Record Nr. UNINA9911007467703321 Recent Developments in Fractional Calculus: Theory, Applications, and **Titolo** Numerical Simulations / / edited by Lakhveer Kaur, Pushpendra Kumar Pubbl/distr/stampa Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2025 **ISBN** 3-031-84955-8 Edizione [1st ed. 2025.] 1 online resource (X, 340 p. 82 illus., 69 illus. in color.) Descrizione fisica Collana Studies in Systems, Decision and Control, , 2198-4190; ; 235 Disciplina 629.8312 003 Soggetti Automatic control **Engineering mathematics** Engineering - Data processing System theory Control theory Control and Systems Theory Mathematical and Computational Engineering Applications Systems Theory, Control Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto 1. Recent Advances in The Development of Analytical Solutions of Fractional Bateman Equations -- 2. Fractional-order non-linear nabla difference equation via Hilfer-type operator -- 3. On Fractional Integral Inequalities of Hermite-Hadamard type -- 4. Results on Existence and Controllability of Caputo Fractional Neutral Integro-Differential Equations -- 5. Thermoelastic impacts in a one dimensional problem using space-fractionally ordered andmemory-dependent derivatives. Sommario/riassunto This book discusses recent developments in fractional calculus and fractional differential equations in a very elaborative manner and is of interest to research scholars, academicians and scientists who want to enhance the knowledge in the context of new insights and mathematical ideas in fractional calculus and its emerging applications in various fields. It focuses on strengthening the existing results along with identifying the practical challenges encountered. The purpose of

this collection is to provide comprehension of articles that reflect recent mathematical results as well as some results in applied sciences untouched by the tools and techniques of fractional calculus along with their modelling and computation having applications in diverse arenas.