Soret band into two components was observed in the spectra of the metal complexes, 406 and 419 nm for copper, 410 and 426 nm for zinc, and 405 and 415 nm for nickel complexes. On protonation of porphyrin free bases the spectrum acquired a pattern of the fluorene type. The spectrum of compound (IIb) in chloroform was λ_{max}, nm ($\varepsilon \cdot 10^{-3}$): 421 (240), 480 sh (32.8), 510 (30.6), 546 (12.4), 581 (12.7), 634 (4.8); on adding 1% CF_3COOH, λ_{max}, nm ($\varepsilon \cdot 10^{-3}$): 402 (18.8), 508 (52.3), 770 (10.3).

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SYNTHESIS OF N-HETEROCYCLIC ANALOGUES OF 2,5-DIARYLOXAZOLES

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2-Hetaryl-5-aryloxazoles are efficient luminophores. The method described for the synthesis of 5-phenyl-2-(2-phenyl-4-quinolyl)oxazole (I) is a multistage, laborious technological process which is accompanied by side reactions which lead to the formation of resinous impurities [1]. The need to isolate the intermediate products and free them from these impurities substantially reduces the yield of the luminophore, and adversely affects its luminescence.

We have synthesized (I) and other 2-(4-quinolyl)-5-aryloxazoles by the Robinson–Gabriel reaction [3] in one step, by heating equimolar amounts of cinchoninic or 2-phenylcinchoninic acid with ω-aminoaryl methyl ketones in phosphoryl chloride under nitrogen at 125°C. Since the phosphoryl chloride functions simultaneously as a solvent and a cyclohydrating agent, there is no need to isolate the acid chloride or the amide. The use of an inert gas prevents the formation of resinous products, and increases the yields and quality of the luminophore.

The method is also applicable to the synthesis of other carboxy-substituted nitrogen heterocycles. For example, reaction of isonicotinic acid with ω-aminoacetophenone under these conditions affords 2-(4-pyridyl)-5-phenyloxazole, and reaction of 2,2'-diquinolyl-4-carboxylic acid with ω-aminoacetophenone gives 2-(4-diquinolyl-2,2')-5-phenyloxazole.

5-Phenyl-2-(4-quinolyl)oxazole: yield 59%, mp 134-135°C (from heptane with alumina); λ_{max} (ε) absorption (in ethanol): 235 (30,300), 350 nm (15,900); λ_{max} fluorescence (in ethanol) 430 nm (η 0.52).

5-Phenyl-2-(2-phenyl-4-quinolyl)oxazole: yield 55%, mp 157-158°C (from heptane), as reported in [1].

2-(2-2'-Diquinol-4-yl)-5-phenyloxazole: yield 60%, mp 218-219°C (from benzene–heptane, 1:2); λ_{max} (ε) absorption (in ethanol): 260 (50,000), 330 nm (24,500; λ_{max} fluorescence (in ethanol): 455 nm (η 0.46).

2-(4-Pyridyl)-5-phenyloxazole: yield 65%, mp 97-97.5°C [4].

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