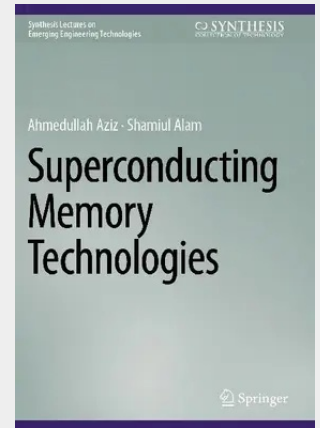


Superconducting Memory Technologies

There is a lot of excitement around quantum computers that use superconducting qubits, which operate at extremely low temperatures since they are ultra-sensitive to noise. These quantum computers need a memory and control processor that can operate under cryogenic conditions. Among the cryogenic memory technologies, superconducting memories are the most efficient and compatible for these purposes. They can help advance quantum computing, facilitate high-performance computing, and explore space more effectively. However, cryogenic memory technologies currently face various challenges.

This book discusses the latest advancements in superconducting memory technologies. It covers four main types of superconducting memories: Josephson junction-based, magnetic Josephson junction-based, superconducting memristor-based, and ferroelectric superconducting quantum interference device-based memories. The book explores the background, working principles, and challenges of each of these technologies, providing a comprehensive overview of the field.

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42,79 €
39,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783031835599
Medium: Buch
ISBN: 978-3-031-83559-9
Verlag: Palgrave Macmillan
Erscheinungstermin: 19.03.2025
Sprache(n): Englisch
Auflage: Erscheinungsjahr 2025
Serie: Synthesis Lectures on Emerging Engineering Technologies
Produktform: Kartoniert
Gewicht: 151 g
Seiten: 68
Format (B x H): 168 x 240 mm

