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Chapter 4. Future Paths of Innovation; 4.1. 3D integration of charge-storage memories; 4.2. Alternative technologies; 4.2.1. Ferro RAMs; 4.2.2. Magnetic RAMs; 4.2.3. Phase-change RAMs; 4.2.4. Conductive bridging RAMs; 4.2.5. Oxide resistive RAMs; 4.2.6. New crossbar architectures; 4.3. Conclusion; 4.4. References; Chapter 5. Conclusions; 5.1. References; Index

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## Sommario/riassunto

This book provides a comprehensive overview of the different technological approaches currently being studied to fulfill future memory requirements. Two main research paths are identified and discussed. Different "evolutionary paths" based on new materials and new transistor structures are investigated to extend classical floating gate technology to the 32 nm node. "Disruptive paths" are also covered, addressing 22 nm and smaller IC generations. Finally, the main factors at the origin of these phenomena are identified and analyzed, providing pointers on future research activities and developme

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