A SYNERGISTIC EFFECT ON Tc-Me/support CATALYTIC SYSTEMS (Me=Pt,Pd,Rh,Ru,Ni).

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The catalytic properties of a bimetallic system Tc-Me/support (Me=Pt,Pd,Rh,Ru,Ni, support - Al_2O_3,SiO_2,MgO,Y_2O_3,TiO_2) in the dehydrogenation of cyclic hydrocarbons and dehydrocyclization of n-hexane have been investigated. The content of the deposited metals was 0,1-1%. A nonadditive increase in the catalytic activity of bimetallic catalysts in comparison with monometallic systems has been established. This effect depends on the ratio of the amounts of the supported metals and on the nature of the support. The results for the dehydrogenation of cyclohexane on mono- and bimetallic catalysts are listed in the Table. The coefficient of synergism has been calculated for all investigated systems:

Table. Dehydrogenation of cyclohexane on Tc-Me.

Metal content (%)		T (K)	Yield of benzene (%)
Tc	Me		
Pt-Tc/Al_2O_3			
0,05	-	593	-
-	0,05		8
0,05	0,05		70
Pd-Tc/Al_2O_3			
0,1	-	593	2
-	0,1		2
0,1	0,1		33
Rh-Tc/Al_2O_3			
-	0,1	593	31
0,1	0,1		93
Ni-Tc/Al_2O_3			
0,1	-	693	3
-	2,0		25
0,1	2,0		55
Ru-Tc/Y_2O_3			
0,2	-	693	-
-	0,2		11
0,2	0,2		51