

# **SYNTHESIS AND CHARACTERISATION OF NOVEL ACETALS DERIVED FROM EUCALYPTUS OIL**

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## **ABSTRACT**

Synthetic chemistry aims at the production of novel compounds and to increase the efficiency of synthesis of known compounds. With increased environmental concerns, there has been demand for environmentally-conscious organic synthesis using Green Chemistry principles. This research focuses on using environmentally-friendly compounds to synthesize bio based plasticizers and to incorporate into several formulations. Such a compound derived from a natural source was successfully used in various cosmetic formulations.

The challenge is to synthesize novel compounds and to optimize the synthetic procedures. Key parameters, such as temperature, reaction time and type of catalyst, that influence the acetal synthesis reaction will be identified and investigated during this project. The reaction product is separated and purified by high vacuum distillation and column chromatography. Quantification is by gas chromatography and characterisation is by GC-MS, FT-IR,  $^1\text{H}$  and  $^{13}\text{C}$ -NMR techniques. The research scope includes the development of suitable synthetic techniques for the acetals, their identification and characterisation.