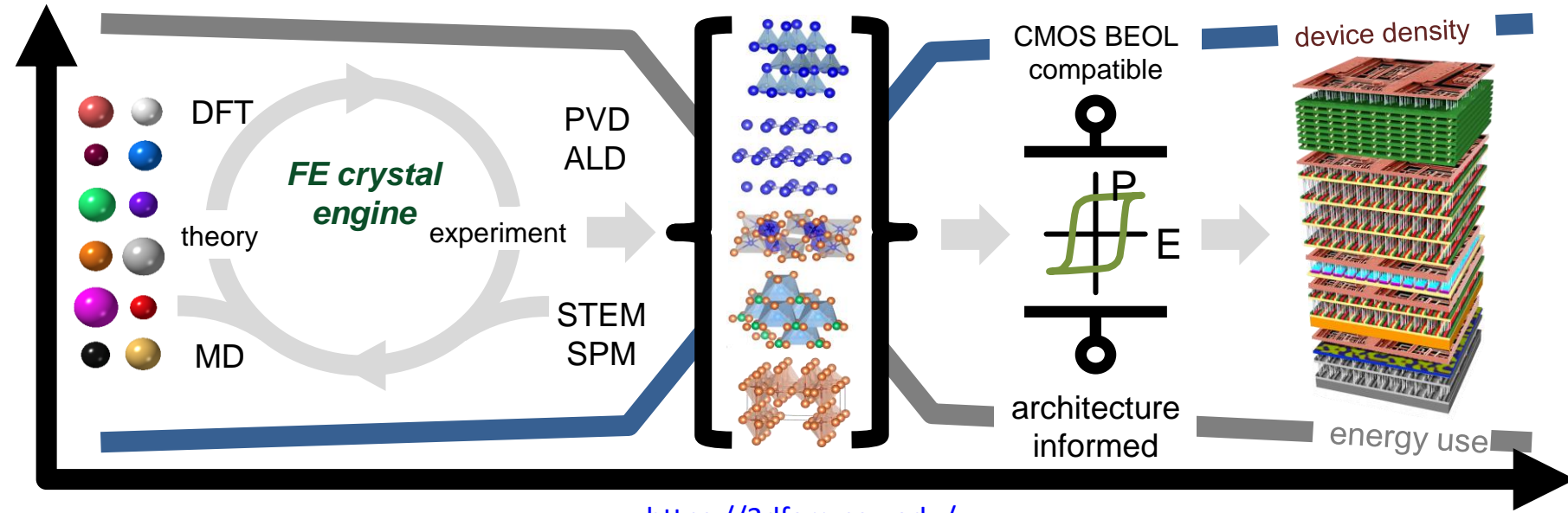


Center for 3D Ferroelectric Microelectronics (3DFeM)

Susan Troler-McKinstry (Penn State); Class: 2020-2024

MISSION: Ferroelectric materials and devices that can be integrated reliably will be co-designed and densely interconnected with logic to enable low-power, 3D non-von Neumann computation.



<https://3dfem.psu.edu/>

Research Plan: 3DFeM will: (i) explore the fundamental mechanisms for emergence of ferroelectricity in new host crystal structures, (ii) tailor the coercive voltages through engineering emergent nanoscale inhomogeneity in scaled ultra-thin films, (iii) understand growth and defect dynamics in ferroelectric materials deposited with ancillary electronics at low temperatures at wafer scale, (iv) characterize materials at previously inaccessible time and length scales, and (v) demonstrate transition from materials synthesis to device functionality.

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