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KINETIC STUDY OF Fe(III) ION
WITH SOME ISONICOTINOYL HYDRAZONES

BY

SOMRUDEE CHETUPHON (B.Sc. in Chem.)

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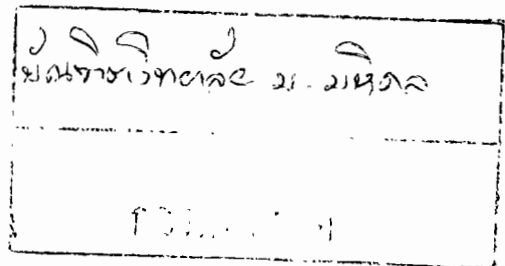
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SUMMARY

Pyridoxal Salicyloyl Hydrazone was synthesized and its pK_a were subsequently determined. They are 4.48 (-OH of pyridoxal ring), 7.45 (ring N) and 9.42 (NH-N) respectively. The kinetics of complex formation between $Fe(H_2O)_6^{3+}$ ion and pyridoxal benzoyl hydrazone and pyridoxal salicyloyl hydrazone in aqueous solution have also been measured by conventional spectrophotometry at 25°C, ionic strength of 0.30 M ($NaNO_3$). The measurement was carried out in acid solution (pH not greater than 2.0) to avoid hydrolysis of the ferric ion. The rate constant for the reaction between Fe^{3+} ion and pyridoxal benzoyl hydrazone is $0.52 \text{ M}^{-1}\text{s}^{-1}$ and for the reaction between FeH^{2+} and pyridoxal benzoyl hydrazone is $54.57 \text{ M}^{-1}\text{s}^{-1}$. Also rate constant for the reaction of Fe^{3+} with pyridoxal salicyloyl hydrazone is $0.55 \text{ M}^{-1}\text{s}^{-1}$ and for the reaction of $FeOH^{2+}$ with pyridoxal salicyloyl hydrazone is $13.64 \text{ M}^{-1}\text{s}^{-1}$. The rate-determining step is proposed to be ring-closure, on the basis of the low values of the rate constants observed.