ABSTRACT

Bezier and **B-spline** curves are the most well known models used in curve modeling.

Besides traditional polynomial method of representing curves, polar form representation of polynomial curves method is also being studied and developed by several authors (Ramshaw, 1988, 1989; Goldman, 1990; Seidel, 1989, 1990; Boehm, 1988; To T.V., 1992).

To, T.V. (1992) has introduced a new method to generate new classes of Bezier curves, which are called Bezier-Based curves, by varying arguments of polar form representation of Bezier curves asynchronously. These new obtained classes of Bezier curves have very interesting properties. These properties demonstrate power and efficiency of polar form representation and opened a new approach to deal with curve presentations.

In this research, by applying the To T.V. 's method in dealing with another polynomial curve, B-spline curves, several new classes of B-spline curves, which are called B-spline Based curves, with very interesting and challenging properties have been obtained. A careful study and analysis of properties of obtained B-spline Based curves is also provided sufficiently in this research.