of spectral analysis of complicated mixtures. B. Ya. Dain, I. V. Granovskii and F. S. Furenkin. *J. Gen. Chem. (U. S. S. R.)* [illegible] Standards for the quant. spectroscopic analysis of the system Mn-Cu and the effect of impurities [illegible] Ni, K, Ba, Al, Si and Fe [illegible] are indicated.

S. L. Madorsky

METALLURGICAL LITERATURE CLASSIFICATION



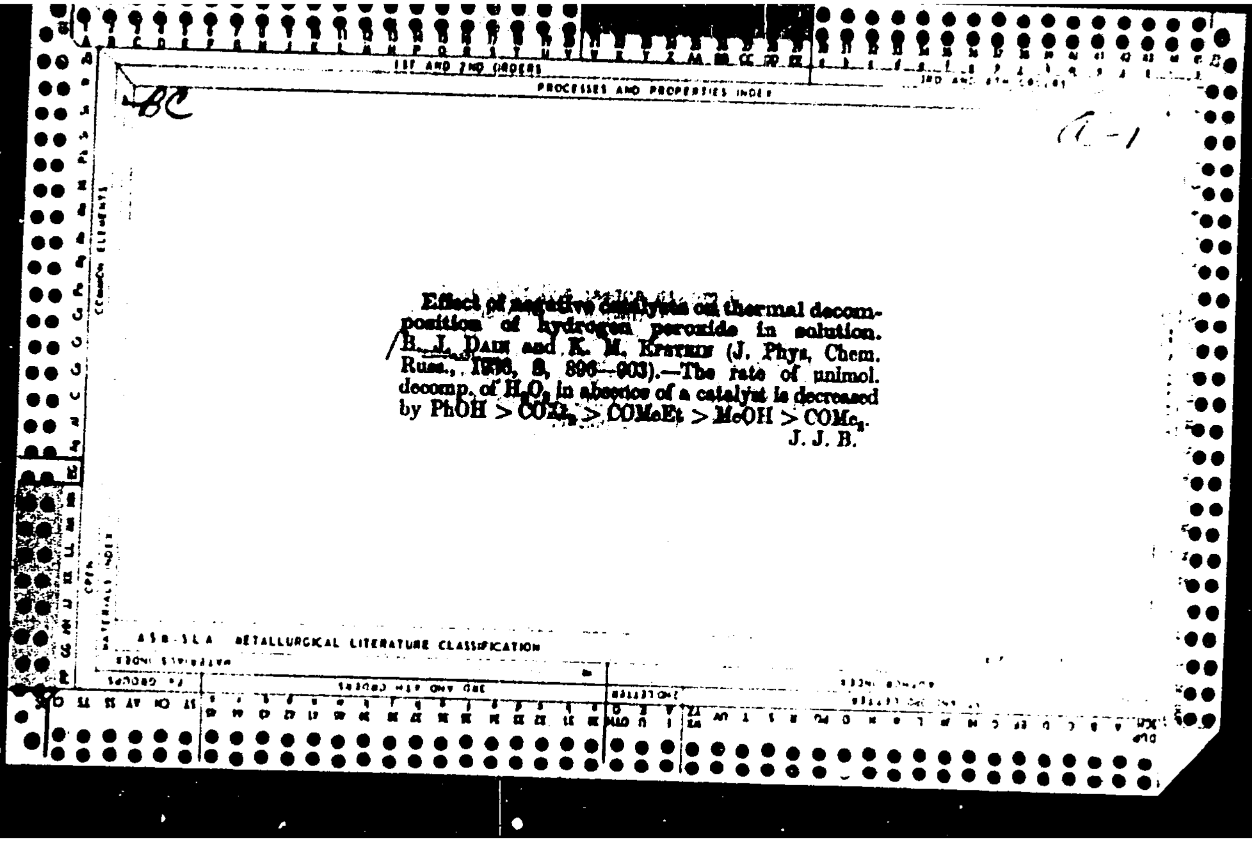
PROCESSES AND PROPERTIES INDEX

Co

7

Qualitative spectral analysis of manganese ores. B. Ya. Daim, I. V. Granovskii and E. S. Puzenkin. *Ber. Inst. physik. Chem. Akad. Wiss. Ukr. S. S. R.* 5, 267-73 (1936); cf. C. A. 30, 900⁴.—Tabulated measurements of wave lengths in the green ultraviolet portion of the arc spectrum show that Be can be identified by the lines of 3131.1, 3130.4, 2650.9, 2650.4 A., 2 lines of higher wave lengths being covered by Mn-lines; Ti lines of 3372.6-3249.4 A. are not obscured by Mn or Fe. After elimination of Fe by the Rote method Co is identified by the line of 5266.5 A. and Ni by the lines of 5476.9, 5081.1, 4714.4, 3619.4, 3524.5, 3515.1, 3414.8, 3380.6 A. Elimination of Mn as MnO₂ permits the identification of Cr and Mo. J. G. Tolpin

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

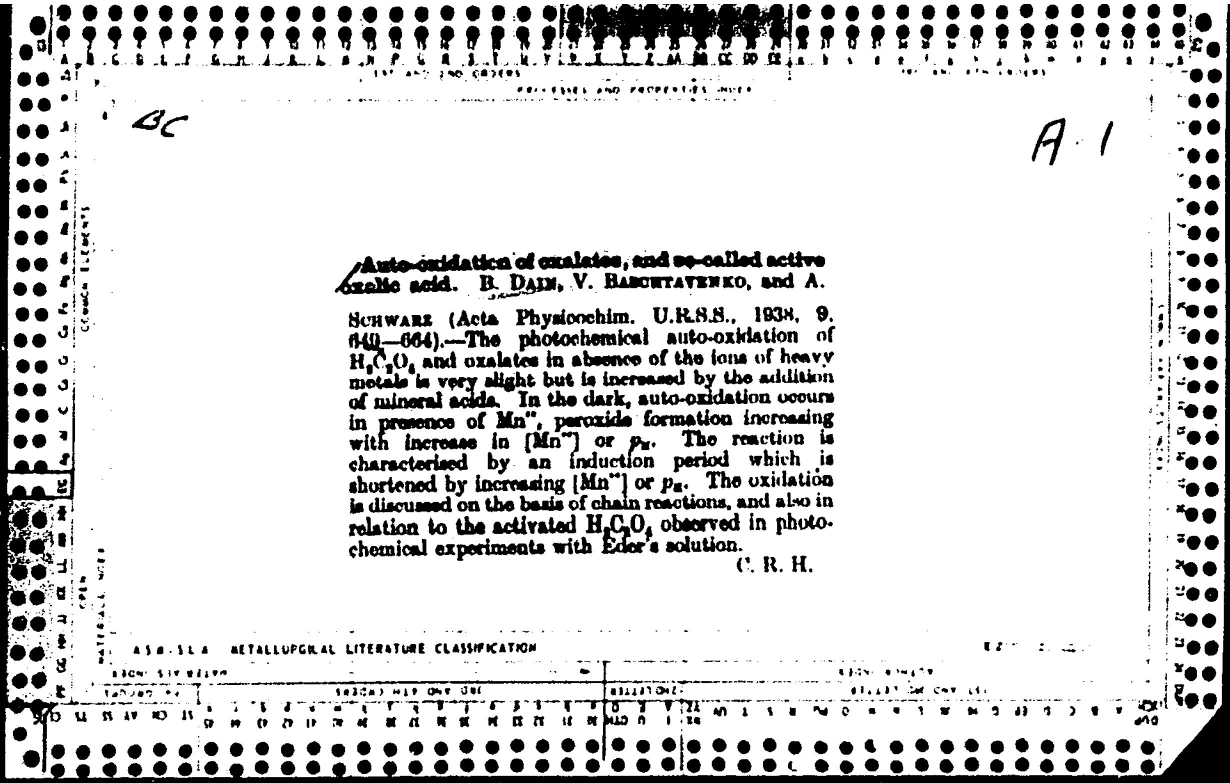


BC

A-1

Effect of negative catalysts on thermal decomposition of hydrogen peroxide in solution. B. J. Dain and K. M. Epstein (J. Phys. Chem. Russ., 1936, 8, 896—903).—The rate of unimol. decomp. of H_2O_2 in absence of a catalyst is decreased by PhOH > $COEt_2$ > COMeEt > MeOH > $COMe_2$.

J. J. B.



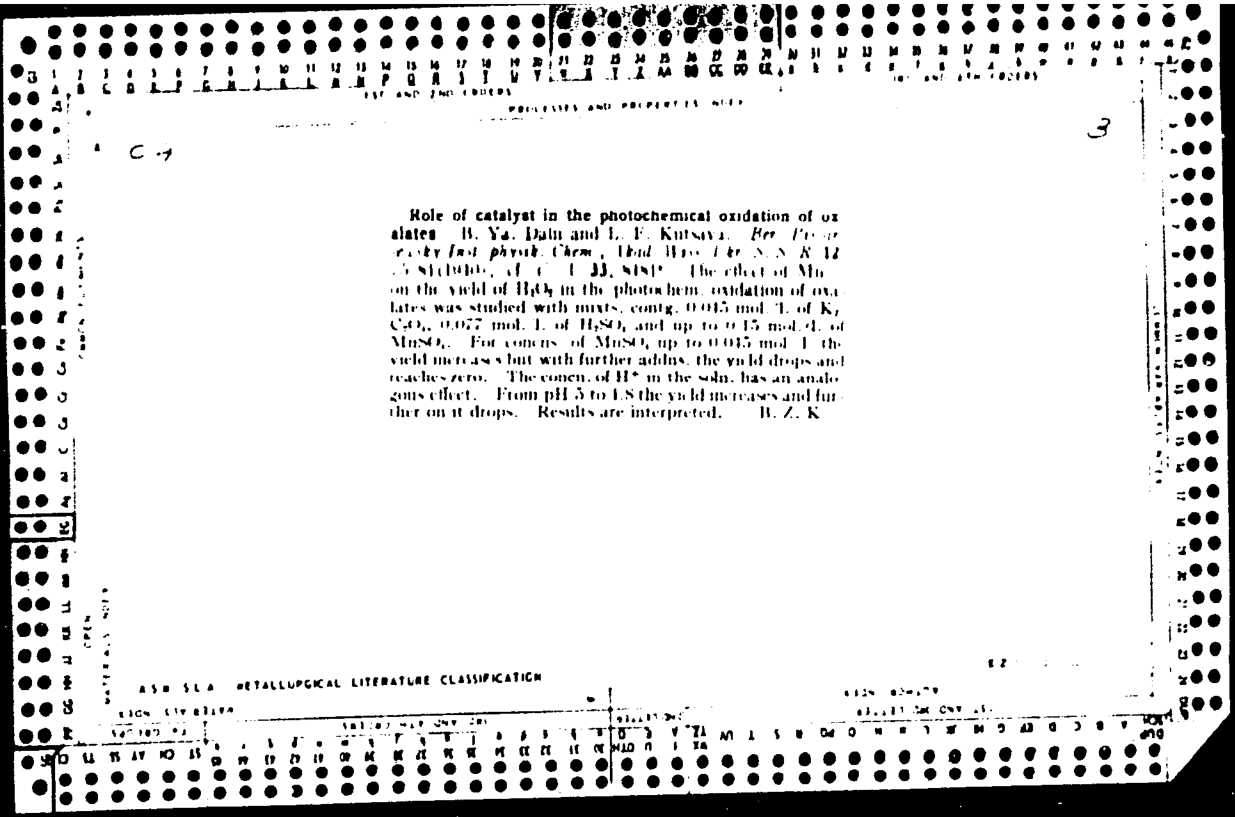
BC

A-1

Auto-oxidation of oxalates, and so-called active oxalic acid. B. Dain, V. Baschtavenko, and A. Schwarz (Acta Physicochim. U.R.S.S., 1938, 9, 649—664).—The photochemical auto-oxidation of $H_2C_2O_4$ and oxalates in absence of the ions of heavy metals is very slight but is increased by the addition of mineral acids. In the dark, auto-oxidation occurs in presence of Mn'', peroxide formation increasing with increase in [Mn''] or p_H. The reaction is characterised by an induction period which is shortened by increasing [Mn''] or p_H. The oxidation is discussed on the basis of chain reactions, and also in relation to the activated $H_2C_2O_4$ observed in photochemical experiments with Eder's solution.

C. R. H.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



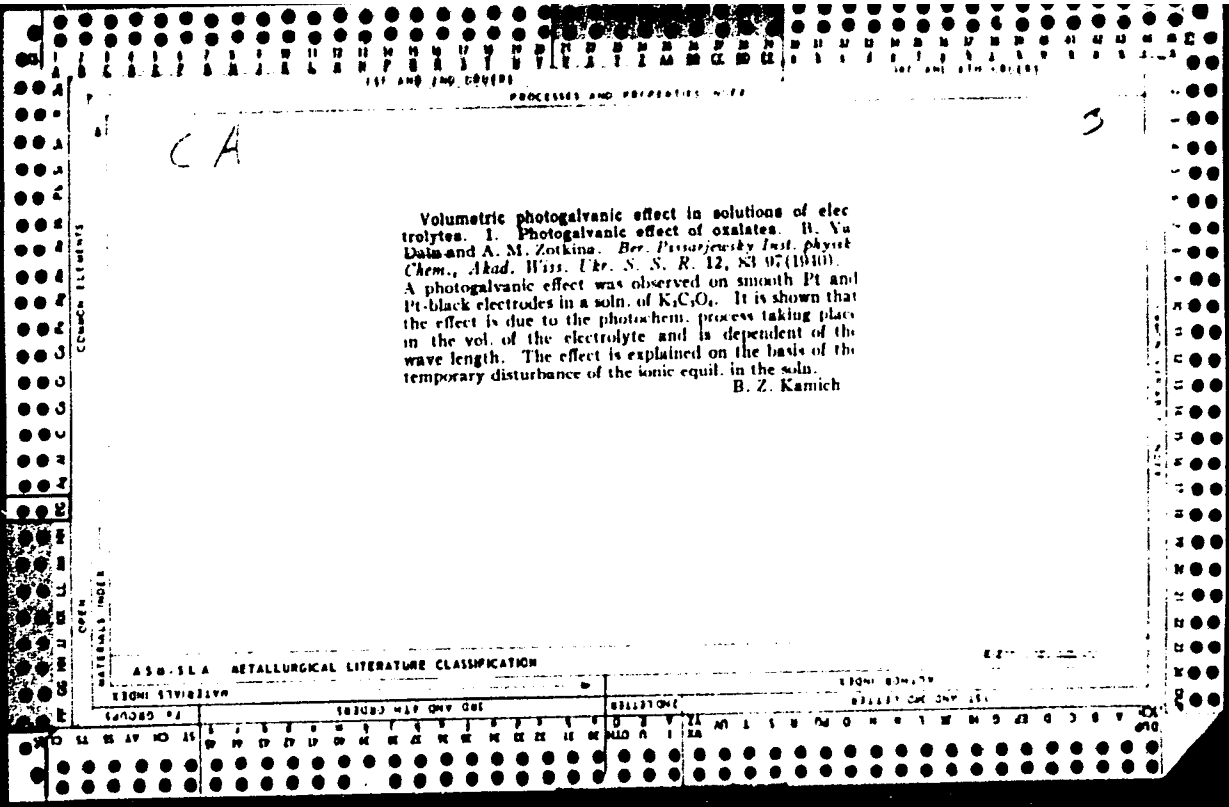
C-1

3

PROCESSES AND PROPERTIES INDEX

Role of catalyst in the photochemical oxidation of oxalates B. Ya. Dain and L. F. Kutseva. *Ber. Pisarzhevsky Inst. physik. Chem., Akad. Wiss. Ukr. S.S.R.* 12, 25-8(1940); cf. C. A. 33, 8181°. The effect of Mn on the yield of H_2O_2 in the photochem. oxidation of oxalates was studied with mixts. contg. 0.015 mol./l. of $K_2C_2O_4$, 0.077 mol./l. of H_2SO_4 and up to 0.15 mol./l. of $MnSO_4$. For concns. of $MnSO_4$ up to 0.015 mol./l. the yield increases but with further addns. the yield drops and reaches zero. The concn. of H^+ in the soln. has an analogous effect. From pH 5 to 1.8 the yield increases and further on it drops. Results are interpreted. B. Z. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

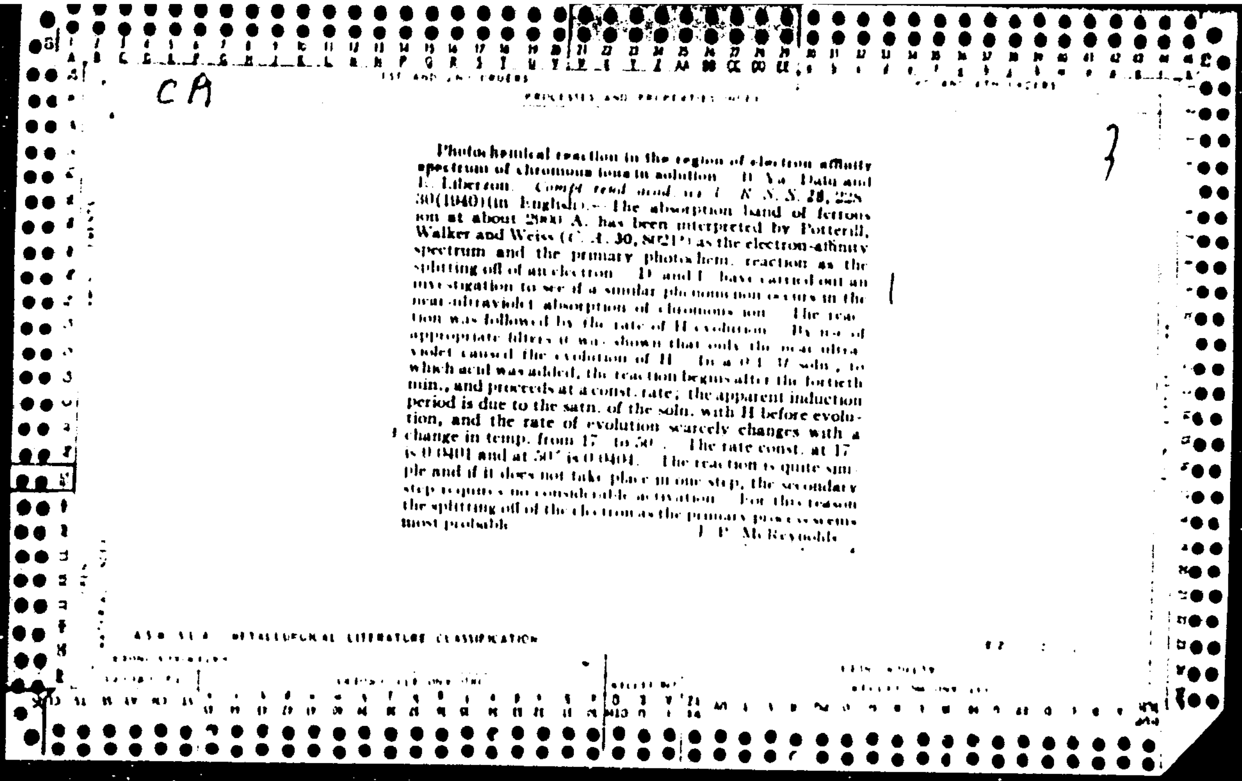
CA

3

Volumetric photogalvanic effect in solutions of electrolytes. I. Photogalvanic effect of oxalates. B. Yu Dain and A. M. Zotkina. *Ber. Pissarjewsky Inst. physik Chem., Akad. Wiss. Ukr. S. S. R.* 12, 83 97(1940).—A photogalvanic effect was observed on smooth Pt and Pt-black electrodes in a soln. of $K_2C_2O_4$. It is shown that the effect is due to the photochem. process taking place in the vol. of the electrolyte and is dependent of the wave length. The effect is explained on the basis of the temporary disturbance of the ionic equil. in the soln.

B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

PROCESSES AND PROPERTIES INDEX

3

Photochemical reaction in the region of electron affinity spectrum of chromous ions in solution. B. Ya. Dain and E. Liberzon. *Compt. rend. acad. sci. U. R. S. S.* **28**, 228-30(1940)(in English).—The absorption band of ferrous ion at about 2300 A. has been interpreted by Potterill, Walker and Weiss (*C. A.* **30**, 8021⁵) as the electron-affinity spectrum and the primary photochem. reaction as the splitting off of an electron. D. and L. have carried out an investigation to see if a similar phenomenon occurs in the near-ultraviolet absorption of chromous ion. The reaction was followed by the rate of H evolution. By use of appropriate filters it was shown that only the near ultraviolet caused the evolution of H. In a 0.1 *M* soln., to which acid was added, the reaction begins after the fortieth min., and proceeds at a const. rate; the apparent induction period is due to the satn. of the soln. with H before evolution, and the rate of evolution scarcely changes with a change in temp. from 17° to 50°. The rate const. at 17° is 0.0401 and at 50° is 0.0404. The reaction is quite simple and if it does not take place in one step, the secondary step requires no considerable activation. For this reason the splitting off of the electron as the primary process seems most probable.

J. P. McReynolds

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

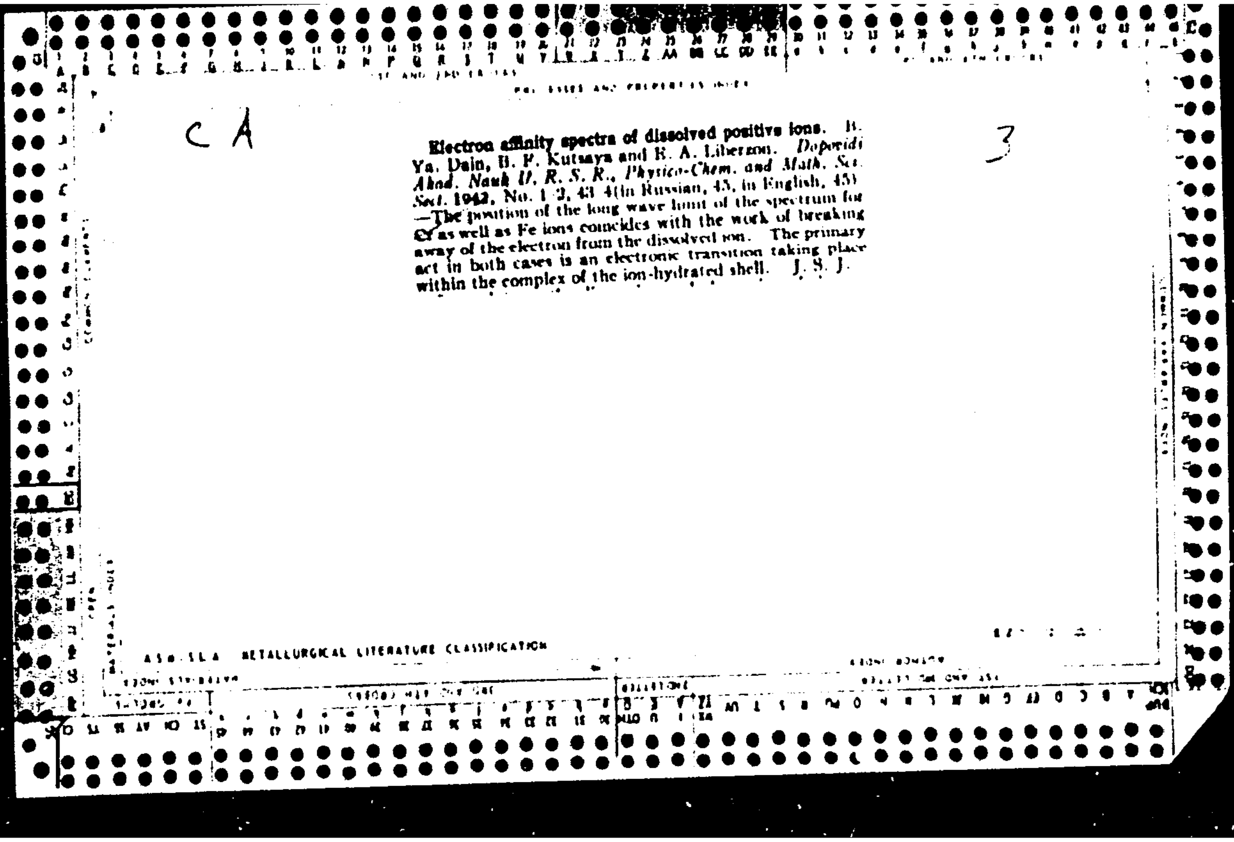
CA

2

The problem of the mechanism of decomposition of sodium hypochlorite. T. S. Glikman and B. Ya. Dain. *J. Gen. Chem.* (U. S. S. R.) 11, 190-6(1941).—The decompn. of NaClO goes in two directions: (1) with evolution of O: $2ClO \rightarrow 2Cl^- - O_2$, and (2) with formation of chlorate: $3ClO^- \rightarrow ClO_3^- + 2Cl^-$. The removal of the heterogeneous admixts. changes the direction of the kinetic curve of the evolution of O. The curve attains an autocatalytic character. Filters of different porosity were used for the filtration. The purer solns. were more stable. A NaClO soln. made from very pure chemicals proved to be very stable. The catalyst increases the decompn. of NaClO in both directions, but it is less noticeable in the reaction with formation of chlorates. The investigation leads to the assumption that both directions of the decompn. of NaClO are based on the same primary process. 11 references.

S. Machelson

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

3

Electron affinity spectra of dissolved positive ions. B. Ya. Dain, B. P. Kutsaya and E. A. Liberzon. *Doporidi Akad. Nauk U. R. S. R., Physico-Chem. and Math. Sci. Sect.* **1942**, No. 1-2, 43-4(in Russian, 43, in English, 43). —The position of the long wave limit of the spectrum for Cr as well as Fe ions coincides with the work of breaking away of the electron from the dissolved ion. The primary act in both cases is an electronic transition taking place within the complex of the ion-hydrated shell. J. S. J.

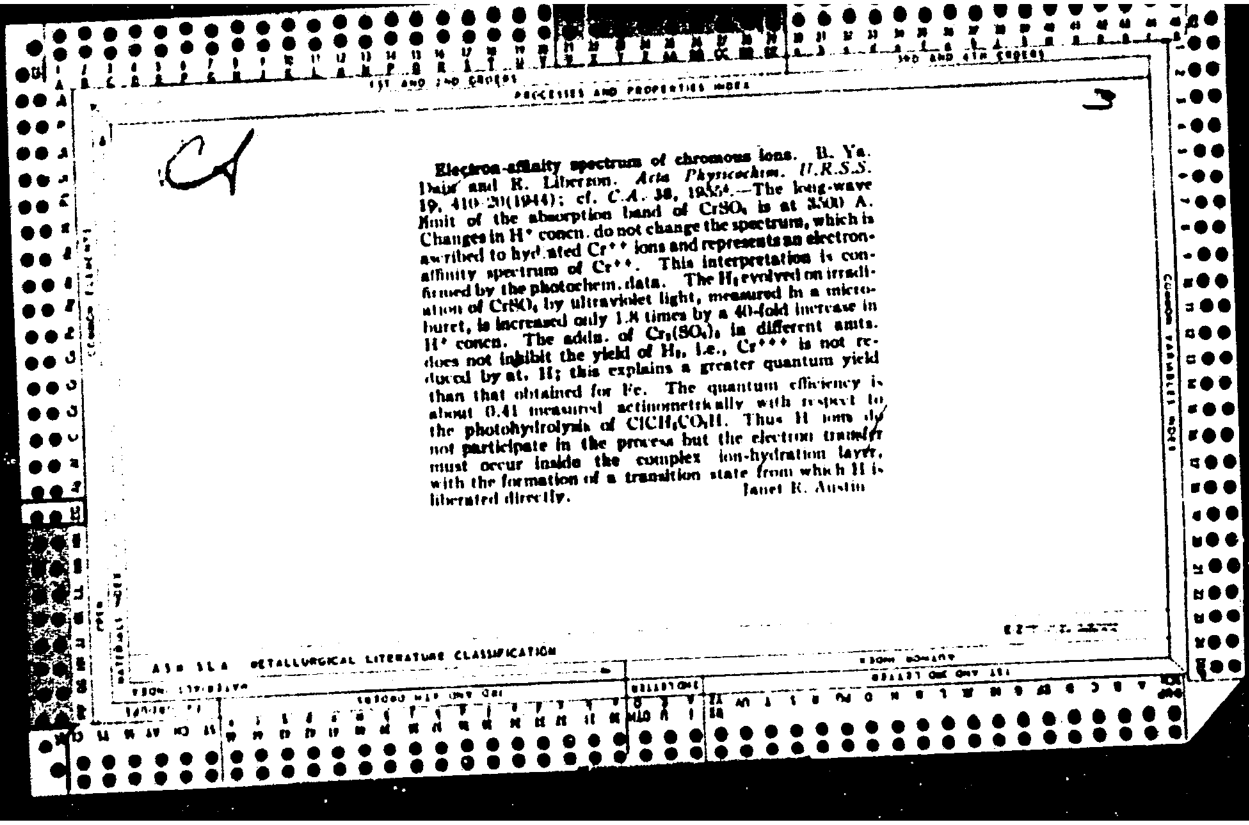
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

DAIN, B. Ya; KUTSAYA, B. F.; LIBERZON, E. A.

Inst of Physical Chemistry imeni L. V. Pisarzhevskiy, Acad. of Sci. (-1941-)

"Reactions in the Spectrums of Electron Affinity of Ions of Bivalent Chromium and Iron." Zhur. Fiz. Khim., Vol. 17, No. 4, 1943

BR-52059019



1ST AND 2ND GROUPS

PROCESSES AND PROPERTIES INDEX

Cr

3

Electron-affinity spectrum of chromous ions. B. Ya.
Dain and R. Liberson. *Acta Physicochim. U.R.S.S.*
19, 410-20(1944); cf. *C.A.* 38, 1956.—The long-wave
limit of the absorption band of $CrSO_4$ is at 3500 A.
Changes in H^+ concn. do not change the spectrum, which is
ascribed to hydrated Cr^{++} ions and represents an electron-
affinity spectrum of Cr^{++}. This interpretation is con-
firmed by the photochem. data. The H_2 evolved on irradi-
ation of $CrSO_4$ by ultraviolet light, measured in a micro-
buret, is increased only 1.8 times by a 40-fold increase in
H^+ concn. The addn. of $Cr_2(SO_4)_3$ in different amts.
does not inhibit the yield of H_2, i.e., Cr^{+++} is not re-
duced by at. H; this explains a greater quantum yield
than that obtained for Fe. The quantum efficiency is
about 0.41 measured actinometrically with respect to
the photohydrolysis of $ClCH_2CO_2H$. Thus H ions do
not participate in the process but the electron transfer
must occur inside the complex ion-hydration layer,
with the formation of a transition state from which H is
liberated directly. Janet R. Austin

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

3

Photochemical reactions in electrolyte solutions B. Ya. Dain. *Uspekhi Khim.* 15, 530-50(1946). A critical review with 50 literature references up to 1943. N. I.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

3

New data on electronic transport bands in electrolyte *Izvest. Akad. Nauk S.S.S.R.*,
solutions. B. Ya. Dain. Absorption curves were taken
Ser. Fiz. 12, 513-18(1948).—
on solns. of Fe$(ClO_4)_3$ and Cu$(ClO_4)_2$ in H_2O, EtOH,
MeOH, BuOH, and in solns. contg. variable amts. of
$HClO_4$. If such acidified solns. are frozen in a vacuum and
illuminated with ultraviolet light, a small development of
O can be observed as well as formation of Fe^{++} ions from
ultraviolet absorption by Fe^{+++} ions; it is shown that the
photochem. effect takes place on hydrated ions only.
The long-wave threshold of the absorption band is shifted
toward longer wave lengths in alc. solns. of increasing mol.
wt. Photochem. tests in alc. show an increase in H and
aldehydes in the solvent upon illumination. S. P.

CA

2

L. V. Pisarzhevskii. Pioneer of electron chemistry. B. Ya. Dain. *Uspekhi Khim.* 17, 508-12(1948). [illegible]

DAIN, B. YA.

TA 9/49T9

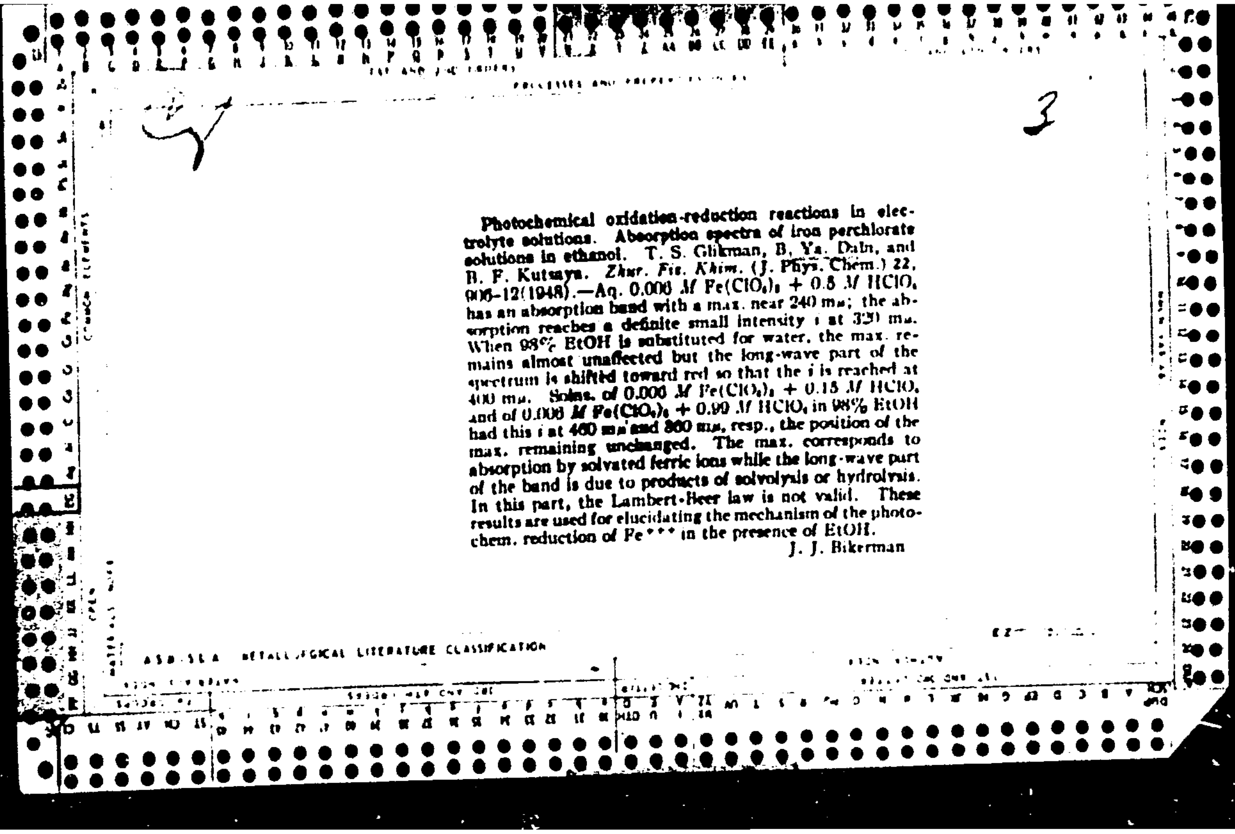
USSR/Chemistry - Tungstates, Reduction of Jun 48
Chemistry - Molybdates, Reduction of

"New Data on the Structure of Molybdenum and Tungsten Blue Derivatives," Z. M. Vaysberg, B. Ya. Dain, Inst of Phys Chem imeni L. V. Pisarzhevskiy, Acad Sci Ukrainian SSR, 5 3/4 pp

"Zhur Obshch Khim" Vol XVIII(LXXX), No 6 - p.1437

Prepares and investigates absorption spectra of molybdate and tungstate reduction products in presence of phosphorous, silicon, boron and arsenic salts. Compounds have various spectra and can be regarded as derivatives of molybdenum and tungsten blue. Submitted 28 Jan 1947.

[redacted] 9/49T9



3

Photochemical oxidation-reduction reactions in electrolyte solutions. Absorption spectra of iron perchlorate solutions in ethanol. T. S. Glikman, B. Ya. Dain, and B. F. Kutsaya. *Zhur. Fiz. Khim.* (J. Phys. Chem.) 22, 906-12(1948).—Aq. 0.008 M $Fe(ClO_4)_3$ + 0.8 M $HClO_4$ has an absorption band with a max. near 240 mμ; the absorption reaches a definite small intensity i at 320 mμ. When 98% EtOH is substituted for water, the max. remains almost unaffected but the long-wave part of the spectrum is shifted toward red so that the i is reached at 400 mμ. Solns. of 0.000 M $Fe(ClO_4)_3$ + 0.15 M $HClO_4$ and of 0.008 M $Fe(ClO_4)_3$ + 0.90 M $HClO_4$ in 98% EtOH had this i at 460 mμ and 860 mμ, resp., the position of the max. remaining unchanged. The max. corresponds to absorption by solvated ferric ions while the long-wave part of the band is due to products of solvolysis or hydrolysis. In this part, the Lambert-Beer law is not valid. These results are used for elucidating the mechanism of the photochem. reduction of Fe^{+++} in the presence of EtOH.

J. J. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

DAIN, B. YA. PA 11/49T12

USSR/Chemistry - Spectra, Absorption Jul 48
Chemistry - Iron, Ferric

"Nature of the Ultraviolet Bands Adsorbing Trivalent Iron Ions," B. Ya. Dain, A. A. Kachan, Inst Phys Chem imeni L. V. Pisarzhevskiy, Acad Sci USSR, 3½ pp

"Dok Ak Nauk SSSR" Vol LXI, No 3

Reports experiments. Results confirm view that spectrum band of Fe^{3+} ions is an "electron transfer spectrum." Submitted 24 Apr 48.

11/49T12

AYSBERG, Z.M.; DAIN, B.Ya.

Chemical nature of the derivatives of molybdenum and tungsten blues. Dop.AN URSR no.5:33-38 '49. (MIRA 9:9)

1.Institut fizichnoi khimii imeni L.V.Pisarzhevs'kogo AN URSR Viddil fotokhimii.Predstaviv diysniy chlen AN URSR O.I.Brods'kiy.
(Pigments)

DAIN, B. YA

PA 54/49T102

USSR/Physics
Ions
Catalysis

Jul 49

"Heterogeneous Phenomena in the Photoreduction Process of Ions in a Tetravalent Series," B. Ya. Dain, A. A. Kachan, Inst of Physicochem imeni L. V. Pisarzhevskiy, Acad Sci USSR, 3 3/4 pp

"Dok Ak Nauk SSSR" Vol LXVII, No 1

Experiments cited show that in the photoreduction reaction of a perchlorate in a tetravelent series, influence of the walls of the container on the basic process is very great. and is of a clearly catalytic

54/49T102

USSR/Physics (Contd)

Jul 49

nature. Aftereffect is not completely explained, but is connected with the observed catalytic effect. Submitted by Acad A. N. Terenin 3 May 49.

54/49T102

DAIN, B. YA.

④ Chem

Nuclear Sci. Abs.
V-8 Jan 15, 1954
Biology & Medicine

CONCERNING THE NATURE OF THE REACTION OF CHLOROPHYLL WITH INORGANIC IONS. M. S. Ashkinazi, T. S. Glikman, and B. [Ya.] Dain [Dahn]. [Translated by] L. V. Pisarzhevskii [Pisarjevsky] from *Doklady Akad. Nauk S.S.S.R.* **73**, 743-6(1950). 8p. (UCRL-Trans-90)

L 10311-66 EWT(m) DIAAP

ACC NR: AP5026404 SOURCE CODE: UR/0386/65/002/006/0266/0269

AUTHOR: Dalidchik, F. I.; Sayasov, Yu. S. 18 B

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

TITLE: Exchange effect in elastic scattering of polarized identical nuclei 19

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 6, 1965, 266-269

TOPIC TAGS: elastic scattering, proton polarization, Coulomb interaction

ABSTRACT: In view of the increasing importance of experiments on the polarization of the products of direct nuclear reactions, for the purpose of explaining their concrete mechanism of determining the spectroscopic characteristics of the nuclei, the authors analyze theoretically the elastic scattering of Coulomb-interacting polarized identical particles. It is shown that when a completely polarized beam is scattered by a completely polarized target interference takes place only when the polarizations of the beam and the target coincide. This is the quantum analog of a fact well known in optics, that there is no interference between two light rays which are polarized in mutually perpendicular planes. In the general case it follows from the analysis that the intensity of the oscillations of the exchange term depends essentially on the degree of polarization of the beam and of the target, as illustrated in Fig. 1 for the case of particles with spin I = 1. This can serve as a basis for a new method of detecting polarization of slow charged particles. Since the procedure for ob-

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2

L 10311-66

ACC NR: AP5026404

taining polarized targets is being continuously perfected and there are now already twenty different methods for accomplishing this, the proposed method can find application in a large group of experiments, including measurement of polarization of slow protons and of nuclei of light and medium elements, which is of particular importance in connection with the ever increasing use of multiply-charged ions in nuclear physics. Orig. art. has: 1 figure and 4 formulas.

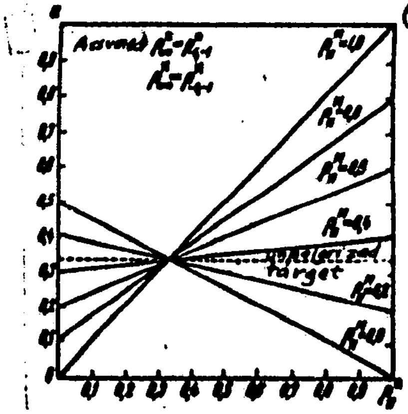

Fig. 1. Oscillation intensity vs. target polarization for particles with spin I = 1.

SC: 18/ SUBM DATE: 19Jul65/ ORIG REF: 002/ OTH REF: 001

Card 2/2

DaYn, B. Ya.

[illegible]

[illegible] 50% H_2O the decomposition [illegible] was greatly retarded but [illegible] The influence of salts [illegible] Cu++ [illegible] Co++, and Zn++ [illegible] Of these, only Cu++ [illegible] exerted a strong retarding action while the others appeared to show no effect. John A. Krynitsky

DAYN, B. Ya.

✓The chemical nature and structure of the derivatives of molybdenum and tungsten blue. Z. M. Vaisberg and B. Ya. Dain. *Izvest. Sektora Platiny i Drug. Blagorod. Metal., Akad. Nauk S.S.S.R., Inst. Obshchei i Neorg. Khim.* No. 26, 154-62(1951).—By aid of a medium-sized Hilger spectrograph the ultraviolet absorption curves of phosphomolybdic, silicomolybdic, arsenomolybdic, phosphotungstic, silicotungstic, phosphomolybdovanadic (I) acids, and the reduction products thereof, i.e. the various Mo and W blues, were plotted (200–450 mμ), also the compds. were analyzed. The various blues showed only a slight increase in the percentage of the constituents; e.g.: I before and after reduction, resp., contained Mo 60.2 and 60.8, P 1.50 and 1.55, V 2.35 and 2.40%. As the spectral curves are very similar to one another (the absorptions almost always obey Lambert-Beer's law), it is concluded that the original compds. and the blues produced therefrom have very similar structures. Therefore it is proposed to call the blues "heteropoly acids of the reduced series." W. J.

DAIN, B. Ya.

USSR/Chemistry - Chlorophyll 21 Sep 51

"Photochemical Properties of the Iron-Chlorophyll Complex," M. S. Ashkinazi, B. Ya. Dain, Inst of Phys Chem imeni Pisarzhevskiy, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXX, No 3, pp 385-388

The iron-chlorophyll complex, prepd by chem means in both the oxidized and the reduced form, gives absorption curves with intensity peaks at 610 millicrons for the oxidized and 645 millimicrons for the reduced form. Upon exposure of the oxidized form to a 1,000 watt lamp, intensity peaks appeared at 640 - 650 millicrons after 4 hrs of

210T31

USSR/Chemistry - Chlorophyll 21 Sep 51
(Contd)

exposure and at 610 millimicrons after 10 hrs of exposure. Visible light is capable of reducing the oxidized iron-chlorophyll complex as shown by other absorption on curves. The same effect is produced by light from a mercury quartz lamp, only much faster. Temp between 10 - 22° has no effect on photo reduction.

210T31

C.A.

Photochemistry of chlorophyll at liquid-air temperature A. A. Kachan and B. Ya. Dain (L. V. Pisarzhevskii Phys.-Chem. Inst., Acad. Sci. Ukr. S.S.R., Kiev). *Doklady Akad. Nauk S.S.S.R.* **80**, 619-22(1951).—On cooling from room to liquid-air temp., the absorption coeff. in the red absorption band of chlorophyll (a + b) in soln. in EtOH (0.040-0.078 g./l.) increases; prolonged irradiation with visible or with near-ultraviolet light (high-pressure Hg lamp) produces no further changes of absorption. Solns. of chlorophyll in a 1:3 mixt. of EtOH with Et_2O show the same increase of absorption in the red on cooling to liquid-air temp. In this mixed solvent, irradiation with near ultraviolet at liquid-air temp. produces a decrease of the absorption in the red, which persists on standing in the dark at the liquid-air temp., but disappears on warming up to room temp. The change taking place on ultraviolet irradiation at liquid-air temp. is attributed to dissocn. into a pos. chlorophyll ion and an electron. If one assumes, with Terenin, that the pos. ion splits off a proton, the stability of the system at liquid-air temp. in the mixed EtOH + Et_2O solvent appears to be due to a fixation of the proton by Et_2O, in the form of the oxonium ion Et_2OH^+. This process does not take place in soln. in EtOH alone. Visible-light quanta are insufficient to produce ionization, and can give rise only to unstable excited states which may interact with the solvent. N. Thon

1. ASHKINAZI, M. S.; GLIKMAN, G. S.; DAYN, B. YA.

2. USSR (600)

4. Iron Salts

7. Nature of the interaction of chlorophyll with iron salts, Ukr. khim. zhur., 17, no. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

DAIN, B. YA.

③

Interaction of chlorophyll with iron salts. M. S. Ashkinazi, T. S. Glikman, and B. Ya. Dain. *Ukrain. Khim. Zhur.* 18, 49-54(1952); cf. *C.A.* 45, 1209d.—Reiteration of the previous statement that the changes in absorption spectra of chlorophyll on the addn. of Fe^{++} or Fe^{+++} are due to complex formation rather than oxidation-reduction phenomena.

J. P. Danehy

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Biological Chemistry

DAIN, B.Ya.

Research of T.D.Grotthus in photochemistry and the theory of colors.
Ukr.khim.zhur. 20 no.1:93-99 '54. (MLRA 7:3)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo Akademii nauk
USSR. (Grotthus, Theodor D., 1785-1822)

DAIN, B.YA.

3

Dark and photochemical reaction of films of triphenylmethane dyes with oxygen and moisture. I. I. Dilung and B. Ya. Dain (*Dokl. Akad. Nauk SSSR*, 1954, 95, 1001—1004).—The displacement between the absorption max. of alcoholic solutions of Crystal violet and Malachite green and their films deposited on glass is caused by chemisorption of water vapour on the latter. The decolorisation of the films by light can be prevented by total elimination of chemisorbed oxygen. The significance of these observations is discussed. R. C. MURRAY.

Inst. Phys Chem
im Pisarzhevskii
UkSSR

[illegible]

DAYN, B.YA.

2

[illegible]

DAUN, B. YA.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 116 - 8/25

Authors : Kostryukova, E. P.; and Daun, B. Ya. DAIN

Title : Photochemical reduction of thionine

Periodical : Ukr. khim. zhur. 21/1, 48-53, 1955

Abstract : The photochemical reduction of a thiazine type dye (thionine), possessing high light sensitivity in the visible zone of the spectrum was investigated during its reaction with ethyl alcohol, thiourea and glucose. It was found that the photochemical reduction reaction of the dye is unavoidably connected with the phototransfer of the hydrogen from the reducing agent to the molecule of the dye. The effect of temperature on the reduction process is explained. Seven references : 4 USSR and 3 USA (1925-1951). Tables; graphs; drawing.

Institution: Acad. of Sc., Ukr. SSR, The L.V.Pisarzhevskiy Institute of Phys. Chemistry

Submitted : February 20, 1954

DAYN, B. Ya.

Photochemical properties of iron pheophorbide. M. S. Ashkinazi, T. S. Glikman, and B. Ya. Dain. *Doklady Akad. Nauk S.S.S.R.* 92, [illegible] (1953).—Fe pheophorbides are close analogs of chlorophyll but differ from it by dissolving in weakly alk. solns. They can be reversibly oxidized and reduced under the quantum effect of visible light, similar to Fe pheophorbide (C.A. 46, [illegible]). The resulting product is unstable in the air and is readily converted into the oxidized form with Fe^{+++}. The light-absorption effect was studied under illumination by a 1000-w. motion-picture lamp (with condenser) at 20-25°. The absorption curves in EtOH, Me_2CO, and $CHCl_3$ have sharp max. at 620-5 mμ for the oxidized form and at 645-60 mμ for the reduced form. The Fe^{+++} pheophorbide is reduced by light (except in the acetone soln.) and is reoxidized by admission of air. The processes in alk. (0.1N) aq. solns. are more complex. A weak max. is obtained at 675 mμ, but the absorption is changed by visible light to a distinct max. at 640 mμ, indicating a reduction. Admission of air results in the production of a curve which has the typical shape for the oxidized pheophorbide. The difference in the shapes of the curves in aq. and org. solvents is due to the interaction of Fe pheophorbide with the OH^-, with the production of absorption curves in org. solvents similar to those produced in alk. water solns. and which are attributed to the transfer of OH^- to the Fe^{+++} occupying the central position. W. M. Sternberg

DAIN, B. Ya.

USSR / Physical Chemistry. Molecules. Chemical Bond. B-4

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 25753

Author : M.S. Ashkinazi, I.P. Gerasimova, B.Ya. Dain.
Inst : Academy of Sciences of USSR
Title : Influence of Water on Absorption Spectrum and Photosensitivity of Iron Pheophorbide.

Orig Pub : Dokl. AN SSSR, 1956, 108, No 4, 655-658

Abstract : The absorption spectra of oxidized pheophorbide a (I) in alcohol, acetone, acetonitrile, chloroform (II), benzene and toluene in the range of 500 to 700 mμ were photographed. It was shown in accordance with earlier found regularities (RZhKhim, 1956, 25216) that the spectrum of carefully dehydrated I is characterized with the maximum absorption in range of 620 to 625 mu. After an addition of water (III), the spectrum changes sharply, the maximum at 620 to 625 mu disappears nearly completely and a band at 675 to 680 mu appears simultaneously. The described effect is displayed in

Card : 1/2

USSR / Physical Chemistry. Molecules. Chemical Bond. B-4

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 25753

Abstract : various solvents to different degrees depending on the miscibility of the solvent with III. The authors ascribe the absorption at 675 to 680 mu to associations consisting of III and I molecules; in the authors' opinion, the formation of associations of molecules of I connected with molecules of III is also possible. It is shown that the reduction of I (appearance of absorption maximum at 650 mu; see above note) under the action of visible light takes place considerably easier in presence of III, in which occasion the spectrum of oxidized I always appears after the inlet of air. The photosensitivity of I in presence of III proves, in the authors' opinion, the specific influence of III not only on the spectra, but also on the photo-chemical behavior of I.

Card : 2/2

1. inst. fizicheskoy Khimii im. L.V. Pisarzhevskogo akad. nauk. USSR, Preds. akad. A.N. Tereninym.

AUTHORS: Butsko, S.S. and Dain, B.Ya. SOV/21-58-11-16/28

TITLE: Photochemical Reaction of a-Chlorophyll Oxidation by Ferric Chloride (Fotokhimicheskaya reaktsiya okisleniya khlorofilla a khlornym zhelezom)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 11, pp 1221-1224 (USSR)

ABSTRACT: The irradiation with light of 400 to 370 m wavelength of acetone solutions of the mixtures of a-chlorophyll with $FeCl_3$, with an excess of the latter, leads to the formation of a red-colored photoproduct. This product is stable under vacuum conditions and preserves its characteristic spectrum for a long time. However, its contact with the air results in a sharp change of the spectrum. The spectrum of the final product is characteristic for ferric porphyrins (the position of peaks at 640; 580; 510 and 420 m). The rate of photoreaction decreases with an increase in ferric salt concentration. A dark after-effect of the light is observed in the reaction. This indicates the formation in the course of the photochemical reaction of stable products which act as catalyzers during the subsequent process in darkness. The authors assume that the red photoproduct is a chlorophyll

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SOV/21-58-11-16/28

Photochemical Reaction of a-Chlorophyll Oxidation by Ferric Chloride

semi-oxidized in the 7 - 8 position of the IV ring. There are 2 graphs and 3 references, 2 of which are Soviet and 1 American.

ASSOCIATION: Institut fizicheskiy khimii imeni L.V. Pisarzhevskogo AN UkrSSR (Institute of Physical Chemistry imeni L.V. Pisarzhevskiy of the AS UkrSSR)

PRESENTED: By Member of the AS UkrSSR, A.I. Brodskiy

SUBMITTED: June 13, 1958

Note: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

Card 2/2

BUTSKO, S.S.; ~~DAIN, B.Ya.~~

Spectrophotometric analysis of chlorophyll interactions with iron.
Zhur.ob.khim. 28 no.9:2603-2611 S '58. (MIRA 11:11)

1. Institut fizicheskoy khimii AN USSR.
(Chlorophyll) (Iron)

DAIN, B. Ya.

5(3)

AUTHORS: Glikman, T. S., Podlinyayeva, M. Ye., Dain, B. Ya. SOV/79-29-6-4/72

TITLE: Spectrophotometric Investigation of Reversible and Irreversible Conversions of Sulfophthalocyanine of Iron (III) in Aqueous Solution (Spektrofotometricheskoye issledovaniye obratimykh i neobratimykh prevrashcheniy sul'foftalotsianina zheleza (III) v vodnom rastvore)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1785-1793 (USSR)

ABSTRACT: The phthalocyanines belong to the small number of dyes which resemble, as to their structure, tha natural pigments of the porphyrin class. In that connection many scientists tried to use these compounds as model of these pigments (Ref 1) in order to investigate more thoroughly the compounds of this kind if they are not combined with proteins. In this regard the iron phthalocyanines were of special interest; they are closely related with the hemins the part of which in the biological redox processes is well-known. The sulfonated derivatives of these dyes which are readily soluble in water show a number of interesting peculiarities which are based

Card 1/3

Spectrophotometric Investigation of Reversible and Irreversible Conversions of Sulfophthalocyanine of Iron (III) in Aqueous Solution SOV/79-29-6-4/72

on the fact, that they are capable of reversible and irreversible reactions in the dark and especially in the light. Since the solutions of the sulfonated derivatives of the iron-phthalocyanine are intensely colored the spectrophotometric method is most suitable for their investigation. In this paper the results of this spectrophotometric investigation of aqueous solutions of these compounds, and of the conversions taking place in them are described. It was found that the aqueous solutions of the ferri-sulfo-phthalocyanine (III) represent systems in the state of a hydrolytic equilibrium. The hydroxide of the ferri-phthalocyanine (III) which is formed on hydrolysis is unstable and decomposes slowly and yields ferro-sulfophthalocyanine (II) and the free hydroxyl. Exposure to light accelerates this process. The formation of free radicals on standing of the solutions of ferri-sulfo-phthalocyanine (III) which had been outgassed in the vacuum was confirmed by introduction of polymerization chains. The spontaneous decomposition of the hydroxide is the cause of the labile behavior of the aqueous solutions

Card 2/3

Spectrophotometric Investigation of Reversible and SOV/79-29-6-4/72
Irreversible Conversions of Sulfophthalocyanine of Iron (III) in Aqueous Solution

of sulfophthalocyanine of the trivalent iron and the cause of their slow decolorization in the air. There are 6 figures and 12 references, 3 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk Ukrainskoy SSR (Institute of Physical Chemistry of the Academy of Sciences, Ukrainskaya SSR)

SUBMITTED: May 12, 1958

Card 3/3

DAIN, B. Ya. (Prof.)(USSR)

"Photochemistry of Me-complexes of Chlorophyll."

report to be submitted for the Photosynthesis Symposium, 5th Intl. Congress of Biochemistry, Moscow, 10-16 Aug 1961.

KRYUKOV, A.I.; DAIN, B.Ya.

Photochemical reduction of ferric chloride in aromatic hydrocarbons.
Dokl.AN SSSR 138 no.1:153-155 My-Je '61. (MIRA 14:4)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo AN USSR.
Predstavleno akademikom A.N.Tereninym.

(Iron chloride) (Photochemistry)