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Memristors: From Materials to Devices

Memristor Models, Mechanisms, Fabrication Methods, and Applications

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This book is a straightforward guide for researchers, engineers, and technology enthusiasts interested in memristors. It covers the fundamentals of memristors, including what they are and how they work, and explores different materials used in them, like binary oxides, perovskites, and new materials like transition metal dichalcogenides (TMDCs). It also explains how memristors are made using methods like physical vapor deposition (PVD) and electrochemical deposition. The book also shows the different types of memristor devices such as non-volatile, spintronic, ferroelectric, polymeric, and molecular memory devices. The book discusses important things like how well memristors work over time, how consistent they are, and how fast they can switch on and off. It also talks about where memristor technology is headed in the future, beyond what's possible with current computer chips.

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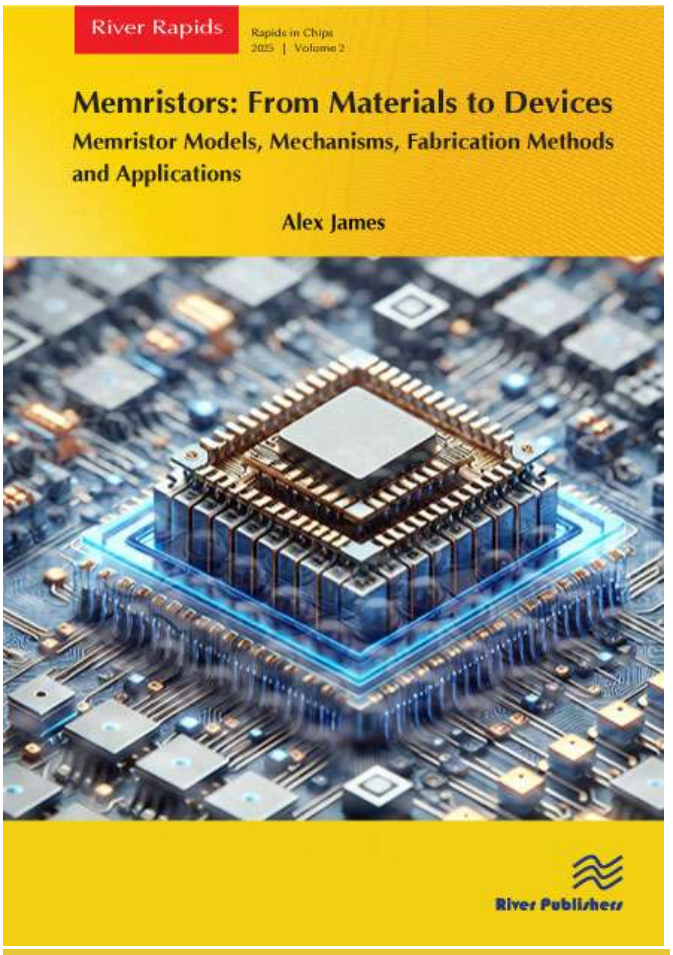

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