

: CGH, _____, _____.

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1... 2008

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[2...4] (, .), , - .

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[5] «

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[6],

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2D 3D -

[7].

[8]

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(CGH),

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[9].)

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[9...12],

μ.

1966 - 1967

n.

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n.

n,

[10,12,13,14].

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(J.B.Pendry.) [16,17]. 2000
Smith and Richard A. Shelby) [18...20]

(-) (David R.

[18].

n.

n= - 1,

[14,15].

n.

(-) « » [21].

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μ ?» (. [22...24])

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, H, E, k, k ,

- S k (, ,) . . . S k

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, d. - , n= -1 1 < d. (1)

[25, 39].

... « » H E, «C. » [26]

« » [27].

... 4 4 - [38]. ()

[28],

(50 .., 50 .., 1984 . [29, 33]),

(.., .., 1985 . [32]),

(15 .., 2007 .

(Jianwei Miao

-X -ray
[34,35]),

(125' , 365 2008 . [36,37])

?

(1...100)

2D 3D

« ».

$$d = 2,44 \lambda_{max} \frac{F}{D}$$

(1)

d - ;
max -

Harris, J.S. Weiner and R.L. Kostelak [41],
($\lambda/4$)

1991

12 nm

(" "), (evanescent wave).

[40].
.4 .5

Pendry, J. B.

S-

$$E_{0s+} = [0 \ 1 \ 0] \exp(ik_z z + ik_x x - i \omega t) \quad (3)$$

$$k_z = i (k_x^2 + k_y^2 + \epsilon^2 c^{-2})^{1/2}, \quad \epsilon^2 c^{-2} < k_x^2 + k_y^2 \quad (4)$$

$$E_{0s-} = r[0 \ 1 \ 0] \exp(-ik_z z + ik_x x - i \omega t) \quad (5)$$

$$E_{1s+} = t[0 \ 1 \ 0] \exp(ik_z z + ik_x x - i \omega t) \quad (6)$$

$$k_z = +i (k_x^2 + k_y^2 - \mu^2 c^{-2})^{1/2}, \quad \mu^2 c^{-2} < k_x^2 + k_y^2$$

S-

(7)

$$k_{x'}^2 + k_{y'}^2 = \epsilon^2 c^{-2} \quad (7)$$

Xiang Zhang

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.C.

« » [22,42], .6.

()

[43,44].

. Xiang Zhang

[39]
superlensing received

(35).

[44].

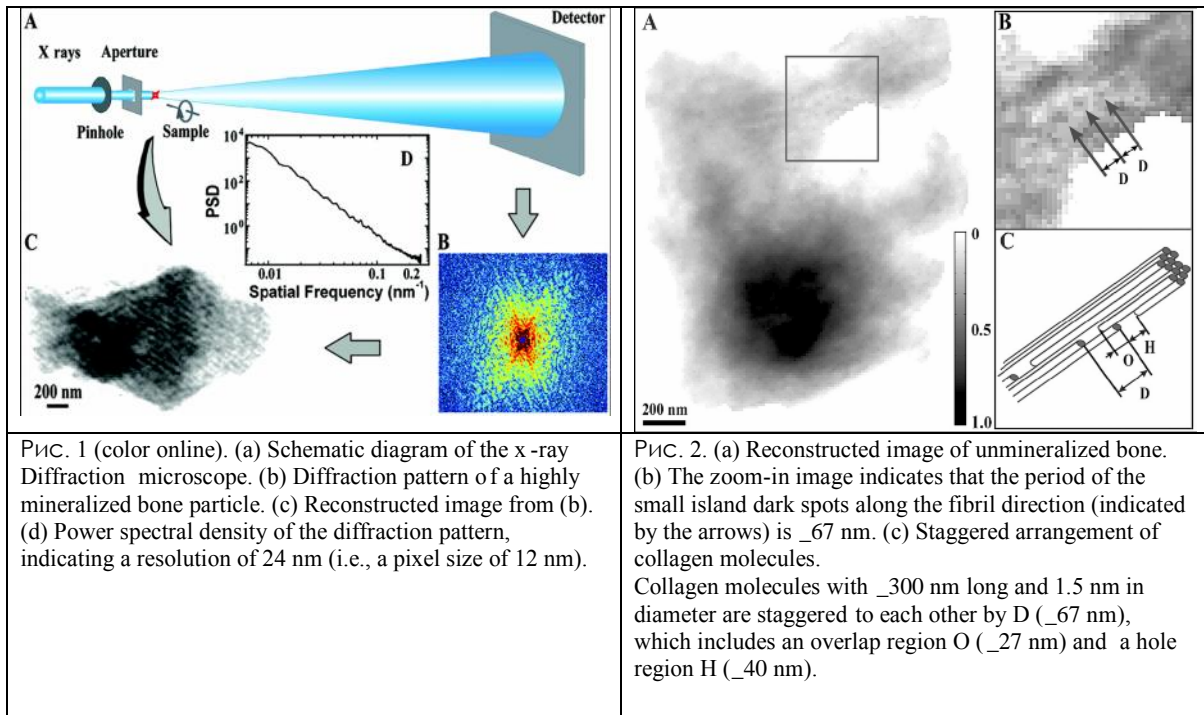
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- . - [23, 24, 30, 31]

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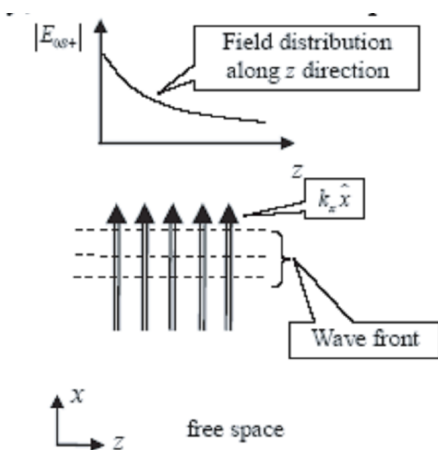


Рис 4: Эванесцентная волна вдоль координаты Z [40]

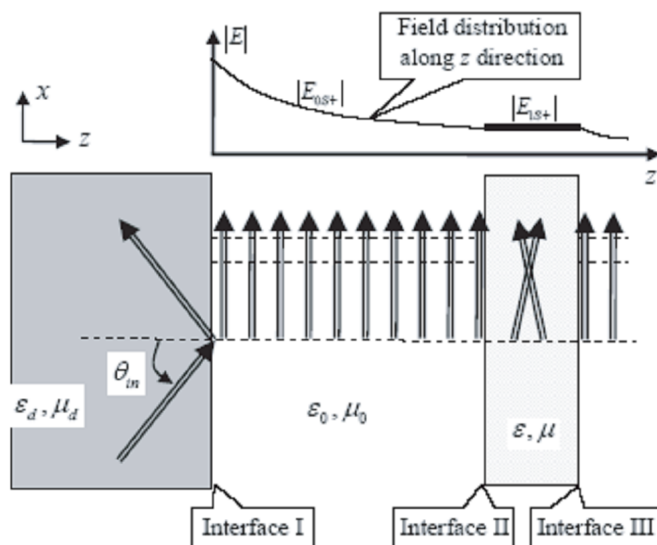


Figure 5: The wave inside the negative refraction medium turns into propagation one.

Рис. 5. Интерпретация волнового фронта в среде с отрицательным показателем преломления [40]

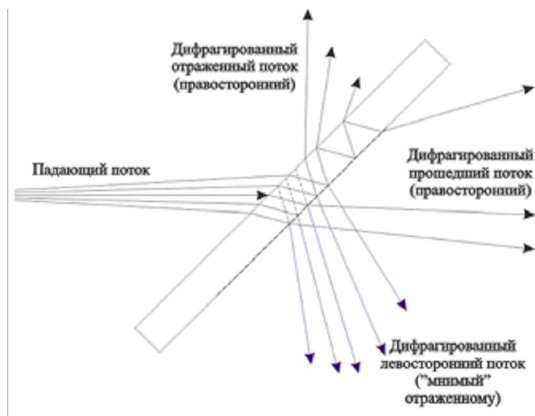


Рис. 6. Интерпретация геометрической волны [22,42]

