

PHOTO-ARYLATION; SYNTHESIS OF ARYL- AND HETEROARYLPYRIDINES
BY PHOTOLYSIS OF 2-HALOPYRIDINES.

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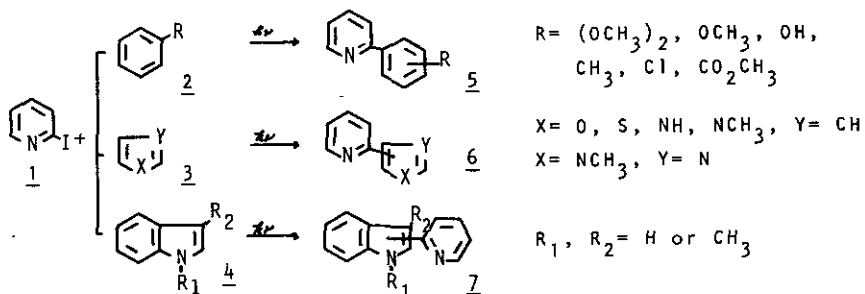
Photolysis of 2, 3, and 4-halopyridines (halogen: Cl, Br, I) in benzene
afforded corresponding phenylpyridines in fair yields.

The reactivities of halopyridines in the reaction were examined and were
found to be depending on halogens, positions of halo-substituent, substrates and
solvents.

Although remarkable changes of the reactivities were observed in chloro-
pyridines rather than in iodo-derivatives, chlorides were found to be less reactive
in general.

Reactivities of 2-iodopyridine (1) found to be electrophilic in character to
some extent, while those of 3-isomer was quite similar to iodobenzene in homolytic
aromatic substitutions, suggesting that 1 might react favorably with electron-rich
substrates.

To investigate the utility of the present reaction, 2-aryl(5) and 2-hetero-
arylpyridines (6, 7) were prepared by the reaction of 1 with substituted benzenes
(2), five membered heterocycles (3) and indoles (4).



In the case of 2-pyrindinylation of indoles, the participation of the electron
transfer mechanism was suggested on the bases of isomer distributions, solvent
effects and fluorescence quenching experiments.