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Nota di contenuto	Part I: Invited Papers -- Computing in a Simple Reversible and Conservative Cellular Automaton -- Algorithms for Group Cellular Automata -- Revisiting Logic Obfuscation Using Cellular Automata -- Part II: Accepted Papers -- Grade Estimation of Mineral Resources: An Application of Cellular Automata -- Shape Generation using Cellular Automata with Clustering -- Evolution Patterns of Some One-Dimensional Non-uniform Cellular Automata -- Relationship of Two Discrete Dynamical Models: One-dimensional Cellular Automata and Integral Value Transformations -- Emulating Mersenne Twister with Cellular Automata -- Defining Reachability Tree under Adiabatic and Reflexive Boundary Condition Cellular Automata -- First Degree Cellular Automata as Pseudo-random Number Generators -- Asynchronous Cellular Automata as Randomness Enhancer -- Cellular-automata based simulation of dynamic recrystallization and statistical analysis of resulting grain growth -- A new notion of universality in respect of logic gates generation capability of ECAs -- Impact of Genetic Algorithm on Low power QCA Logic Circuit with Regular

Clocking -- Cellular automata based model for finding minimum spanning tree in wireless sensor networks -- A Novel Hash Function based on Hybrid Cellular Automata and Sponge Functions -- Synthesis of Single Length Cycle Two Attractor CA using NSRT Diagram. Suvadip Hazra and Mamata Dalui.

Sommario/riassunto

This book gathers selected research papers presented at the First Asian Symposium on Cellular Automata Technology (ASCAT 2022), organized online by academicians from Kolkata, India, during March 3–5, 2022. The book presents one of the most emergent areas in natural computing, cellular automaton (CA). CA is a paradigm of uniform fine-grained parallel computation which has been explored to understand complex systems by developing its model at the microscopic level. The book discusses many real-life problems in the domain of very large-scale integration (VLSI) design and test, pattern recognition and classification, cryptography, pseudo-random pattern generation, image processing, sensor networks, material science, etc., by using CA.
