"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SOV/51-5-4-2/21

AUTHORS: Sverdlov, L.M., Borisov, M.G. and Tarasova, N.V.

TITLE: Vibrational Spectra of Unsaturated Hydrocarbons (Kolebatel'nyye spektry nepredel'nykh uglevodorodov)
VI. Calculation and Interpretation of Vibrational Spectra of Butene-1, Pentadiene-1,4 and 1,1-Dimethylallene (VI. Raschet i interpretatsiya kolebatel'nykh spektrov buten-1, pentadiyen-1,4 i 1,1-dimetilallena)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 4, pp 354-364 (USSR)

ABSTRACT: Previous parts were reported in papers given by Refs 1-5. The present paper reports calculations of normal vibrations of the butene-1 molecule which is the second member of a homologous series $RCH{=}CH_2$. Knowledge of the normal frequencies of butene-1 vibrations is important in thermodynamical calculations. The authors investigated also pentadiene-1,4 and 1,1-dimethylallene in order to find the effect of a second double bond in the carbon chain on the spectra of these molecules. Calculation of normal vibrations followed the method described by Yel'yashevich and Stepanov (Ref 15). Bond lengths and angles were chosen as vibrational coordinates (Figs 1-3). Force constants for butene-1 and pentadiene-1,4 were taken from calculations for propylene (Ref 2) and propane (Ref 15). Several new force constants

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SOV/51-5-4-2/21

Vibrational Spectra of Unsaturated Hydrocarbons. VI. Calculation and Interpretation of Vibrational Spectra of Butene-1, Pentadiene-1,4 and 1,1-Dimethylallene

were determined using a variational method. In the case of 1,1-dimethylallene the authors used force constants of allene (Ref 5) and isobutylene (Ref 1). Tables 1-3 give the vibrational spectra of butene-1, pentadiene-1,4 and 1,1-dimethylallene respectively. The third column in each table gives the calculated frequencies. The fourth and later columns give the observed experimental values. Table 4 gives the interpretation of the fundamentals and harmonics for butene-1. Tables 1-3 show that good agreement was obtained between the calculated and experimentally observed frequencies. Using the results obtained in this paper the authors interpreted Raman spectra of molecules of the $RCH{=}{=}CH_2$ (from pentene-1 to undecene-1) and diallyl (Tables 5, 6). More precise values of the characteristic frequencies of $RCH{=}{=}CH_2$ molecules were obtained and the characteristic frequencies of diolefines and dialkyl-derivatives of allene were

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SOV/51-5-4-2/21

Vibrational Spectra of Unsaturated Hydrocarbons. VI. Calculation and Interpretation of Vibrational Spectra of Butene-1, Pentadiene-1,4 and 1,1-Dimethylallene

calculated. There are 3 figures, 6 tables and 21 references, 11 of which are Soviet, 4 American, 2 German, 1 English, 1 French, 1 translation and 1 other.

ASSOCIATION: Saratovskiy avtodorozhnyy institut i vsesoyuznyy avtodorozhnyy zaochnyy institut (Saratov Automobile Institute and All-Union Highway Correspondence Institute)

SUBMITTED: November 16, 1957

Card 3/3

1. Hydrocarbons--Spectra 2. Molecules--Vibration 3. Mathematics --Applications 4. Roman spectra--Applications

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

51-4-5-25/29

AUTHOR: Sverdlov, L.M.

TITLE: Theory of Intensities in the Infrared Spectra of Ethylene and Tetradeuteroethylene (Teoriya intensivnostey v infrakrasnykh spektrakh etilena i tetradeyteroetilena)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 5, pp 697-701 (USSR)

ABSTRACT: The present author and others had earlier carried out theoretical calculations of frequencies and forms of normal vibrations of non-saturated hydrocarbons (Refs 1, 2). From mechanical parameters of molecules obtained by means of these calculations one can solve the electro-optical problem of calculation of intensities and polarizations in the Raman and infrared absorption spectra of non-saturated compounds in order to find the dependence of intensities and polarizations on molecular structure and forms of vibrations. The present paper reports calculations of intensities of the infrared spectra of C_2H_4 and C_2D_4 carried out by the method described by Vol'kenshteyn and Yel'yashevich (Ref 3). The results are given

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51-4-5-25/29

Theory of Intensities in the Infrared Spectra of Ethylene and Tetradeuteroethylene

in Tables 1-3. Comparison with the experimental data of Ref 5 shows fair agreement between the calculated and experimental values. There are 3 tables, 1 figure and 7 references, 3 of which are Soviet and 4 American.

ASSOCIATION: Saratovskiy avtodorozhnyy institut (Saratov Highway Institute)

SUBMITTED: November 4, 1957

1. Compounds - Intensity - Theory 2. Infrared spectrum - Analysis

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

AUTHORS: ~~Sverdlov, L. M.,~~ Borisov, M. G., Klochkovskiy, Yu. V., Kraynov, Ye. P., Kukina, V. S., Tarasova, N. V.

SOV/48-22-9-3/4o

TITLE: Theory of the Vibration Spectra of Unsaturated Compounds (Teoriya kolebatel'nykh spektrov nepredel'nykh soyedineniy)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 9, pp 1o23 - 1o25 (USSR)

ABSTRACT: On the basis of abundant experimental information on unsaturated compounds the authors tried to generalize the conclusions drawn from it in two directions. The determination of the characteristic frequencies of some structural groups with a double bond and the observation of the mutual influence of the structural elements. To solve these problems, normal oscillations and the constants of the potential energy were computed by means of the theory of the small vibrations of polyatomic molecules (Refs 1-2). Partial results of these computations have been published already before (Ref 3). The basic results of the present paper can be condensed

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as follows: The substitution of the hydrogen atoms by alkyl radicals in ethylene leaves the field of the remaining ethylene groups as well as the field of the alkyl radicals almost unchanged. The geometrical distribution of the alkyl radicals with respect to the double bond plays an essential role with regard to the spectrum. The calculations show that in the case of two double bonds that are separated by at least two single bonds the former ones exert almost no influence on each other. On the basis of the computation of the oscillation frequency of cyclopentene the spectrum of the molecule combination dispersion was for the first time interpreted with success. The frequencies and the force constants of some bromine-, chlorine,- and fluorine-substituents of ethylene were computed theoretically. Because of comprehensive data on the spectra of the deutero-substituted molecules it was possible to carry out an exact computation of the force constants. The good agreement between the computed and the observed frequencies proves the correctness of the whole system of constants. Compared with the halogen

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SOV/51-6-2-4/39

AUTHORS: Podlovchenko, R.I., Sverdlov, L.M. and Sushchinskiy, M.M.

TITLE: Vibrational Spectra and Rotational Isomerism of 2,3-Dimethylbutane (Kolebatel'nyye spektry i povorotnaya izomeriya 2,3-dimetilbutana)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 2, pp 146-153 (USSR)

ABSTRACT: Vibrational frequencies of 2,3-dimethylbutane were calculated using the method described by Yel'yashevich and Stepanov (Ref 4). Four configurations of 2,3-dimethylbutane were discussed: symmetrical and non-symmetrical trans-isomers (known also as transisomer and "twisted" isomer), and symmetrical and non-symmetrical cis-isomers. They are shown in Fig 1 by diagrams a, б, в and г respectively. It was assumed that the force constants are the same for all the four isomers. The force constants were taken from the data on ethane and propane (Ref 4). Each of the four rotational isomers of 2,3-dimethylbutane has 54 normal vibrations. The notation used for natural vibrational coordinates is shown in Fig 2. The calculated frequencies of normal vibrations are given in table 1. The experimental data on the Raman and infrared spectra of 2,3-dimethylbutane (Refs 2, 5 and 6) are incomplete. The authors made some additional measurements, in particular measurements of the degree of depolarization of Raman lines. The experimental

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technique used was described by Sushchinskiy in Ref 7. The results obtained together with the data reported earlier in the literature are given in Table 2. Table 3 gives the interpretation of the vibrational spectra of the trans, "twisted" and cis-symmetrical isomers of 2,3-dimethylbutane. Comparing the calculated and experimental values the authors concluded that two rotational isomers exist in the liquid phase of 2,3-dimethylbutane: the trans-isomer and a non-symmetrical isomer which is intermediate between the "twisted" and the cis-symmetrical modifications. The characteristic frequencies of adjacent tertiary carbon atoms in 2,3-dimethylbutane and ten other hydrocarbons were also calculated and are given in Table 4. There are 2 figures, 4 tables and 9 references, 3 of which are Soviet and 6 English.

SUBMITTED: January 21, 1958

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SOV/51-6-3-9/28

AUTHORS: Sverdlov, L.M. and Ye.P. Kraynov

TITLE: Vibrational Spectra of Unsaturated Hydrocarbons. VII. Calculation and Interpretation of the Vibrational Spectrum of Cyclopentene (Kolebatel'nyye spektry nepredel'nykh uglevodorodov. VII. Raschet i interpretatsiya kolebatel'nogo spektra tsiklopentena)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 3, pp 334-342, (USSR)

ABSTRACT: The authors used the available experimental material (Refs.4-10) on the vibrational spectra of cyclopentene to calculate its vibrational frequencies. The calculation is based on an assumption that the carbon ring of the molecule lies in one plane and that the molecule therefore belongs to the C_{2v} point-group of symmetry. The following molecular parameters were used: $r(C=C) = 1.353$ Å, $r(C-C) = 1.54$ Å, $\angle(C-C-C) = 105^{\circ}58'$, $\angle(C=C-C) = 111^{\circ}03'$, $r(=C-H) = 1.07$ Å, $r(C-H) = 1.09$ Å, $\angle HCH = 109^{\circ}28'$, $\angle CCH = 111^{\circ}21'$. Yel'yashevich and Stepanov's method (Ref.11) was employed to find the vibrational frequencies.

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SOV/51-6-3-9/28

Vibrational Spectra of Unsaturated Hydrocarbons. VII

The calculated (col.3) and observed (col.4) Raman frequencies are given in Table 1 which also includes the interpretation of the Raman spectrum of cyclopentene. Table 1 shows that good agreement was obtained between the calculated and observed Raman frequencies (mean error was 13.6 cm^{-1}). Agreement between the calculated and observed frequencies confirms that the choice of the force constants and the geometrical model of the molecule was correct. The authors discuss difficulties in interpretation of polarisation of certain lines. The calculated vibration frequencies of cyclopentene were used to interpret vibrational spectra and to find characteristic frequencies of nine alkyl-derivatives of this molecule (Tables 4-6). There are 6 tables, 1 figure and 12 references, of which 7 are Soviet, 1 translation of English into Russian, 2 French, 1 German and 1 English.

SUBMITTED: April 7, 1958

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

Theory of the Intensities of the Infrared Spectra of Methyl Halides CH_3Cl, CH_3Br, CH_3I and their Deutero-substituted SOV/51-6-6-3/34

Tables 1-7; good agreement between the calculated and empirical infrared intensities was obtained. It was found that the negative end of the dipole μ_{CH} is at the carbon atom and the positive end is at the hydrogen atom. On increase of the C--H and C--Z (Z is a halogen) bond lengths their dipole moments decrease. There are 1 figure, 7 tables and 7 references, 4 of which are Soviet and 3 English.

SUBMITTED: July 5, 1958.

Card 2/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

24(7) SOV/51-7-1-4/27

AUTHOR: Sverdlov, L.M.

TITLE: Theory of the Intensities in the Infrared Spectra of Methane, Ethane and Hexadeuteroethane (Teoriya intensivnostey infrakrasnykh spektrov metana, etana i geksadeyteroetana)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 1, pp 21-28 (USSR)

ABSTRACT: In his earlier work on ethylene and methyl halides (Refs 1, 2) the author has shown that the infrared intensities can be calculated using the first approximation of the valence-optical system as described by Vol'kenshteyn, Yel'yashevich and Stepanov (Ref 3). This approximation was used to calculate the infrared band intensities of methane, ethane and hexadeuteroethane. The author calculated also the dipole moments of the C--H bonds and their derivatives with respect to molecular coordinates. The method of calculation was the same as in previous work and the results are given in Tables 1-5. Good agreement was obtained between the calculated values and those obtained experimentally by other workers. There are 1 figure, 5 tables and 9 references, 3 of which are Soviet and 6 English.

SUBMITTED: July 21, 1958.

Card 1/1

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SOV/51-7-2-3/34

AUTHOR: Sverdlov, L.M.

TITLE: A Theory of Intensities of the Infrared Spectra of Sulphur Dioxide, Ammonia and Phosphine Molecules. IV. (Teoriya intensivnostey infrakrasnykh spektrov molekul dvuokisi sery, ammiaka i fosfina. IV)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 152-153 (USSR)

ABSTRACT: The author derived by theoretical calculation the intensities of the infrared spectra and the electro-optical parameters (the dipole moments and the derivatives of the dipole moments with respect to the bond length) of SO_2, NH_3 and PH_3. The calculation was carried out in the first approximation of the valence-optical scheme using natural vibrational coordinates: the changes in the bond lengths and magnitudes of the angles (see Fig 1). The results are shown in tables 2-7; the calculated dipole moments of SO_2, NH_3 and PH_3 are $\mu_{SO} = 1.5872$, $\mu_{NH} = -1.3057$ and $\mu_{PH} = -0.3389$ D. The calculations do not yield the absolute sign of the dipole moment μ, but considerations of the

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SOV/51-7-2-3/34

A Theory of Intensities of the Infrared Spectra of Sulphur Dioxide, Ammonia and Phosphine Molecules. IV.

electro-negativity showed that the negative ends of the dipoles μ_{NH} and μ_{PH} must be at the nitrogen and phosphorus atoms respectively. Similar considerations indicated that the negative end of the μ_{SO} dipole lies at the oxygen atom. There are 2 figures, 7 tables and 13 references, 5 of which are Soviet, 1 Spanish, 5 English and 2 translations from English into Russian.

SUBMITTED: October 24, 1958

Card 2/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SOV/51-7-4-4/32

AUTHORS: Sverdlov, L.M. and Kraynov, Ye.P.

TITLE: Calculation and Interpretation of Vibrational Spectra of Naphthenes. II. Methylcyclopropane and 1,1-Dimethylcyclopropane

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 4, pp 460-466 (USSR)

ABSTRACT: In the preceding paper of this series (Ref 1) the authors reported calculation of vibrational frequencies and potential energy constants of cyclopropane. The results of that paper can be used to calculate vibrational spectra of simplest alkyl derivatives of cyclopropane. This is done in the present paper which reports calculation of vibrational frequencies and interpretation of vibrational (Raman and infrared) spectra of methylcyclopropane and 1,1-dimethylcyclopropane. Yel'yashevich and Stepanov's technique (Ref 2) was employed. Vibrational coordinates used in calculations are shown in Figs 1 and 2. The results of calculations and interpretation of infrared and Raman spectra are given in Tables 1 and 2 for methylcyclopropane and 1,1-dimethylcyclopropane respectively. Good agreement between the calculated and observed frequencies (mean difference 14 cm^{-1}, maximum difference 39 cm^{-1}) confirms the correctness of the proposed interpretation. The interpretation

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SOV/51-7-4-4/32

Calculation and Interpretation of Vibrational Spectra of Naphthenes. II. Methylcyclopropane and 1,1-Dimethylcyclopropane.

of fundamental frequencies was next used to classify harmonics and combination frequencies; these are given in Tables 3 and 4. Comparison of the cyclopropane, methylcyclopropane and 1,1-dimethylcyclopropane spectra (Table 5) shows that the type of alkyl substitution affects strongly the nature of the spectrum. The authors calculated also the characteristic frequencies of mono- and di-substituted cyclopropanes and they interpreted the Raman and infrared absorption spectra of ethylcyclopropane (Table 6). Acknowledgment is made to A.N. Bogomolov who solved some of the equations using an electronic computer. There are 2 figures, 6 tables and 9 references, 3 of which are Soviet, 4 English, 1 German and 1 French.

SUBMITTED: January 12, 1959

Card 2/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L. M., DOC PHYS-MATH SCI, "THEORY OF INTENSITY OF INFRARED SPECTRA OF POLYATOMIC MOLECULES, ~~COMPUTATION~~ calculation AND INTERPRETATION OF VIBRATION SPECTRA OF UNSATURATED COMPOUNDS AND NAPHTHENES." [MINSK], 1960. (MIN OF HIGHER AND SEC SPEC AND PROFESSIONAL ED BSSR, BELORUSSIAN STATE UNIV IM V. I. LENIN). (KL, 3-61, 202).

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SOV/51-8-1-6/40

AUTHOR: Sverdlov, L.M.

TITLE: Relationships Between Vibrational Frequencies of Isotopic Molecules (the Sum-Product-Sum Rules for Powers of the Squares of Frequencies).

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 36-39 (USSR)

ABSTRACT: In earlier work (Refs 1-4) the author obtained relationships between vibrational frequencies of isotopic molecules. In particular the author deduced the rule of the sum of the products of the squares of frequencies, taken 2, 3, etc. at a time (Ref 2). In the present paper the author shows that similar relationships hold for powers of the frequencies squared. The paper is entirely theoretical. There are 6 references, 4 of which are Soviet, 1 English and 1 translation into Russian.

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Card 1/1

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68884
S/051/60/008/02/008/036
E201/E391

24.3410

AUTHOR: Sverdlov, L.M.

TITLE: A Theory of the Intensities of the Infrared Molecular Spectra. VI. BF_3, NF_3, SiF_4 and SF_6

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2, pp 183 - 190 (USSR)

ABSTRACT: Calculation of the infrared intensities and the electro-optical parameters of fluorinated compounds is of special interest, since the infrared spectra of these compounds have strong absorption bands. Continuing earlier work (molecules CF_4 and C_2F_6, cf. Ref 1), the author reports here a calculation of the electro-optical parameters of BF_3, NF_3, SiF_4 and SF_6 in the first valence-optical approximation using the absolute integral intensities of the infrared bands of these molecules. The absolute infrared intensities of BF_3 and NF_3 were taken from McKean's (Ref 2) and Schatz and Levin's (Ref 3) work; the infrared integral intensities of SiF_4 and SF_6 were taken

Card1/3

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E201/E391

24.5410

AUTHOR: Sverdlov, L.M.

TITLE: Relationships Between the Intensities of the Infrared Bands of Isotopic Molecules

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2, pp 253 - 255 (USSR)

ABSTRACT: The author derived earlier (Refs 1-5) relationships between vibrational frequencies of isotopic molecules. Here the author shows that similar rules can be obtained for the intensities of infrared bands of isotopic molecules. Neglecting mechanical and electrical unharmonicity it is found that:

$$\sum_{i=0}^{k+1} (-1)^i C_{k+1}^i \left(\sum_l I_l\right)^k (a_\alpha a_\beta \ldots a_i) = 0. \qquad (5)$$

$$(k = 1, 2, \ldots, N - 1)$$

where $\sum_l I_l = \sum_{l=1}^{n} I_l$ is the sum of intensities for all n normal coordinates,

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E201/E391

Relationships Between the Intensities of the Infrared Bands of Isotopic Molecules

for powers of the intensity sums. When $k = 1$ we obtain the sum rule deduced by Decius (Ref 8):

$$\sum_l I_l + \sum_l I_l(a_\alpha a_\beta) = \sum_l I_l(a_\alpha) + \sum_l I_l(a_\beta) \qquad (6) .$$

The sum rule of Eq (5) is useful in checking the correctness of the integral intensities of a system of isotopic molecules and in finding unknown intensities of infrared bands. By way of example the author discusses in some detail molecules of methane, ethane and their deutero-derivatives. Expressions similar to Eq (5) are also applicable to sums of the intensities of Raman lines, but their applicability is much more limited. The paper is entirely theoretical. There are 9 references, 6 of which are Soviet and 3 English.

SUBMITTED: May 25, 1959

Card 3/3

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S/051/60/008/005/002/027
E201/E491

24.3410

AUTHOR: Sverdlov, L.M.

TITLE: The Theory of Intensities of the Infrared Spectra of Deuteroethylenes. VII

PERIODICAL: Optika i spektroskopiya, 1960, Vol.8, No.5, pp.594-605

TEXT: The author reported earlier (Ref.1) a calculation of the infrared spectral intensities and of the electro-optical parameters of ethylene and tetradeuteroethylene in the first approximation of the valence-optical method (Ref.2,3). These electro-optical parameters are used in the present paper to discuss the intensities of the infrared bands of partly deuterated ethylenes C_2H_3D, a-$C_2H_2O_2$, c-$C_2H_2O_2$, t-$C_2H_2O_2$ and C_2HD_3. The form of the normal vibrations of deuteroethylenes was discussed earlier (Ref.5). Here Tables 1-3 list the normalized coefficients $C_{q\ell}$, $D_{\beta\ell}$, $D_{\alpha\ell}$, $D_{\rho\ell}$ which occur in the expressions for natural vibrational and angular valence-optical coordinates of partly deuterated ethylenes. The derivatives of the dipole moments with respect to the normal coordinates were calculated using Eq.(2) to (5) by substituting into these equations the coefficients $C_{q\ell}$, D_{ℓ} and the electro-optical parameters of ethylene (Table 4). The values

Card 1/2

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SVERDLOV, L.M.

Conditions for determining the characteristic infrared band intensities of polyatomic molecules. Opt.i spektr. 9 no.1:40-45 Jl '60. (MIRA 13:7)
(Spectrum, Molecular) (Spectrum, Infrared)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.; PROKOF'YEVA, N.I.

Calculation and interpretation of vibrational spectra of naphthenes. Part 4: Coefficients of the effect of cyclopentane. Opt. i spektr. 9 no.2:184-187 Ag '60. (MIRA 13:8)
(Cyclopentane--Spectra)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

S/051/60/009/004/003/034
E201/E191

AUTHORS: Sverdlov, L.M., and Borisov, M.G.

TITLE: Vibrational Spectra of Unsaturated Hydrocarbons. IX. Calculation and Interpretation of the Vibrational Spectra of Deuteroallenes and Methylallene

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 432-437

TEXT: In preceding papers (Refs 1, 2) the authors discussed vibrational spectra of allene, tetradeuteroallene, and 1,1-dimethylallene. The present paper extends the earlier work to calculation of the vibrational spectra of partly deuterated allenes: monodeuteroallene, 1,1-dideuteroallene, 1,3-dideuteroallene, trideuteroallene, as well as methylallene. Calculation of the normal-vibration frequencies followed the method of Yel'yashevich and Stepanov (Ref 3). The bond lengths and angles were used as the natural vibrational coordinates; these coordinates are shown in Figs 1-3 for monodeuteroallene, 1,1-dideuteroallene, and methylallene, respectively. Tables 1 and 2 give the calculated and observed frequencies (in cm^{-1}) of all the five molecules considered here, as well as an interpretation of the spectra of 1,1-dideuteroallene and

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S/051/60/009/004/003/034
E201/E191

Vibrational Spectra of Unsaturated Hydrocarbons. IX, Calculation and Interpretation of the Vibrational Spectra of Deuteroallenes and Methylallene

methylallene. There was a good agreement between the calculated and empirical values. The fundamental frequencies of methylallene were used to interpret the remaining frequencies as harmonics or combination frequencies (Table 3). The results of calculation were used to predict the characteristic frequencies of monoalkyl derivatives of allene $RCH{=}C{=}CH_2$; the experimental values agreed quite well with these predictions (Table 4).

There are 3 figures, 4 tables and 13 references: 5 Soviet, 6 English, 1 French, and 1 translation into Russian.

SUBMITTED: December 24, 1959

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Conditions of the characteristicity of the infrared band polarization of polyatomic molecules. Opt. i spektr. 9 no.5:671-673 N '60. (MIRA 13:11)

(Spectrum, Molecular)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.; KLOCHKOVSKIY, Yu.V.; KUKINA, V.S.; MEZHUYEVA, T.D.

Vibrational spectra and potential energy constants of haloethylenes. Chloroethylene, fluoroethylene, 1, 1-dichloroethylene, 1, 1-dibromethylene and their deutero-substituted derivatives. Opt. i spektr. 9 no. 6:728-733 D '60. (MIRA 14:1)

(Ethylene--Spectra)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Computation of the integral intensities of infrared bands for isotope-substituted methane derivatives. Part 8. Opt. i spektr. 10 no. 1:33-40 Ja '61. (MIRA 14:1)
(Methane--Spectra)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Applicability of the zero approximation of a generalized valence-optical system. Opt. i spektr. 10 no.6:702-706 Je '61. (MIRA 14:8)
(Methane--Dipole moments) (Molecular dynamics)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Calculation of the electrooptical parameters and integral intensities of the infrared bands of acetylene and hydrocyanic acid molecules and their deuterosubstituted. Opt.i spektr. 11 no.1:35-40 Jl '61. (MIRA 14:10)
(Hydrocyanic acid--Spectra) (Acetylene--Spectra)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Formula for calculating the intensity of Raman spectra of polyatomic molecules. Opt. i spektr. 11 no.6:774-775 D '61. (MIRA 14:11)

(Raman effect) (Molecules--Spectra)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Absolute intensities of the infrared bands of deuteromethanes (comparison with experimental data). Part 9. Opt. i spektr. 12 no.1:129-131 Ja '62. (MIRA 15:2)

(Methane--Spectra)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Relation between the anharmonicity constants of a system of isotopic polyatomic molecules. Opt.i spektr. 13 no.1:52-55 Jl '62. (MIRA 15:7)

(Molecules) (Isotopes)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.; KRAYNOV, Ye.P.

Vibration spectra of unsaturated hydrocarbons. Part 10. Calculation and interpretation of the vibration spectra of cyclobutene and deuterocyclobutene. Opt.i spektr. 13 no.2:169-173 Ag '62. (MIRA 15:11)

(Cyclobutene--Spectra) (Deuterium compounds--Spectra)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

PROKOF'YEVA, N.I.; SVERDLOV, L.M.

Calculation and interpretation of vibrational spectra of naphthenes. Part 5. Intensities and depolarizations in Raman spectra of cyclopentane and deuterocyclopentane. Opt. i spektr. 13 no.3:324-330 S '62. (MIRA 15:9)
(Cyclopentane) (Raman effect)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L. M.; BOLOTINA, E. N.

Calculation of the thermodynamic functions of gaseous 1,3-butadiene from spectroscopic data. Zhur. fiz. khim. 36 no.12: 2765-2767 D '62. (MIRA 16:1)

1. Saratovskiy politekhnicheskiy institut.

(Butadiene—Thermodynamic properties)
(Spectrum analysis)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Different forms of the formula for calculating the intensity of Raman spectra of polyatomic molecules. Opt. i spektr. 14 no.5:731-732 My '63. (MIRA 16:6)

(Raman effect) (Molecules)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 13093-63 EPF(c)/BDS/EWT(m) Pr-4 RM/RH/WW

ACCESSION NR: AP3003407 S/0051/63/015/001/0031/0037

60
59

AUTHOR: Borisov, M.G.; Sverdlov, L.M.

TITLE: Vibrational spectra of unsaturated hydrocarbons. 11. Integral intensities and polarizations in the Raman and infrared absorption spectra of allene and tetradeuteroallene

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 31-37

TOPIC TAGS: spectral line intensity, bond polarizability, spectrum calculation, allene tetradeuteroallene, unsaturated hydrocarbons

ABSTRACT: Using the results of earlier calculations (Optika i spektroskopiya, 8, 594, 1960 and Optika i spektroskopiya, Sbornik 2, p.308, L.1963) of the electro-optical parameters (dipole moments, bond polarizabilities and their derivatives with respect to bond lengths and angles), the authors calculated in the first approximation of the valence-optical theory of Vol'kenshtein, Yel'yashevich and Stepanov (Kolebaniya molekul /Molecular vibrations/, Vol.2, M.1949) the values of the integral intensity and polarization in the Raman and infrared absorption spectra of allene (propadiene) (C_3H_4) and tetradeuteroallene (C_3D_4). The allene molecule belongs to the D_{2d} symmetry group. The directions of polarization of the C-H bond were assumed by analogy with ethylene. The calculated values are tabulated and

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 13093-63
ACCESSION NR: AP3003407

compared with qualitative experimental data. To explain some of the high line intensities it proved necessary to introduce supplementary electro-optical parameters. In the case of the infrared spectra reasonably good agreement between the calculated and observed intensities is obtained for most, but not all, the bands. "In conclusion the authors thank A.G.Finkel' for evaluation of the integral intensities of allene and tetradeuterоallene on the basis of the experimental results of Reference 7 [R.Lord and P.Venkateswarlu, J.Chem.Phys.,20, 1237, 1952]." Orig.art.has: 1 figure, 8 equations and 2 tables.

ASSOCIATION: none

SUBMITTED: 31Oct62 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: PH,CH NO SOV REF: 008 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Derivation of a formula for calculating the tensor components of the polarizability derivatives of a molecule using normal coordinates. Opt. i spektr. 15 no.1:133-135 Jl '63. (MIRA 16:8)

(Calculus of tensors) (Molecules)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 13110-63 EWT(1)/BDS/EED-2 AFFTC/ASD

ACCESSION NR: AP3003425 S/0051/63/015/001/0136/0137

52

AUTHOR: Sverdlov, L.M.

21

TITLE: Computation formulas for the intensity of the infrared spectra of polyatomic molecules in the first approximation of the generalized valence-optical theory

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 136-137

TOPIC TAGS: theoretical spectroscopy, polyatomic molecule, valence-optical theory

ABSTRACT: In an earlier paper the author (Optika i spektroskopiya, 10, 152,1961) elaborated a general valence-optical theory of the intensity of the infrared spectra of polyatomic molecules, taking into account the presence of components of the dipole moment perpendicular to the directions of the bonds. This theory is a generalization of the valence-optical theory of M.V.Vol'kenshtein and M.A.Yel'yashevich (ZhETF, 15, 124, 1945) in which the dipole moments of the bonds were assumed to coincide with the bond directions. In the earlier paper the valence-optical coordinates were used to derive the expression for the derivatives of the dipole moment with respect to the normal coordinates. In the present paper the

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 13110-63
ACCESION NO: AP3003425

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author deduces computation formulas for the derivative of the dipole moment taking into account the condition of vanishing of the angular momentum of the molecule. The author starts with the components of the dipole moment, performs a number of transformations and goes over to vector notation to obtain the final expression for the derivative of the dipole moment. Orig.art.has: 13 formulas.

ASSOCIATION: none

SUBMITTED: 2Jan63 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: PH NO REF SOV: 008 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 17774-63 EPF(c)/EWT(m)/BDS Pr-4 RM/WW/MAY

S/0051/63/015/002/0195/0201

62
60

ACCESSION NR: AP3005841

AUTHOR: Finkel', A.G.; Prokof'yeva, N.I.; Sverdlov, L.M.

TITLE: Experimental and theoretical investigation of the absolute intensities of the bands in the infrared spectra of hydrocarbons in the gaseous phase. 1. Cyclopentane and cyclohexane.

SOURCE: Optika i spektroskopiya, v.15, no.2, 1963, 195-201

TOPIC TAGS: absorption band, infrared spectrum, band intensity, dipole moment cyclopentane, cyclohexane, ethane

ABSTRACT: Investigation of the absolute intensities of the infrared absorption bands of molecules in the vapor phase is of considerable interest in view of the light it can throw on molecular structure in the absence of intermolecular interactions (association, etc.). Owing to experimental difficulties, however, until recently few absolute intensities have been measured. The present work was devoted to measurement of the absolute intensities of the infrared bands of cyclopentane and cyclohexane in the gaseous state and to calculation, on the basis of the experimental data, of the electro-optical parameters characterizing the polar

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 17774-63

ACCESSION NR: AP3005841

2

attributes of the C-H bonds in these cycloparaffins. The spectra were recorded photoelectrically on a modified IKS-6 infrared spectrometer. Special measures were taken to insure high stability of the detecting-recording system. Special cylindrical gas-absorption cells with thick glass walls were used for the experiments. The cell thicknesses (lengths) were 50.2, 101 and 301 mm. The intensity values were recorded with reference to 0 and 100% transmittance markers. The recorddd and calculated intensity values are presented in a table. The integral absorption coefficients were evaluated by the extrapolation method of E.B.Wilson and B.Wells (J.Chem.Phys.,14, 578, 1946), which is generally admitted to be the most accurate and convenient method. The integral absorption coefficient versus pl (p = partial pressure of the gas and l = the length of the absorption cell) curves all have a long horizontal section (the curves tend to rise slightly in the region of small pl values). The formulas used for calculating the derivatives of the dipole moments are adduced. The observed intensity distributions in the cyclopentane and cyclohexane spectra are interpreted in the light of the calculated electro-optical parameters. The electro-optical parameters obtained for cyclohexane are compared with the parameters of ethane. "The authors are grateful to M.L.Kats and N.K.Sidorov for their interest in the work." Orig.art.has: 12 formulas, 3 figures and 1 table.

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 19973-63 EPF(c)/EWT(1)/EWT(m)/BDS AFFTC/ASD Pr-4 RM/WW/MAY
S/0051/63/015/003/0315/0319
ACCESSION NR: AP3007268

AUTHOR: Prokof'yeva, N.I.; Sverdlov, L.M.

TITLE: Calculation of the absolute intensities and degrees of depolarization in the Raman spectra of methane and its isotopic derivatives in the vapor state

SOURCE: Optika i spektroskopiya, v.15, no.3, 1963, 315-319

TOPIC TAGS: Raman spectra, depolarization, line intensity, methane, deuteromethane, tritium-methane

ABSTRACT: It was shown earlier by the authors for the cases of cyclopentane and ethylene that for calculating Raman line intensities one must use the first approximation of the valence-optical theory (M.V.Vol'kenshteyn, M.A.Yel'yashevich and B.I. Stepanov, Kolebaniya molekul (Molecular vibrations), Vol.2, M.,1949). It was deemed of interest to consider in this approximation of the theory the simple hydrocarbon methane in order to determine the electro-optical parameters characterizing the distribution of the electron cloud of the C-H bonds (the components of the ellipsoid of polarization and their derivatives). Accordingly, there were calculated in the first approximation of the valence-optical theory the said electro-optical parameters on the basis of the experimental data on the absolute Raman line inten-

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 19973-63
ACCESSION NR: AP3007268

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sities in the spectrum of CH_4. The deduced values were then used to calculate the absolute intensities and depolarizations in the Raman spectra of the deuterium, tritium and deuterium-tritium derivatives of methane. The tensor polarizability formulas are adduced. The values of the Raman line intensities and degrees of depolarization for the different D, T and D-T derivatives of CH_4 are tabulated. Comparison with the data in the literature shows that most of the lines for which the calculated intensity is appreciable have been observed in the Raman spectra. Some of the weaker lines have also been detected. The calculated intensities generally obey the sum rules. Orig.art.has: 10 formulas and 3 tables.

ASSOCIATION: none

SUBMITTED: 14Jan63 DATE ACQ: 09Oct63 ENCL: 00

SUB CODE: PH NO REF SOV: 006 OTHER: 007

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 19968-63 EPF(c)/EWT(1)/EWT(m)/BDS AFFTC/ASD Pr-4 RM/MAY/WW

ACCESSION NR: AP3007285 S/0051/63/015/003/0431/0431

AUTHOR: Sverdlov, L.M.; Prokof'yeva, N.I. 66

TITLE: Regarding the article by L.A.Gribov /Response to the comment by L.A.Gribov on the article "Calculation of the electro-optical parameters of ethane and methane" by L.M.Sverdlov and N.I.Prokof'yeva/

SOURCE: optika i spektroskopiya, v.15, no.3, 1963, 431

TOPIC TAGS: dipole moment, dipole moment derivative, electro-optical parameter, methane, ethane

ABSTRACT: In this brief note L.M.Sverdlov and N.I.Prokof'yeva take exception to some of the critical remarks of L.A.Gribov (see ACCESSION NR: AP3007284) regarding their paper in this issue of Optika i spektroskopiya (see ACCESSION NR: AP3007283) concerning calculation of the dipole moments of ethane and methane. The point under discussion is the feasbility of expressing the dipole moment derivatives of isotope-substituted molecules (for example, deutero-methane) in terms of the dipole moment derivatives of the higher symmetry non-substituted molecule (methane). The note must be read in conjunction with above mentioned papers and earlier pap-

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 19968-63
ACCESSION NR: AP3007235

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ers by Sverdlov.

ASSOCIATION: none

SUBMITTED: 26Jul63 DATE ACQ: 09Oct63 ENCL: 00

SUB CODE: PH NO REF SOV: 001 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

PROKOF'YEVA, N.I.; SVERDLOV, L.M.; SUSHCHINSKIY, M.M.

Calculation of the integral intensities and depolarization in the Raman spectra of cyclohexane and deuterocyclohexane. Opt. i spektr. 15 no.4:464-470 O '63. (MIRA 16:11)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

ACCESSION NR: AP4009466 S/0051/63/015/006/0814/0816

AUTHOR: Sverdlov, L.M.

TITLE: Formulas for the intensities of the combination tones and overtones in Raman and infrared absorption spectra of polyatomic molecules

SOURCE: Optika i spektroskopiya, v.15, no.6,1963, 814-816

TOPIC TAGS: combination tone, combination tone intensity, overtone, overtone intensity, Raman spectrum, infrared absorption spectrum, line intensity, polyatomic molecule

ABSTRACT: The question of the intensity of combination tones and overtones in vibrational spectra was first considered in the zeroth approximation of valence-optical theory by M.V.Vol'kenshteyn (Usp.fiz.nauk,29,54,1946). In the present brief communication there are adduced formulas for calculating the intensity of combination tones and overtones in the first approximation of valence-optical theory. The initial equation is taken from the work of Vol'kenshteyn. The subsequent equations for the combination tone and overtone intensities in Raman and infrared absorption spectra of polyatomic molecules are derived by differentiation and further manipula-

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AP4009466

tion of the formulas derived earlier by the author (L.M.Sverdlov, Opt.i spektr.14, 771,1963), using the earlier notation. [Abstracter's note: The notation is not explained in the present paper.] Orig.art.has: 6 formulas and 2 matrices.

ASSOCIATION: none

SUBMITTED: 05Nov62 DATE ACQ: 03Jan64 ENCL: 00

SUB CODE: PH NR REF SOV: 003 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 13213-63 EWP(q)/BDS/EWT(m) AFFTC DE/MJW/JD

ACCESSION NR: AP3002929 S/0076/63/037/006/1275/1280

56
55

AUTHOR: Kapshtal', V. N.; Sverdlov, L.M.

TITLE: Calculation and interpretation of vibrational spectra of diboranes. 1. Deuterium-substituted diboranes.

27

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 6, 1963, 1275-1280

TOPIC TAGS: vibrational spectrum, diborane, deuterium-substituted borane

ABSTRACT: A calculation has been made of the normal vibrating frequencies of 12 partially deuterated diborane derivatives: HDB sup 10 H sub 2 B sup 10 H sub 2, HDB sub 11 H sub 2 B sup 11 H sub 2, H sub 2 B sup 11 HDB sup 11 H sup 2, D sub 2 B sup 10 DH, trans-HDB sup 10 H sub 2 B sup 10 DH, HDB sup 10 D sub 2 B sup 10 H sub 2, D sub 2 B sub 10 D sub 2 B sup 10 Hsub 2, cis-HDB sup 10 D sub 2 B sup 10DH, trans-HDB sup 10 D sub 2 B sup 10 DH, HDB sup 11 D sub 2 B sup 11 D sub 2 and D sub 2 B 11 HDB sup 11 D sub 2. An interpretation of the infrared spectra of mono and petadeiterpsibstotited* diboranes has been given. The characteristic frequencies have been determined for various structural groups contained in the deuterosubstituted diboranes. Orig. art. has: 4 tables, 1 diagram and 9 equations.

Association: Saratov Polytechnic Inst.

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

PROKOF'YEVA, N.I.; SVERDLOV, L.M.

Calculation of the electrooptical parameters and absolute intensities in the Raman spectra of gaseous ethane and hexadeuteroethane. Opt. i spektr. 16 no.2:370-372 F '64. (MIRA 17:4)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

KRAYNOV, Ye.P.; PROKOF'YEVA, N.I.; SVERDLOV, L.M.

Calculation and interpretation of the vibrational spectra of naphthenes. Opt. i spektr. 16 no. 4:567-571 Ap '64. (MIRA 17:5)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 6980-65 EWT(1)/T ASD(a)-5/AFWL/AFETR/SSD/ESD(gs)/ESD(t)/RAEM(t)/IJP(c)

ACCESSION NR: AP4044848 S/0051/64/017/003/0369/0373

AUTHOR: Sverdlov, L. M. 13

TITLE: Calculation of the intensity and polarization in Raman spectra of the polyatomic molecules

SOURCE: Optika i spektroskopiya, v. 17, no. 3, 1964, 369-373

TOPIC TAGS: polyatomic molecule, Raman scattering, Raman spectrum, line intensity, polarization

ABSTRACT: A new method previously proposed by the author (Opt. i spektr. v. 14, 731, 1963) for calculating the intensities and the polarizations in Raman spectra of polyatomic molecules, based on a matrix representation of the components of the tensor of the derivatives of the polarizability of the molecule with respect to normal coordinates, is demonstrated using a three-atom nonlinear molecule of the form XY_2 as an example. It is claimed that an advantage of

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 6980-65

ACCESSION NR: AP4044848

the new method is the clarity and automatization of all the calculations. Orig. art. has: 1 figure and 23 formulas.

ASSOCIATION: None

SUBMITTED: 10Nov63 ENCL: 00

SUB CODE: OP, NP NR REF SOV: 002 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 8705-65 EWT(1)/EWT(m)/EPF(c)/EEC(k)-2/EWP(j)/EEC(t) Pc-4/Pr-4/Pi-4
ASD(a)-5/ESD(t)/RAEM(t)/SSD/AFWL/AS(mp)-2/ESD(gs)/AFETR RM

ACCESSION NR: AP4044849 S/0051/64/017/003/0374/0380

AUTHORS: Prokof'yeva, N. I.; Sverdlov, L. M.; Sushchinskiy, M. M.

TITLE: Calculation of electro-optical parameters and integrated intensities in Raman spectra of chloroform, deuterochloroform, and carbon tetrachloride

SOURCE: Optika i spektroskopiya, v. 17, no. 3, 1964, 374-380

TOPIC TAGS: Raman spectrum, line intensity, electro optical parameter, methane halide, deuterated compound, carbon tetrachloride, polarization

ABSTRACT: This is an extension of earlier work by the authors (Opt. i spektr. v. 13, 324, 1962; v. 15, 327, 1963; v. 15, 464, 1963; v. 16, 370, 1964) to compounds other than hydrocarbons, and particularly methane halides. To this end, the authors calculated the electro-optical parameters characterizing the C--H and C--Cl

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 8705-65

ACCESSION NR: AP4044849

bonds, the integrated intensities, and the polarizations of the lines in the Raman spectra of chloroform, deuterochloroform, and carbon tetrachloride. The data obtained previously in the first approximation of the valence-optical theory were employed. The calculation confirms the conclusion that it is essential to use the first approximation of the valence-optical theory in the calculation of the intensities in Raman spectra. The measurement procedure was described by the authors in Opt. i spektr. v. 15, 464, 1963. Analysis of the resultant system of electro-optical parameters for chloroform and deuterochloroform leads also to the conclusion that the C--Cl bond in the chloroform molecule has no axial symmetry, and that on going from $CHCl_3$ to CCl_4 the values of the majority of single-type electro-optical parameters increase noticeably. Orig. art. has: 5 formulas and 3 tables, and 1 figure.

ASSOCIATION: None

SUBMITTED: 19Nov63 ENCL: 00

SUB CODE: OP NR REF SOV: 008 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.; KLOCHKOVSKIY, Yu.V.

Determining the electro-optical parameters of CH_3F molecules on the basis of experimental data on the absolute intensity of infrared spectra. Opt. i spektr. 17 no.3:466-468 S '64. (MIRA 17:10)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Note on L.A. Gribov's article. Opt. i spektr. 17 no.5:802-803 N '64. (MIRA 17:12)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.

Relations between the infrared band intensities in a system of isotopic dipole molecules. Opt. i spektr. 17 no.6:947-949 D '64. (MIRA 18:3)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 21182-65 EWT(1)/EWT(m)/EPF(c)/EEC(k)-2/EWP(j)/EEC(t) Pc-4/Pr-4/Pi-4 RM

ACCESSION NR: AP5003020 S/0051/65/018/001/0027/0032

AUTHOR: Sverdlov, L. M. B

TITLE: Concerning the use of experimental data on the intensities of infrared bands of isotopic molecules to solve the inverse electro-optical problem 21

SOURCE: Optika i spektroskopiya, v. 18, no. 1, 1965, 27-32

TOPIC TAGS: ir band, ir intensity, isotopic molecule, electro-optical parameters

ABSTRACT: The author has shown in an earlier paper (with N. I. Prokof'yeva, Opt. i spektr. v. 15, 424, 1963) that in the case of dipole-less high-symmetry molecules, the number of linearly-independent combinations of electron-optical parameters is equal to the number of normal oscillations of the initial molecules that are active in the infrared spectrum, so that the experimental data on the intensities of the infrared bands of the isotopic molecules cannot be used to determine a larger number of electron optical parameters. In the case of a molecule consisting of N atoms, having 3N - 6 normal oscillation modes, and possessing a dipole moment, it is shown in the present article that the number of

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L 21182-65
ACCESSION NR: AP5003020

3

linearly-independent electron-optical parameters, 3(3N - 6), will be equal to the number of normal oscillations of the initial highly-symmetrical molecule, and again the experimental data will not suffice. By way of an example, it is shown that in the case of molecules of the type CH_3X, the experimental intensities of the infrared bands of the molecules CH_3X and CD_3X can determine only three linearly-independent combinations of electro-optical parameters for each of the symmetry types A_1 and E. A table is presented of the electro-optical parameters of CH_3Cl, CH_3Br, and CH_3I. Erroneous conclusions reached by other investigators are pointed out. Orig. art. has: 12 formulas and 1 table.

ASSOCIATION: None

SUBMITTED: 06Dec63 ENCL: 00 SUB CODE: OP

NR REF SOV: 007 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

L 21180-65 EWT(1)/EWT(m)/EPF(c)/EEC(k)-2/EWP(j)/EEC(t) Pc-4/Pr-4/Pi-4 AFWL/
ACCESSION NR: AP5003021 ASD(m)-3/AS(mp)-2/RAEM(a)/ S/0051/65/018/001/0033/0037
ESD(gs)/ESD(t) RM

AUTHOR: Sverdlov, L. M.; Prokof'yeva, N. I.

B

TITLE: Concerning the need for using the first approximation of the valence-optical theory in calculations of the electro-optical parameters, intensities, and depolarizations in Raman spectra of polyatomic molecules 21

SOURCE: Optika i spektroskopiya, v. 18, no. 1, 1965, 33-37

TOPIC TAGS: Raman spectrum, valence optical theory, electro-optical parameter, intensity, depolarization, polyatomic molecule

ABSTRACT: In view of the discrepancies between the experimental values of the electro-optical parameters and intensities in the Raman spectra of polyatomic molecules and the values calculated in the zeroth approximation of the valence-optical theory of Vol'kenshteyn and Yel'yashevich (with B. I. Stepanov, Kolebaniya molekul [Vibrations of Molecules], v. II, GITTL, M-L, 1949), the authors present a more detailed analysis of the accuracy of the zeroth approximation and shows that it leads to results that have no physical meaning. Calculations for molecules of different classes show that the electro-optical parameters,

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L 21180-65
ACCESSION NR: AP5003021

intensities, and depolarizations of the lines in Raman spectra of polyatomic molecules must, as in infrared spectra, be calculated in the first approximation of the theory, with account taken of the interaction between the individual structural elements of the molecule. The conditions necessary to prove the need for using the first-approximation theory are derived. Examples of molecules for which the conditions are satisfied (cyclopropane) and are not satisfied (benzene) are briefly discussed. The calculations were made for molecules for which experimental data on the integral intensities of the lines in the Raman spectrum were variable, namely, methane, ethane, cyclohexane and deuterocyclohexane, cyclopentane, chloroform and deuterochloroform, and carbon tetrachloride. It is stated in the conclusion that this decuction is of great fundamental importance. Orig. art. has: 3 formulas and 1 table.

ASSOCIATION: None

SUBMITTED: 29Dec63 ENCL: 00 SUB CODE: OP

NR REF SOV: 010 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.M.; PROKOF'YEVA, N.I.

Necessity for applying the first approximation in the valence-optical theory in calculations of electro-optical parameters, intensities, and depolarizations in Raman scattering spectra of polyatomic molecules. Opt. i spektr. 18 no.1:33-37 Ja '65. (MIRA 18:4)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.S.

Double internal ricochet in a gunshot wound. Sud.-med. ekspert. 8 no.2:39-40 Ap-Je '65. (MIRA 18:8)

1. Leningradskoye gorodskoye byuro sudebnomeditsinskoy ekspertizy (nachal'nik M.A.Dal').

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, L.S.

Unusual gunshot injury from an atypical weapon. Sud.-med. ekspert. 7 no.3:41-43 Jl-S '64. (MIRA 17:10)

1. Leningradskoye gorodskoye byuro sudebnomeditsinskoy ekspertizy (nachal'nik M.A. Dal').

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, [illegible]

Nuclear appendages of neutrophils in some diseases of the blood system in children. Vop. gemat. v pediat. no.3:79-82 '64. (MIRA 18:7)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

[illegible], [illegible], [illegible], L.[illegible].

Gas--Heating and Cooking

Automatic ga hot-water heater. Gor.khoz.Mosk. 26, no. 4, 1952.

MONTHLY LIST OF RUSSIAN ACCESSIONS, LIBRARY OF CONGRESS, JULY 1952. UNCLASSIFIED.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, M.A.

Economic and operational estimates by means of electronic computers. Trudy TSNIIMF no.48:63-71 '63. (MIRA 16:8)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, M.B.

The MS-10-type semiautomatic edger. Biul.tekh.-ekon.inform. no.12:22-24 '59. (MIRA 13:4)
(Machine tools)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

KIZEL'SHTEYN, Vladimir Yakovlevich; KOSMACHEV, I.G., retsenzent; SVERDIOL M.B., retsenzent; STEPANOV, Ye.V., nauchn. red.; SMIRNOV, Yu.I., red.

[Chemical and mechanical methods of metal treatment] Khimiko-mekhanicheskaia obrabotka metallov. Leningrad, "Sudostroenie," 1964. 139 p. (MIRA 17:4)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

PHASE I BOOK EXPLOITATION 933

Sverdlov, M. I., Candidate of Technical Sciences, and Lagelayskaya, N. A., Engineer

Shtampovka na pressakh-avtomatakh; mnogooperatsionnyye pressy (Stamping on Automatic Presses; Multiple-action Presses) Moscow, Mashgiz, 1955. 64 p. (Series: Bibliotechka shtampovshchika, vyp. 9) 6,000 copies printed.

Gen. Ed.: Romanovskiy, Viktor Petrovich, Candidate of Technical Sciences; Ed.: Tsukker, G. Ye., Engineer; Ed. of Publishing House: Leykina, T. L.; Tech. Ed.: Sokolova, L. V.; Managing Ed. for literature on machine building technology (Leningrad Division, Mashgiz): Nikitin, P. S., Engineer.

PURPOSE: The booklet is intended to promote wide use of advanced cold stamping methods and the exchange of progressive work experience among workers in stamping shops.

COVERAGE: In this, the 9th booklet of the Stamping Press Operator's Little Library, stamping methods used on multiple-action automatic presses are presented and design of processes for making parts. Arrangements of multiple-action drawing presses, automatic bending presses and dies of standard design are described. No personalities are mentioned. There are 8 references, all Soviet.

~~Card 1/3~~

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, M.I., kandidat tekhnicheskikh nauk, dotsent.

The formation of folds and tearing during deep drawing. [Izd.] LONITOMASH vol.40:160-168 '56. (MLRA 10:4)
(Deep drawing (Metalwork))

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

BOGDANOV, V.M., zasl. izobretatel' RSFSR; BOBYSHEV, B.A., inzh., retsenzent; SVERDLOV, M.I., kand. tekhn. nauk, red.; VARKOVETSKAYA, A.I., red.izd-va; PETERSON, M.M., tekhn. red.; BARDINA, A.A., tekhn. red.

[Sectional die-stamping of parts in short-scale production] Shtampovka detalei po elementam v melkoseriinom proizvodstve. Izd.2., perer. i dop. Moskva, Mashgiz, 1963. 186 p. (MIRA 16:8)

(Sheetmetal work)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SMIRNOV-ALYAYEV, G.A., prof., doktor tekhn. nauk; VAYNTRAUB, D.A., kand. tekhn.nauk; MAZO, S.G., inzh., retsenzent; TEPLITSKIY, B.M., retsenzent; SVERDLOV, M.I., kand. tekhn. nauk, red.; VARKOVETSKAYA, A.I., red.izd-va; CHFAS, M.A., red. izd-va; PETERSON, M.M., tekhn. red.

[Cold stamping in the manufacture of instruments] Kholodnaia shtampovka v priborostroenii. Izd.2., perer. i dop. Moskva, Mashgiz, 1963. 434 p. (MIRA 16:11)
(Instrument manufacture) (Forging)
(Sheet-metal work)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

VALITEV, Sadyk Abdulovich, [illegible], M.I., red.

[Combined deep drawing of parts with simultaneous reduction of wall thickness] Kombinirovannaia glubokaia vytiazhka detalei s utonsheniem stenok. Leningrad, 1965. 24 p. (MIRA 18:10)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, M.L,.

Spectrum, Analysis

Correlation between oscillation frequencies of isotopic molecules, (laws of the sums of products). Dokl. An SSSR 86, no. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, December, 1952. UNCLASSIFIED.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, M.M., inzhener.

High-production method for the alignment of electric machines with sliding bearings. Sbor.mat. o nov.tekh. v stroi. 15 no.7:15-16 Jl '53. (MLRA 6:7)

(Bearings (Machinery))

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, M. M.; UDALOV, N. P.

Thermistors. Priborostroenie no.11:28-30 N '61. (MIRA 14:10)
(Thermistors)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, M.N.

VOLOSATOV, V.A.; SVERDLOV, M.N., redakter; RODCHENKO, N.I., tekhnicheskiy redakter.

[Mechanizing the work of laying out sheet material] Mekhanizatsiia rabot po raskroiu listovogo materiala. Leningrad. Leningradskoe gazetno-zhurnal'noe i knizhnoe izd-vo, 1953. 64 p. [Microfilm] (Sheet-metal work) (MLRA 9:6)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

TARAKANOVA, M.S., inzh.; SVERDLOV, M.P., inzh.

Single-channel (OTT-2) voice-frequency telegraphy apparatus using transistor devices. Vest. sviazi 22 no.11:3-5 N '62. (MIRA 16:12)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

AMARANTOV, V.N.; SVERDLOV, M.P.

Transistorized voice-frequency telegraphy apparatus with frequency modulation. Elektrosviaz' 19 no.5:57-63 My '65. (MIRA 18:6)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, M.P.; YETRUKHIN, N.N.; YAROSLAVSKIY, L.I.; ZUBOVSKIY, L.I.; GUROV, V.S.; TARAKANOVA, M.S., otv. red.; BATRAKOVA, T.A., red.

[New TT-17P and OTT-2S voice frequency telegraphy apparatus using transistor devices] Novaia apparatura tonal'nogo telegrafirovaniia na poluprovodnikovykh priborakh TT-17P i OTT-2S; informatsionnyi sbornik. Moskva, Sviaz', 1965. 125 p. (MIRA 18:7)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

AMARANTOV, V.N., kand.tekhn.nauk; SVERDLOV, M.P., inzh.

Transistorized voice-frequency telegraphy apparatus. Vest. sviazi 22 no.9:3-4 S '62. (MIRA 15:9)
(Telegraph--Equipment and supplies)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

VORONKOV, A.V.; MAKAROV, N.I.; SVERDLOV, N.B.; FILIMONOV, I.N.

Engineering equipment of the new buildings of Moscow State University. (MLRA 6:10)
Gor.khoz.Mosk. vol.27 no.9:11-16 S '53.
(Moscow University)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, Natan Borisovich; YARTSEV, N., red.; POKHLEBKINA, M., tekhn.red.

[Masters of high proficiency] Mastera vysshego klassa. Moskva, Moskovskii rabochii, 1963. 115 p. (MIRA 17:1)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, P.; KOROVNITSYN, A.

Mechanizing the accounting for pension operations. Den. i kred. 21 no.3:58-59 Mr '63. (MIRA 16:3)

1. Zamestitel' glavnogo bukhgaltera gorodskogo upravleniya Severo-Osetinskoy respublikanskoy kontory Gosbanka (for Sverdlov). 2. Starshiy inspektor glavnoy bukhgalterii Tul'skoy oblastnoy kontory Gosbanka (for Korovnitsyn).
(Banks and banking--Accounting) (Pensions)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, P.

Improve the accounting for financing limits. Den. i kred. 21 no.12:70-71 D '63. (MIRA 17:1)

1. Zamestitel' glavnogo bukhgaltera gorodskogo upravleniya Severo-Osetinskoy respublikanskoy kontory Gosbanka.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, P.M.

Sverdlov, P.M. and Ioffe, Yu. R. "Unification of cross sections of ferroconcrete elements," Stroit. prom-st', 1948, No. 12, p. 243 (cover)

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

PA 30/49T62

SVERDLOV, P. M.

USSR/Engineering Oct 48
Efficiency, Industrial
Power Plants, Electric-

"Industrial Types of Distributing Installation Buildings," P. M. Sverdlov, Engr, 3 pp

"Elek Stants" Vol XIX, No 10

Describes and discusses three designs for subject buildings. Table shows materials, labor, and cost for each type. Includes three sketches.

30/49T62

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV4P8M8 600

1. SVERDLOV, F. M., TER-OVANESOV, G. S.

2. USSR (600)

4. Electric Lines - Overhead

7. Foundations of high voltage electric transmission lines from prefabricated reinforced concrete. Biul. stroi. tekh. 9 No. 7 (1952) Inzh.; Teploelektroproyekt

9. Monthly List of Russian Accessions, Library of Congress, August, 1952.
UNCLASSIFIED.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, P. M., Engr

USSR/Engineering - Construction, Power Lines 15 Apr 52

"Sectional Reinforced Concrete Foundations for High-Voltage Electric Power Lines," P. M. Sverdlov, G. S. Ter-Ovanesov, Engineers

"Byul Stroitel Tekh" No 7, pp 18-20

Describes 2 types of prefabricated sectional foundation, designed by Inst of "Teploektroproyekt." They are hollow constructions of prismatic or tubular shape. Consumption of concrete amounts to 0.71 cu m for each ton of wire-supporting poles, i.e. 12% of vol of solid foundation.

213T60

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

IOFFE, YU. R., SVERDLOV, P.M.

Reinforced Concrete Construction. Electric Power Plants.

Supporting reinforced structures used in electric power station construction.
Elek. sta., 23, No. 2, 1952.
Inzh.

Monthly List of Russian Accessions, Library of Congress, April 1952. UNCLASSIFIED.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, P. M.

112-3-5317

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 3, p. 38 (USSR)

AUTHOR: Sverdlov, P.M.

TITLE: Use of Prefabricated Reinforced Concrete in the Construction of Electric Power Stations (Primeneniye sbornogo zhelezobetona v zdaniyakh i sooruzheniyakh elektrostantsiy)

PERIODICAL: In the sbornik: Primeneniye sbornykh zhelezobeton. konstruktsiy v prom. str-ve, Moscow, Gos. izd-vo lit. po str-vu i arkhitekture, 1955, pp. 64-76

ABSTRACT: Described is a standard design procedure in the use of prefabricated reinforced concrete structural members for the main building of a heat-and-power station. This main building consists of an engine room with a span of 25 m and a height of 20 m (measured to the lowest part of the roof truss), equipped with a crane of 75 ton lifting capacity; a deaerating and bunker section, and a boiler room 27 m wide and 40 m high (to the cornice). The maximum dimension of assembly components is 21 m, with a

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SVERDLOV, P.M., inzhener; IOFFE, Yu.R., inzhener.

Main building of the electric power plant made of precast reinforced concrete. Strei.prom.34 no.6:20-24 Je '56. (MLRA 9:9)
(Precast concrete construction) (Electric power plants)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654120002-0

SOV/97-58-12-2/13

AUTHOR: Sverdlov, P.M. (Engineer)

TITLE: Precast Reinforced Concrete Used for Construction of Thermal [illegible] Power Stations (Sbornyy zhelezobeton v stroitel'stve teplovykh elektrostantsiy).

PERIODICAL: Beton i Zhelezobeton, 1958, Nr.12, pp.444-449 (USSR)

ABSTRACT: During recent years the volume of precast reinforced concrete used for the construction of district heating power stations increased to 1 million m^3 per year. The majority of these buildings are planned and constructed from precast reinforced concrete units, that is skeletons, floors, roofs, walls, foundations, channels and tunnels. Roofs are assembled from large panels measuring 1.5 x 6 m or 3 x 6 m, or from reinforced aerated concrete slabs, type KAP, 1.5 x 6 m in size. Floors are made from ribbed panels measuring 1.5 x 6 m with ribs 400 mm high, designed to carry 2.5 t/m^2. Frames and beams spanning up to 36 m are designed from prestressed reinforced concrete in accordance with specification of Gosstroy of USSR; walls are formed from reinforced

Card 1/3

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