

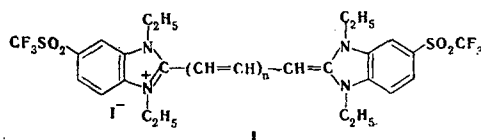
SYNTHESIS OF 1,1',3,3'-TETRAETHYL-5,5'-BIS(TRIFLUOROMETHYLSULFONYL)IMIDATRIBOCYANINE

V. I. Troitskaya and L. M. Yagupol'skii

UDC 547.785.5'221.07+541.651

Imidacarbocyanine with SO_2CF_3 groups in the 5 and 5' positions (I, $n = 1$) proved to be an effective photosensitizer [1]. In the imidacyanine dye series, tricarbocyanines could not be obtained up until now.

We have found that tricarbocyanine I ($n = 3$) is formed if a suspension of 1.8 g of 1-ethyl-5-trifluoromethylsulfonylbenzimidazolium ethiodide, 0.56 g of glutaconic aldehyde anililide hydrochloride, and 0.2 g of triethylamine in 10 ml of pyridine is allowed to stand for 20 days at 20–24° in the dark. Filtration of the mixture gave 0.33 g (74%) of the starting quaternary salt, which was washed with pyridine. The pyridine solution was diluted with water, and the dye was extracted with chloroform. The chloroform solution was washed with water, the chloroform was evaporated to a volume of 5 ml, and hexane was added. The precipitated dye was removed by filtration and washed with hexane and ether. It was crystallized from alcohol and washed with alcohol until the mother liquor became pure blue in color. This procedure gave 0.07 g (16%) of a product with mp 212–213° (dec.). Found, %: F 13.7. $\text{C}_{31}\text{H}_{33}\text{F}_6\text{IN}_4\text{O}_4\text{S}_2$. Calculated, %: F 13.7.



Lengthening of the chromophore of the dye by one $\text{CH}=\text{CH}$ group causes a bathochromic shift of about 100 nm in the absorption maximum (λ_{max} is 519, 622, and 728, respectively, for $n = 1, 2,$ and 3).

LITERATURE CITED

1. I. I. Levkoev, É. B. Lifshits, L. M. Yagupol'skii, and A. V. Borin, USSR Author's Certificate No. 118,091; Byul. Izobr., No. 4, 55 (1959).

Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR, Kiev. Translated from *Khimiya Geterotsiklicheskih Soedinenii*, No. 2, p. 275, February, 1974. Original article submitted August 16, 1973.

© 1975 Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission of the publisher. A copy of this article is available from the publisher for \$15.00.