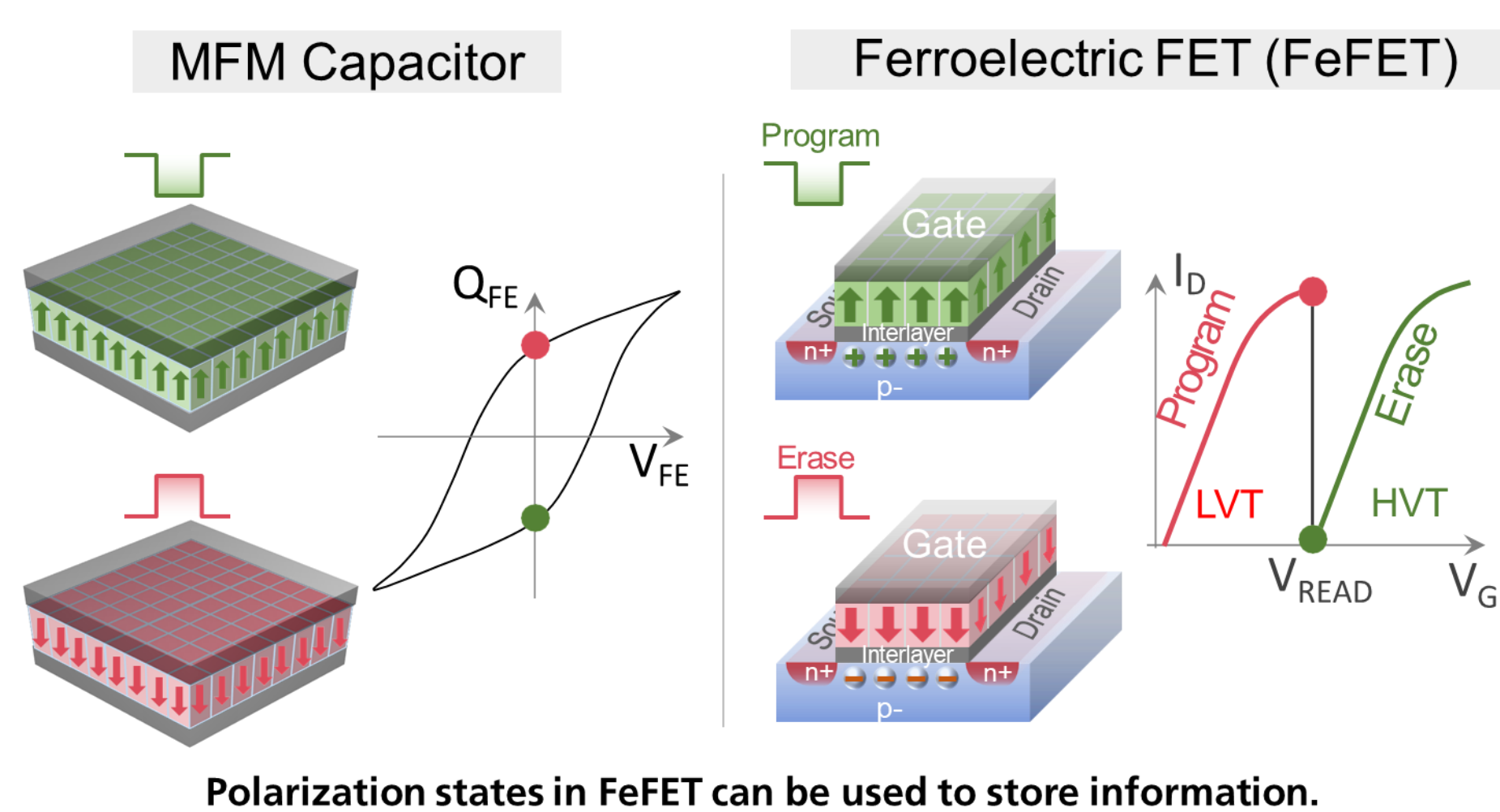


FeFET Compute-In-Memory

Ferroelectric memory technologies for neuromorphic computing

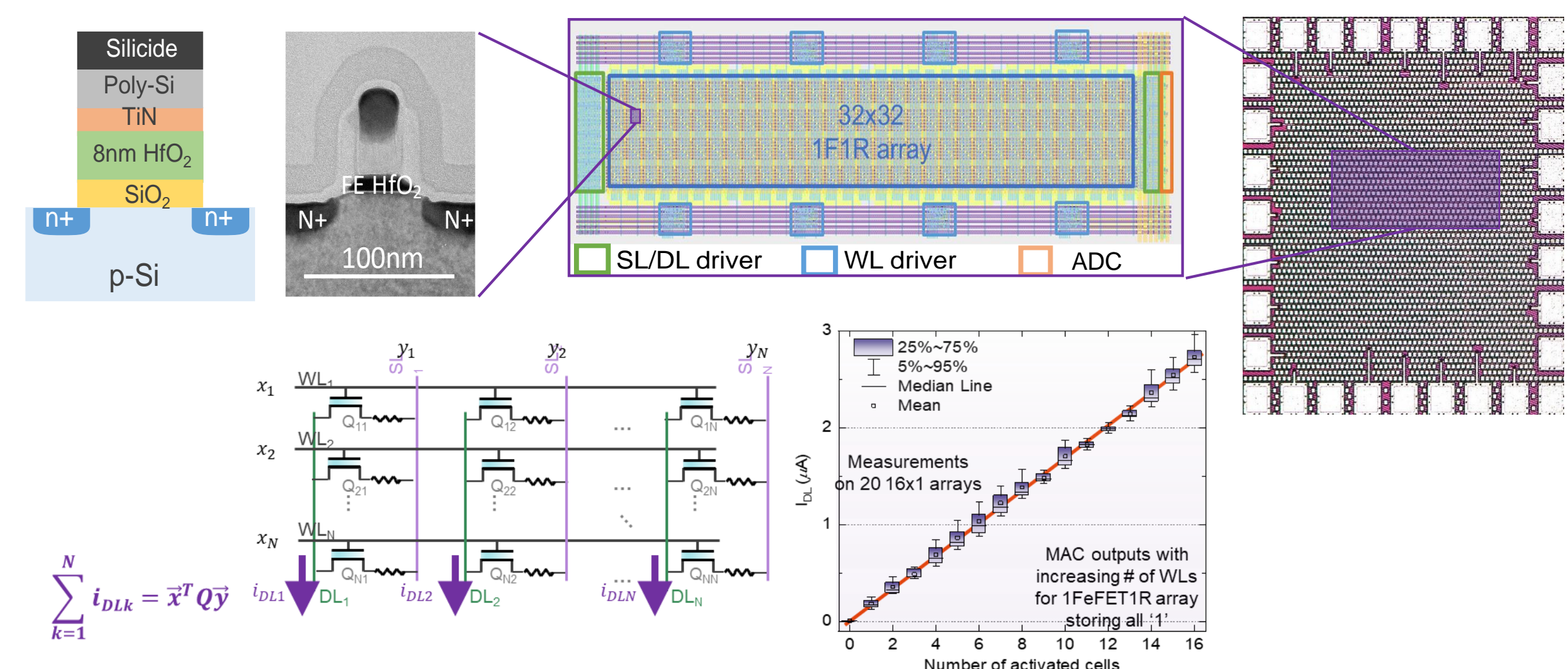
1 Ferroelectric FET (FeFET)

Ferroelectric transistors as memory technology was developed in advanced CMOS technology nodes on 300mm wafers such as 28nm bulk or 22nm FDSOI



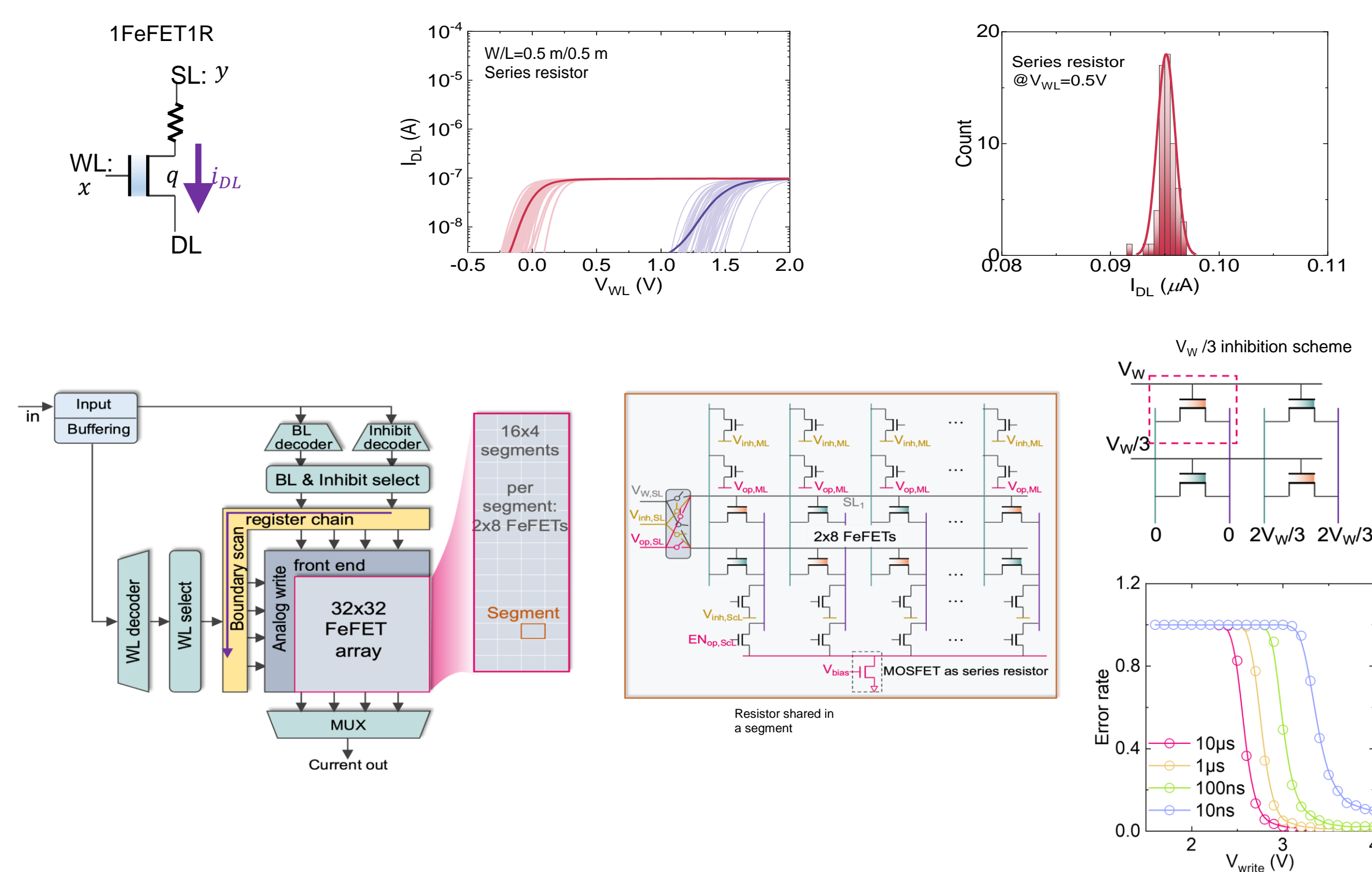
2 Compute-In-Memory (CIM) operations

Compute-In-Memory (CIM) Multiply-Accumulate (MAC) operation was demonstrated using resistive bit cell concept 1F1R with high accuracy based on kb arrays



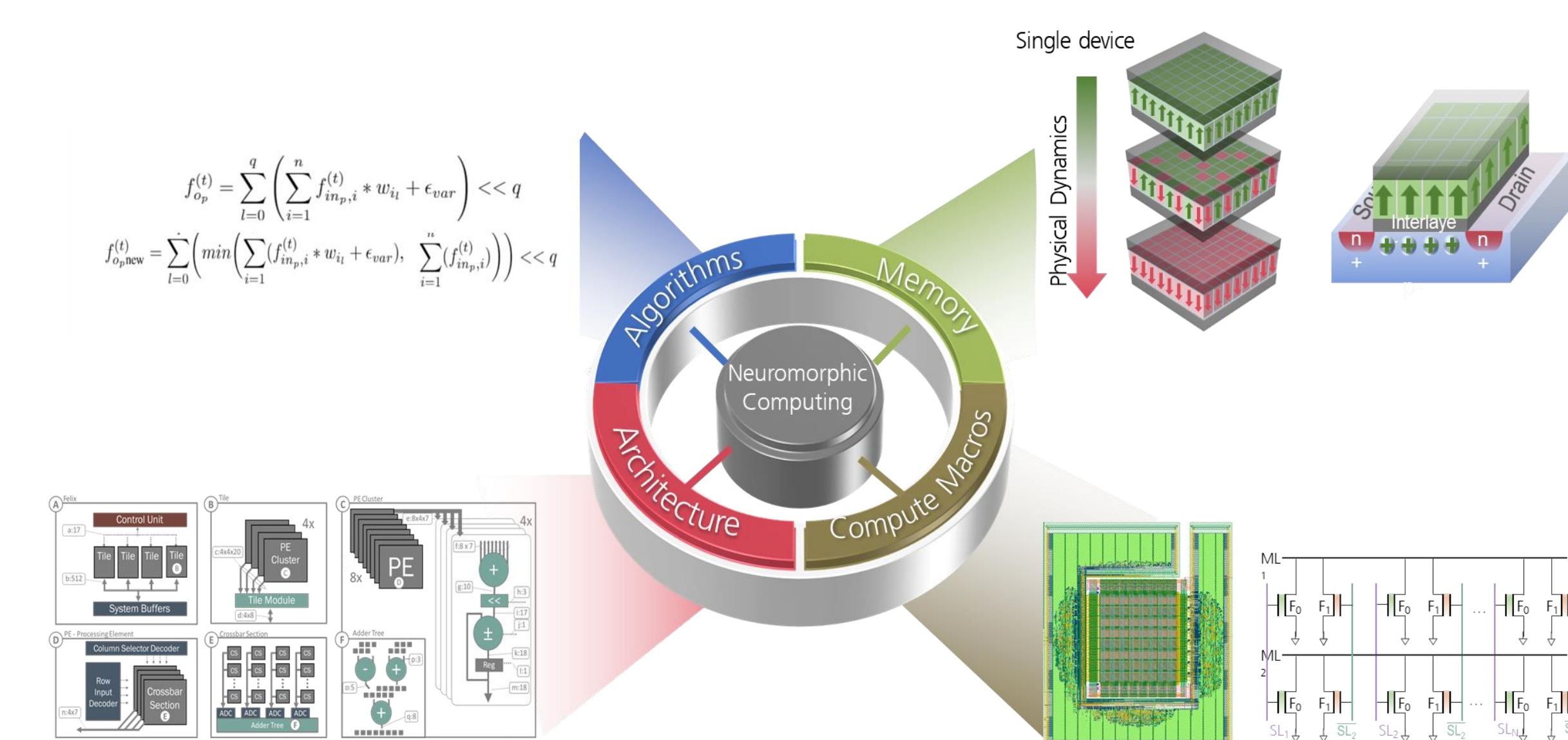
3 CIM Macro Design

CIM macros can be developed, adapted or licensed. The CIM macros contain the relevant peripherals (incl. ADCs and DACs) for multiply-accumulate operations (MAC)



4 HW-SW Codesign for CIM accelerators

We can also offer HW/SW codesign for CIM accelerators considering the full stack from memory technology, CIM macros, architectures to optimized AI algorithms for customer-specific requirements.



5 Neuromorphic computing accelerators

FeFET based CIM accelerators offer ultra-low power operation combined with low latency. It is possible to advise customers and offer developments at the levels of memory technology, macro design, CIM accelerators and the necessary software. CNN, SNN as well as Transformer networks are possible.

FeFET Compute-In-Memory operation can be connected to security features as well as the CIM accelerator can be connected to embedded processors. Regarding the software stack, code can be developed for different networks.



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