

C
540
WJJ

**SYNTHESIS AND CHARACTERIZATION OF PHOTOCHROMIC
5-CHLORO-4,6-DIMETHYL-2-HYDROXYBENZALDEHYDE**

A PROJECT REPORT PRESENTED BY

KALANI BUDDIKA WIJewardena

To the Board of Study in Chemical Sciences of the
POSTGRADUATE INSTITUTE OF SCIENCE

*in partial fulfillment of the requirement
for the award of the degree of*

MASTER OF SCIENCE IN ANALYTICAL CHEMISTRY

of the

**UNIVERSITY OF PERADENIYA
SRI LANKA
2005**

590964

**SYNTHESIS AND CHARACTERIZATION OF PHOTOCHROMIC
5-CHLORO-4,6-DIMETHYL-2-HYDROXYBENZALDEHYDE**

K.B. Wijewardena

Department of Chemistry

University of Peradeniya

Peradeniya

Sri Lanka

ABSTRACT

o-Alkyl aromatic aldehydes undergo photochromism through γ -hydrogen abstraction upon UV irradiation in the solid state to give colored enols. The stability of the photo-enols can be increased in the presence of hydrogen bonding. In this research 4-chloro-3,5-xyleneol was used as the starting material to synthesize an *o*-alkyl aromatic aldehyde, which will be photochromic in the solid state with a higher stability. Two methods were carried out to synthesize the above aldehyde. The analytical techniques, NMR, FT-IR, UV-Visible and XRD used to characterize the products revealed that about 20% yield was obtained via the method involving the Reimer Tiemann reaction.