

**A COMPARATIVE STUDY OF TRIGONOMETRIC BEZIER
CURVE AND HYBRID TRIGONOMETRIC BEZIER CURVE TO
THE MODELLING OF SYMMETRIC ROTATION SURFACE**

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ABSTRACT

Computer-Aided Design (CAD) and Computer-Aided Geometric Design (CAGD) are widely used to explore design ideas, visualize concepts, and simulate real-world performance. Trigonometric curve and surface modeling are crucial in practical applications, and the sweep surface method is powerful for determining objects in three-dimensional objects. This paper focuses on designing 3-dimensional symmetrical objects, such as bottle designs, which are crucial for showcasing systems and advertising procedures. The design was created using a combination of Trigonometric Bezier and Hybrid Trigonometric Bezier with the Rotational Sweep Surface method. The design of the object explored based on the properties of the curve and analyzed the method based on flexibility, ease of changing the shape, smoothness of the curve, easier manipulation, volume, and total computation of time taken to generate the 3-Dimensional symmetric object. The comparative study was done based on the analysis made it. The result for each method obtained was presented in this report. All two methods applied in this research to get which method would be more suitable for generating 3-Dimensional objects. Displaying a result obtained, compare all the results for each method to observe which generating symmetrical is close to an actual image. Determine which method is the best between the trigonometric Bezier curve and the hybrid trigonometric Bezier curve and close to an actual image and design a variety of bottle shapes that can satisfy the consumers' needs. The result shows that Trigonometric Bezier is the best method compared to Hybrid Trigonometric Bezier.

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TABLE OF CONTENTS

| | Page |
|---|------|
| DECLARATION BY THE SUPERVISOR----- | i |
| DECLARATION BY THE CANDIDATE----- | ii |
| ABSTRACT ----- | iii |
| ACKNOWLEDGEMENT ----- | iv |
| TABLE OF CONTENTS ----- | v |
| LIST OF TABLES ----- | viii |
| LIST OF FIGURES ----- | x |
| INTRODUCTION OF RESEARCH ----- | 1 |
| 1.1 Introduction ----- | 1 |
| 1.2 Background of Study ----- | 1 |
| 1.3 Problem Statement ----- | 5 |
| 1.4 Objectives ----- | 6 |
| 1.5 Significance of the Project ----- | 6 |
| 1.6 Scope of the Project ----- | 6 |
| 1.7 Project Benefits ----- | 7 |
| 1.8 Definition of Terms and Concept ----- | 8 |
| 1.9 Organization of Report ----- | 10 |
| LITERATURE REVIEW ----- | 13 |
| 2.1 Introduction ----- | 13 |
| 2.2 Literature Review ----- | 13 |

| | | |
|------------------------|---|----|
| 2.3 | Conclusion | 17 |
| METHODOLOGY | | 18 |
| 3.1 | Introduction | 18 |
| 3.2 | Research Step | 18 |
| 3.3 | Conclusion | 32 |
| IMPLEMENTATION | | 33 |
| 4.1 | Introduction | 33 |
| 4.2 | Research Data | 33 |
| 4.3 | Computation time (CPU Time) of the 3-Dimensional bottle design based on Trigonometric Bezier and Hybrid Trigonometric Bezier method with different shape parameters. | 41 |
| 4.4 | Curvature and Magnitude Curvature Calculation of the curve of bottle design based on the Trigonometric Bezier and Hybrid Trigonometric Bezier method with different shape parameters. | 43 |
| 4.5 | Volume Calculation of the 3-Dimensional based on Trigonometric Bezier and Hybrid Trigonometric Bezier method with different shape parameters | 46 |
| 4.6 | The form that fails to comply with the desired conditions. | 48 |
| 4.7 | Conclusion | 50 |
| RESULTS AND DISCUSSION | | 51 |
| 5.1 | Introduction | 51 |
| 5.2 | Discussion of the result | 51 |
| 5.3 | Result of Trigonometric Bezier | 52 |