

APPLICATIONS OF HORADAM POLYNOMIALS  
TO GENERAL CLASSES OF BI-UNIVALENT FUNCTIONS  
INVOLVING THE  $q$ -DERIVATIVE OPERATOR

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**Abstract.** In this present investigation, by using the Horadam polynomials, we aim to build a bridge between the theory of geometric functions and that of special functions, which are usually considered very different fields. Thus, we introduce some new classes of bi-univalent functions defined by combining the  $q$ -derivative operator and the Horadam polynomials. Afterwards, we derive coefficient inequalities and consider the classical Fekete-Szegő problem.

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**Key words.** Bi-univalent functions, Fekete-Szegő problem, Horadam polynomials, principle of subordination, recurrence relation.

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