Special Issue Reprint

Polynomials

Edited by: Cheon-Seoung Ryoo

This book presents a comprehensive collection of peer-reviewed articles accepted and published in the Special Issue "Polynomials: Theory and Applications, 2nd Edition" of the MDPI journal *Mathematics*. The volume reflects the central role of polynomial theory in modern mathematical research and its growing impact on science, engineering, and applied disciplines.

The contributions span a wide range of contemporary topics, including modern umbral calculus, Appell and Sheffer polynomial sequences, q-calculus and quantum calculus-based polynomial structures, orthogonal and multiple orthogonal polynomials, matrix and determinant approaches to polynomial systems, fractional calculus, symbolic computation, and analytic number theory. In addition, several papers explore applications of special polynomial sequences and special functions to physics, engineering, statistics, and related scientific fields.

By bringing together both theoretical developments and application-oriented studies, this volume aims to serve as a valuable reference for researchers, graduate students, and practitioners seeking a deeper understanding of recent advances in polynomial theory and its interdisciplinary applications.

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