

9) , " " - " " ;
,
,

10) 100°K; ,

11) ;
" " 1 ,

12) - " " ,
.

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" "

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- - .

" " , " " " " - ,

)

(

5

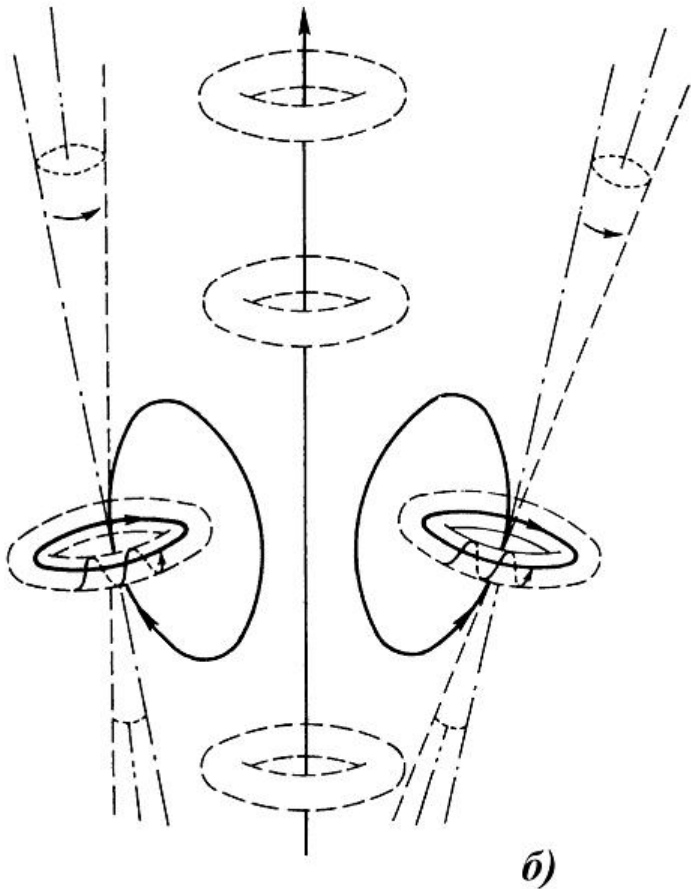
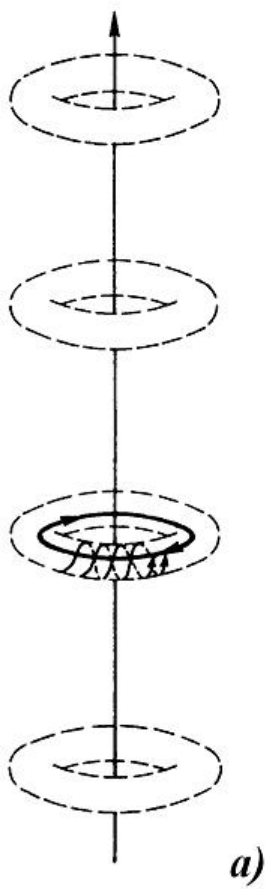
(, , " , "

(, ,) , " , "

, , " , " , " , "

, , " (.1) , ,

$\sim 22^\circ$, $\sim 17,5^\circ$,



.1

; -

: -

10^{18}

[6](#)

35° 44°.

(" ")

(

20-50%.

).

($\sim 10^{39} \cdot 10^{-3}$)⁷,

(")

"

"

~100°K,

[97]

(

).

($10^{5\circ}\text{K}$)

[96]

A.

Z

N

A

N

" "

10^7 ,

10^{27} , . . . 20

(

(

)-

(

[8](#)

),

H⁺ OH.

"

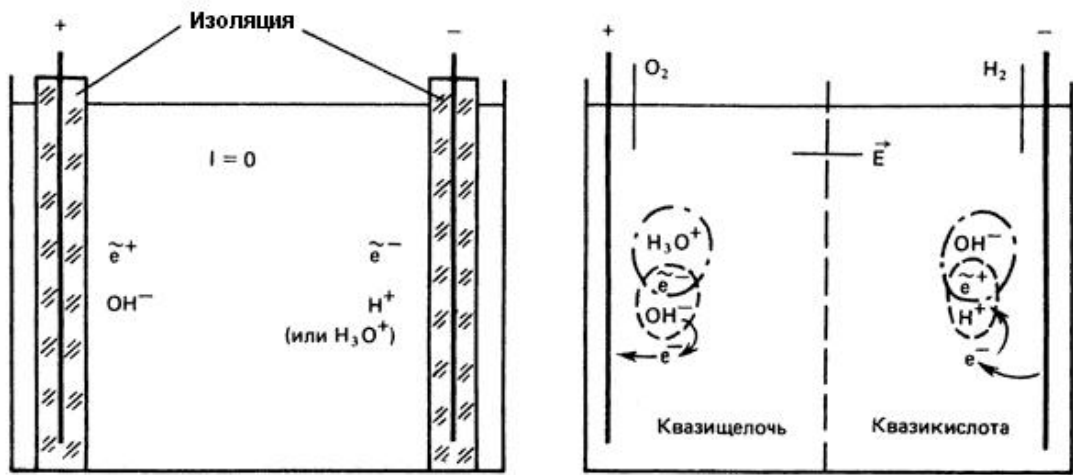
H⁺e⁻ OH⁺e⁺(

),

(

).²

(. 2).



.2

()

()

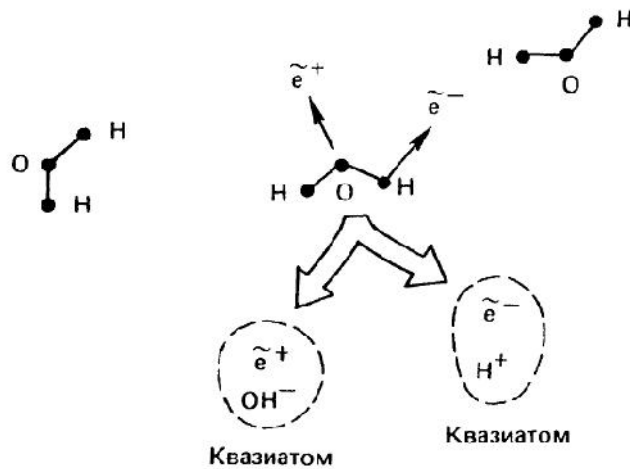
-

О Н 1,53Å Н Н), (" " ~1,79Å.
 (0,96Å)

Н⁺ ОН⁻. О Н,

(. 3).

Н⁺е⁻ ОН⁻е⁺



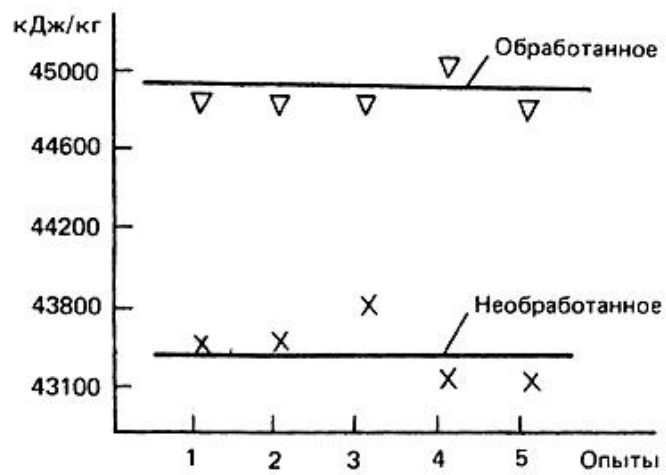
.3

5-10% (.4),

~4,8%,
~6°C,

~2,6%.

[10](#)



.4

-1

1

2

3

1975 [96] 1982 80- ()

4

5

" " " ()

6

7

($\sim 10^{39-3}$)

8

9

10