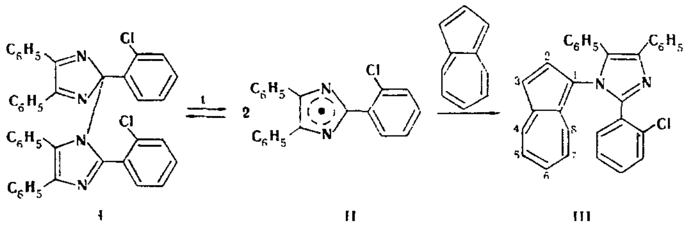
THERMAL REACTION OF BIS[2-(o-CHLOROPHENYL)-4,5-DIPHENYLIMIDAZYL] WITH AZULENE

V. I. Erikhov, Yu. N. Porshnev, and M. I. Cherkashin

UDC 547.785.1

1-(1-Azulenyl)-2-(o-chlorophenyl)-4,5-diphenylimidazole (III) [mp 203-204° (from alcohol) and λ_{max} 580 nm (log ε 2.56) in benzene] is obtained in ~30% yield when equimolar amounts of bis[2-(o-chlorophenyl)-4,5-diphenylimidazyl] (I) and azulene are heated to 200°C without a solvent (3 min). The reaction product was isolated by chromatography (with a column filled with SiO_2) after dissolving the reaction mixture in benzene. We assume radical attack on azulene by the 2-(o-chlorophenyl)-4,5-diphenylimidazolyl radical (II) formed during thermolysis of dimer I.



The absence in the IR spectrum of III of an absorption band at 3450 cm^{-1} proves that the azulenyl residue is attached to the nitrogen atom of the imidazole ring. The signals of the azulene 4-H and 8-H protons lie at 8.05 and 7.87 ppm (doublets, $J_{45} = J_{78} \approx 9$ Hz) in the PMR spectrum, and this constitutes evidence for the asymmetry of the substituted azulene molecule, i.e., for location of the imidazyl radicals in the 1 position of the azulene ring.

Institute of Chemical Physics, Academy of Sciences of the USSR, Moscow. Scientific-Research Institute of Organic Intermediates and Dyes, Moscow. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 7, pp. 1002-1005, July, 1976. Original article submitted December 23, 1975.