

**BITTA METALL BILAN MODIFIKATSIYA QILINGAN
KATALIZATORLAR ISHTIROKIDA PROPAN-BUTAN
ARALASHMASINING C-C BOG‘INING UZILISHI BILAN BORADIGAN
PARCHALANISHI**

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Tabiiy va neft yo‘ldosh gazlarining hamda propan-butan fraktsiyasining asosiy komponentlari C₂-C₄ olefinlarini [1-2], aromatik uglevodorodlar [3-5] va boshqa qimmatbaho neft-kimyoh mahsulotlarini [6-11] olish uchun arzon uglevodorod xom ashyosidir.

Mikrog‘ovak seolit katalizatorlari quyi C₃-C₄ alkanlarini quyi olefinlar va aromatik uglevodorodlarga aylantirish uchun eng istiqbolli materiallar bo‘lishi mumkin, chunki ular turli organik moddalarning dehidrogenatsiyasi, izomerizatsiyasi, degidrotsikllanishi va parchalash reaksiyalarida yuqori faollik va selektivlikni namoyish etadi [12-15].

Reaksiyaning gaz mahsulotlari xromatografik usulda qo‘shimcha termostat bilan jihozlangan issiqlik o‘tkazuvchi detektorli “Gazoxrom 3101” xromatografida quyidagi maqbul sharoitda tahlil qilindi: kolonka termostati harorati – 100°C, tashuvchi gaz (havo) oqimining sarfi -35 ml/min, faollashtirilgan ko‘mir bilan to‘ldirilgan kolonka uzunligi – 1 m, ichki diametri – 3 mm. Miqdoriy tahlil mutlaq darajalash usulida amalga oshirildi.

Rux ta’siri. 1 va 2-jadvallarda propan-butan aralashmasini yuqori haroratlarda parchalash jarayoni uchun yaratilgan katalizator 5Zn-5%CrF₃*5%CoO*NiO*ZrO₂*Na₂SO₄ va 5%CoO*5%NiO*2%ZrO₂*8%Na₂SO₄ katalizatorlar ishtirokida propan-butan aralashmasining yuqori haroratli C-C bog‘ining uzilishi bilan boradigan parchalanishi natijalari keltirilgan.

1-jadval

Propan-butan aralashmasini yuqori haroratlarda parchalash jarayoni uchun yaratilgan katalizator 5Zn-5%CoO*5%NiO*2%ZrO₂*8%Na₂SO₄ ishtirokida propan-butan aralashmasining yuqori haroratli C-C bog‘ining uzilishi bilan boradigan parchalanishi natijalari

Jarayon sharoiti:					
Harorat, °C	600	650	700	750	800
Ta'sirlashuv vaqti, s	0.24	0.24	0.24	0.24	0.24
Suv bug'i: reagent (dastlabki modda)	0,4:1	0,4:1	0,4:1	0,4:1	0,4:1
Tajriba natijalari: 1 .Unum, %(mass.) Gaz, shu jumladan.					
H ₂	99,43	99,21	98,65	98,05	95,93
CH ₄	0,06	0,21	0,66	1,73	1,94
C ₂ H ₄	2,07	4,30	9,02	18,26	26,89
C ₃ H ₆	1,67	7,27	14,47	25,44	31,20
ΣC ₄ H ₈	0,33	1,94	7,89	14,48	13,01
smola	0,06	0,32	0,39	0,68	1,94
Qurum moddalar	0,48	0,68	1,04	1,50	3,37
2.Unum	0,09	0,121	0,31	0,45	0,70
Σ To'yinmagan uglevodorodlari C ₂ - C ₄ % (mass.)	2,07	9,66	22,98	41,19	47,37
3.Konversiya darajasi, %(mass.)	3,74	14,08	33,39	62,89	80,31

1-jadvalda keltirilgan natijalar, 5Zn-5%CoO*5%NiO*2%ZrO₂*8%Na₂SO₄ ishtirokida 700-800 °C harorat oralig'ida etilen unumi 5%CoO*5%NiO*2%ZrO₂*8%Na₂SO₄ ishtirokidagi etilen unumi bilan solishtirganda 0,03-0,90% ga yuqori bo'ldi. 5%CoO*5%NiO*2%ZrO₂*8%Na₂SO₄ ni rux bilan transformatsiyasi sinovlarning butun harorat oralig'ida propilen unumining pasayishiga olib keldi. 800 °C da 5Zn-5%CoO*5%NiO*2%ZrO₂*8%Na₂SO₄ da 5%CoO*5%NiO*2%ZrO₂*8%Na₂SO₄ ga nisbatan C₂-C₄ to'yinmagan uglevodorodlar umumiy unumi 2% ga yuqori bo'ldi.

2-jadval

Propan-butan aralashmasini yuqori haroratlarda parchalash jarayoni uchun yaratilgan katalizator 5Zn-5%CrF₃*5%CoO*NiO*ZrO₂*Na₂SO₄ ishtirokida propan-butan aralashmasining yuqori haroratli C-C bog'ining uzilishi bilan boradigan parchalanishi natijalari

Jarayon sharoiti:					
Harorat, °C	600	650	700	750	800
Ta'sirlashuv vaqti, s	0.24	0.24	0.24	0.24	0.24
Suv bug'i: reagent (dastlabki modda)	0,4:1	0,4:1	0,4:1	0,4:1	0,4:1
Tajriba natijalari: 1 .Unum, %(mass.) Gaz, shu jumladan.					

H ₂	99,49	99,07	98,75	97,86	96,77
CH ₄	0,04	0,2	0,34	0,97	1,89
C ₂ H ₄	1,64	1,85	3,92	12,51	23,92
C ₃ H ₆	0,5	1,96	7,05	21,2	35,84
∑C ₄ H ₈	0,21	0,38	3,8	13,02	15,67
smola	izlari	0,01	0,125	0,81	1,92
Qurum moddalar	0,4	0,79	0,9	1,63	2,5
2.Unum	0,121	0,124	0,35	0,51	0,73
∑ To‘yinmagan uglevodorodlari C ₂ -C ₄	0,71	2,39	11,14	35,45	54,79
% (mass.)	1,85	4,38	15,84	50,70	83,98
3.Konversiya darajasi, % (mass.)					

2-jadvalda eksperimental tadqiqotlar natijasiga asoslanib keltirilgan ma’lumotlarga ko‘ra, 5%CrF₃*5%CoO*NiO*ZrO₂*Na₂SO₄ ga nisbatan 5Zn-5%CrF₃*5%CoO*NiO*ZrO₂*Na₂SO₄ ning eng yuqori katalitik faolligi 700÷750 °C haroratda kuzatilgan. Shunday qilib, etilen, propilen va C₂-C₄ to‘yinmagan uglevodorodlar umumiy unumining 4,33 - 4,9% , 1,94 - 2,68% (mas.) va 7,34-7,39% mos ravishda oshdi. 600-650 °C va 800 °C haroratida transformatsiyalanmagan 5%CrF₃*5%CoO*NiO*ZrO₂*Na₂SO₄ ishtirokida maqsadli mahsulotlarning unumi yuqori bo‘ldi. 700÷750 °C harorat oralig‘ida 5Zn-5%CrF₃*5%CoO*NiO*ZrO₂*Na₂SO₄ ishtirokida 5%CrF₃*5%CoO*NiO*ZrO₂*Na₂SO₄ natijalari bilan taqqoslaganda, maqsadli mahsulotlar unumining oshishi bilan bir qatorda, konversiya darajasining 10,07 - 14,0% ga oshganligini ta’kidlash kerak. Reaksiya yonaki mahsulotlarining unumi biroz oshdi.

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