Reliability Study of Carbon Nanotube Memory after Various Cycling Conditions
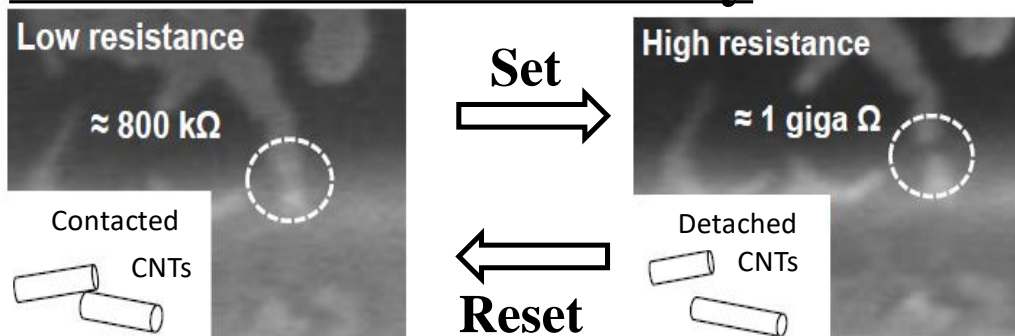
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Carbon Nanotube Memory

Low resistance ≈ 800 kΩ Contacted CNTs

Set →

Reset ←

High resistance ≈ 1 giga Ω Detached CNTs
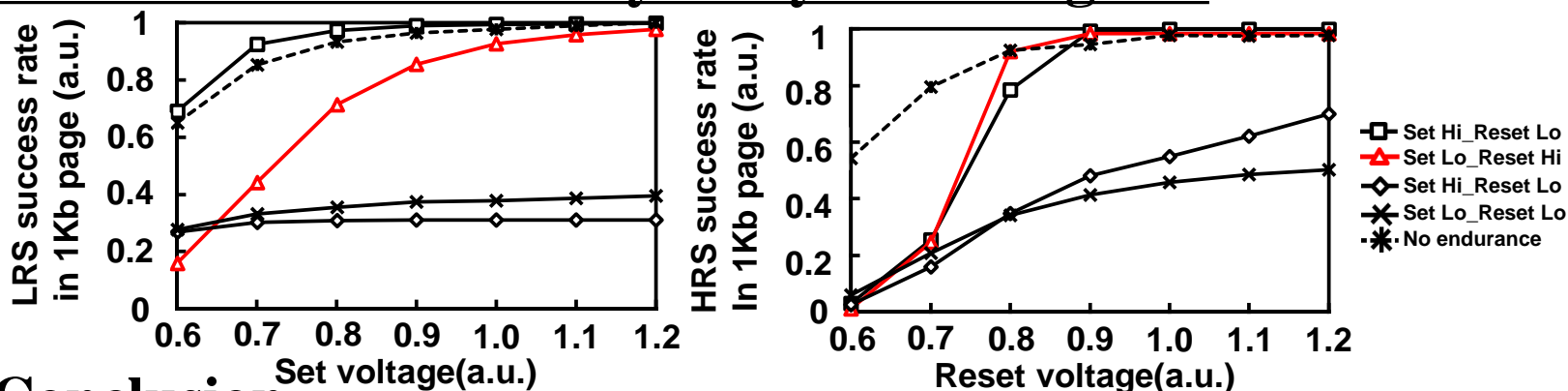
Memory based on carbon nanotubes (CNTs) is a promising candidate for next generation non-volatile memory.

- Low set / reset voltage and current
- Quickly set / reset switching

Data retention of memory array is investigated

Legend:
- Set Hi_Reset Lo
- Set Lo_Reset Hi
- Set Hi_Reset Lo
- Set Lo_Reset Lo
- No endurance

Conclusion

Set Lo_Reset Hi and Set Hi_Reset Hi are favourable cycling conditions to maintain programing characteristics.