

## STUDY OF THE EFFECT OF ALKYL SUBSTITUTION OF MONOMERS OF POLYESTERS

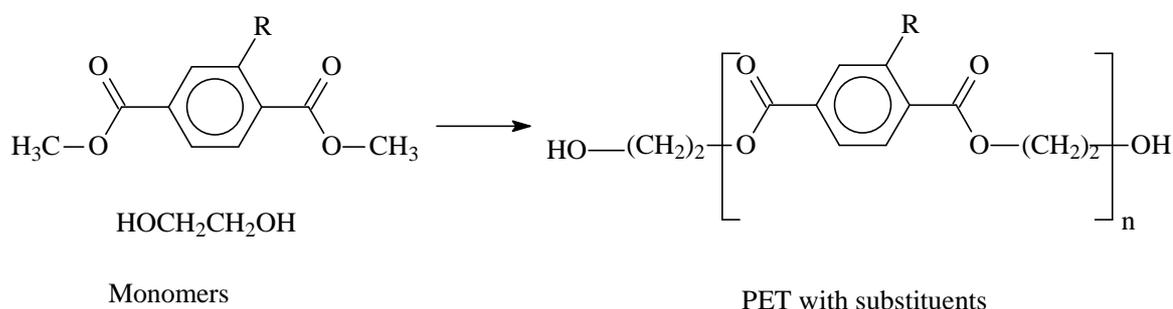
K. Bhengu, D.A. Young, and H.C.M. Vosloo

Catalysis and Synthesis Group, Chemical Resource Beneficiation (CRB) Research Focus Area,  
North-West University, Private Bag X6001, Potchefstroom, 2520, South Africa

E-mail: [23413107@nwu.ac.za](mailto:23413107@nwu.ac.za)

### ABSTRACT

Polyesters are the type of synthetic polymers produced from carboxylic acids and alcohols, joined together by the ester bond. The project's objective is to identify the best synthetic methodology to prepare substituted diacid aryl intermediate. The synthesized monomers are then be polymerized as shown on the reaction scheme below:



R= C1, C2 and C4, or Br

n number of repeat units

The polymers are then characterized using IR. The properties of the synthesized polymers were studied employing selective analytical techniques, namely, TGA, DSC and SEM. Further, they were compared to the polymers without branches in order to establish the effect of substituents on the properties. The new polymers produced will be employed in various industrial processes, namely, fabrics, plastic industry, compact discs manufacturing etc.

### References:

- [1] J. Duan, L.H. Zhang, W.R. Jr. Dolbier, *Synlet journal*, **8**, 1999, 1245-1246.
- [2] Y-H. Zhang, B-F, Shi, J-Q Yu, *Angewandte Chemie*, **48 (38)**, 2010. 6097-6100