

The Characterisation of TLC NAND Flash Memory, Leading to a Definable Endurance/Retention Trade-Off

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Abstract : Triple-Level Cell (TLC) NAND Flash memory at, and below, 20nm (nanometer) is still largely unexplored by researchers, and with the ever more commonplace existence of Flash in consumer and enterprise applications there is a need for such gaps in knowledge to be filled. At the time of writing, there was little published data or literature on TLC, and more specifically reliability testing, with a further emphasis on both endurance and retention. This paper will give an introduction to NAND Flash memory, followed by an overview of the relevant current research on the reliability of Flash memory, along with the planned future work which will provide results to help characterise the reliability of TLC memory.

Keywords : endurance, patterns, raw flash, reliability, retention, TLC NAND flash memory, trade-off

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