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Ti – TiO₂ – Pt.

The results of the investigations of catalytic system Ti – TiO₂ – Pt are shown. The problem of the creation of active layer on the surface of metal carrier on TiO₂ basis is considered. Platinum distribution on the oxide layer is studied by dint of X-ray, photoelectron spectroscopy and fluorescent X-ray. The developed catalysts have highly catalytic activity in the process of exhausted gases purification from nitric oxide by means of ammonia.

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, ; :
 - ;
 - .
 , () (Pt, Pd).
 (TiO₂)
 [1].
 Ti - TiO₂ - Pt
 [2] , 10 %-
 Pt [3],
 ()
 TiO₂ - H₂PtCl₆
 ()

(H₂PtCl₆·6 H₂O) 10 %-

- 1 %.

H₂PtCl₆

2

= 110 ° ,

= 500 ° 2 .

),

0,15 % ().

() (XPS Kratos),

() (« »),

- 2,0),

(JSM-820 «Jeol» ()).

(O1s, Pt4d_{5/2}, Ti2p)

5 .

Pt/Ti,

Pt/Ti

1 2,

C_w

TiO₂,

d_{\max} ,
().

TiO₂

		Pt/Ti	Pt, %	d_{\max} , 10 ⁻⁵	C _w , %	L, Å
1	10 % - H_2PtCl_6 - 1	0,022	0,42	0,487	1,8	80
2	10 % - H_2PtCl_6 - 3	0,045	0,8	1,54	3,5	200
3	10 % - H_2PtCl_6 + 1 % - H_3COOH - 1	0,032	0,6	1,02	2,3	100
4	10 % - H_2PtCl_6 + 1 % - H_3COOH - 3	0,083	1,5	1,90	4,3	120
5	10 % - H_2PtCl_6 + 1 % - COOH - 1	0,047	0,9	0,703	2,57	<20
6	10 % - H_2PtCl_6 + 1 % - COOH - 3	0,11	2,0	1,248	2,85	~20

()

L,

-

(111), (200), (220), (311)

(222).

Pt

1 2 (),

5 6,

Pt4f,

. 1.

2

-

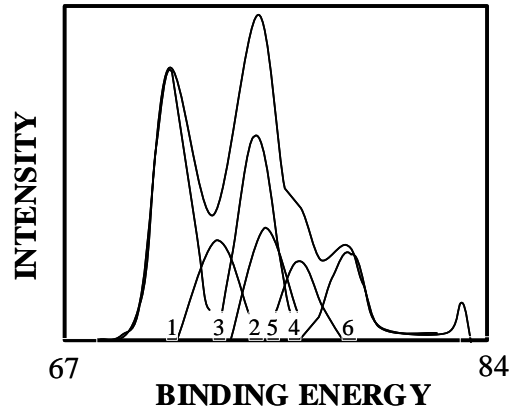
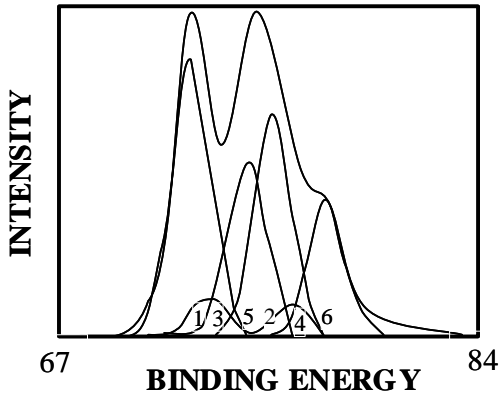
Pt4f_{7/2,5/2}

1

2

,

Pt4f



c. 1.

Pt4f_{7/2,5/2}

:

1;

2

Pt4f

1

Pt⁺ (E . Pt4f_{7/2} = 72,4 , PtCl₂ PtO

PtCl Pt₂O); Pt²⁺ (E . Pt4f_{7/2} = 73,1 ,

PtCl Pt₂O /

) Pt⁴⁺ (E . Pt4f_{7/2} = 74,6 ,

PtO₂).

Pt4f_{7/2} -

[3].

Pt4f

2,

71,4, 73,1 74,6

[4]

Pt⁰ (50 %

), Pt²⁺ PtCl₂ PtO Pt⁴⁺ PtCl₄ PtO₂.

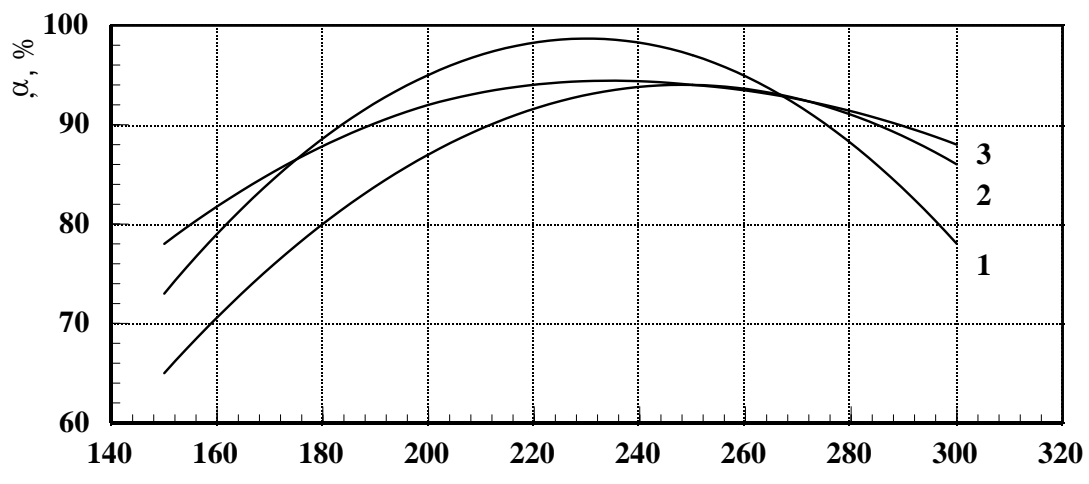
10000⁻¹

-0,11 ÷ 0,12 %

0,12 ÷ 1,3 %

NH₃: NO_x = 1,1 ÷ 1.

. 2



. 2.

10000⁻¹:

1 – 10 % H₂PtCl₆ + 1 % HCOOH; 2 – 10 % H₂PtCl₆; 3 – 10 % H₂PtCl₆ + 1 % CH₃COOH.

H₂PtCl₆ 10 % - 1 % - ; 200 – 220 ° ; 250 ° 300 °

