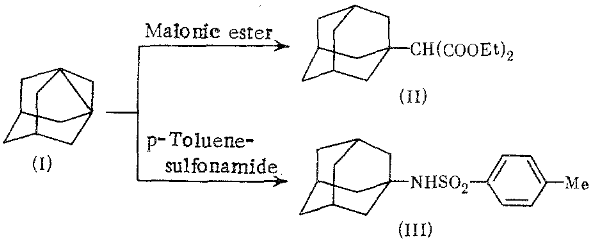
REACTIONS OF 1,3-DEHYDROADAMANTANE ([3.3.1]PROPELLANE) WITH CH- AND NH-ACIDS

B. E. Kogai and V. A. Sokolenko

UDC 542.91 : 547.518

For the first time, for the example of 1,3-dehydroadamantane (I), it was shown that hydrocarbons with a strained structure can react with weak protic acids such as malonic ester (pK*a* 13 in water) and p-toluenesulfonamide (pK*a* 10 in water)



Propellane (I) was heated in excess malonic ester for 6 h at 100°C. The yield of 1-adamantylmalonic ester (II) was 75%, bp 115-116°C (0.15 mm) (see [1]). The PMR spectrum of ester (II) corresponds to the suggested structure.

p-Toluenesulfonamide was boiled with propellane (I) in benzene for 14 h. The yield of (1-adamantyl)-p-toluenesulfonamide (III) was 50%, mp 158-160°C. PMR spectrum (60 MHz, CCl_4, δ, ppm): 7.77 and 7.23 system AA'BB', J_{AB} = 8 Hz (4H, benzene ring): 5.73 br. s (1H, N−H), 2.33 s (3H, CH_3), 1.93, 1.66, and 1.46 three multiplets (3H, 6H, and 6H, adamantane fragment). The elemental analysis corresponds to formula $C_{17}H_{23}NO_2S$.

LITERATURE CITED

1. S. S. Szinai and W. H. W. Lunn, US Pat. No. 3859352 (1973).

Institute of Chemistry and Chemical Technology, Siberian Branch of the Academy of the Sciences of the USSR, Krasnoyarsk. Translated from Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No. 1, p. 222, January, 1982. Original article submitted October 1, 1981.

0568-5230/82/3101-0213$07.50