Center for High Precision Patterning Science (CHiPPS)

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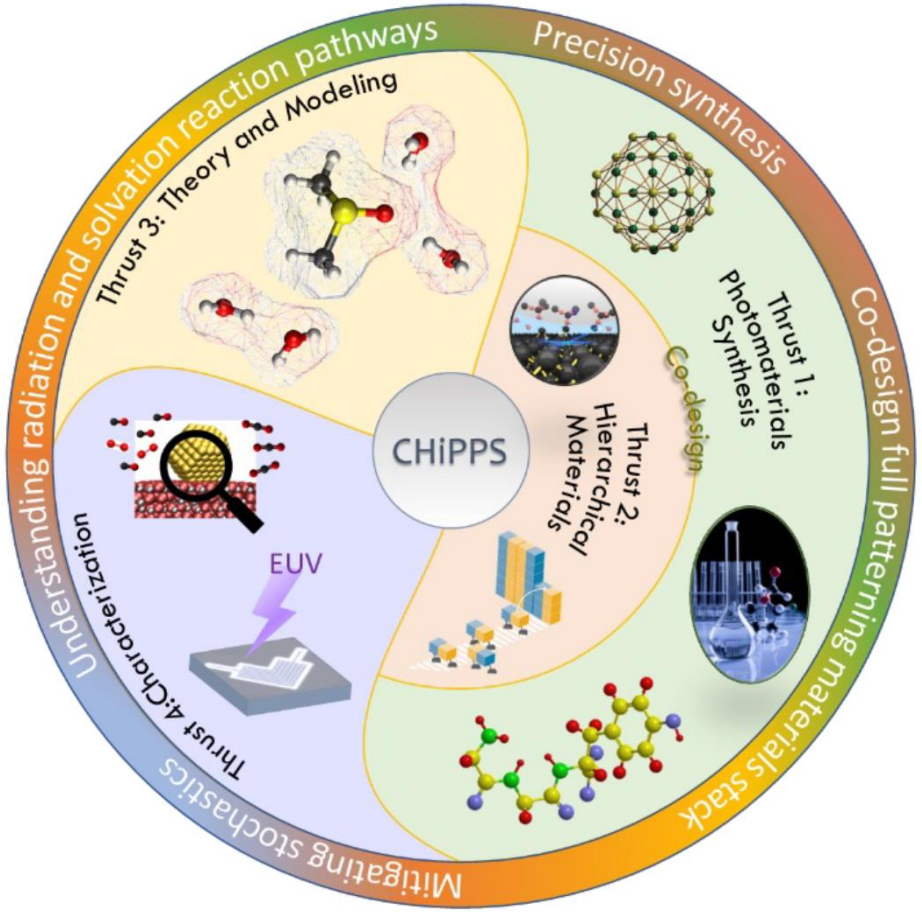
MISSION: To create new fundamental understanding and control of patterning materials and processes for energy-efficient, large-area patterning with atomic precision, thereby enabling at-scale advanced manufacturing of future generation microelectronics such as quantum and spin-based memory, storage, and logic devices.

RESEARCH PLAN: CHiPPS addresses the grand challenges in patterning science by developing a comprehensive understanding of how to efficiently harness high energy photons to perform selective chemical reactions in multifunctional radiation-sensitive materials while mitigating detrimental stochastic variability. This new understanding and control will be achieved through a holistic approach synergistically combining advances in co-designed materials synthesis, processing, self-assembly, data-driven modeling, and advanced characterization in order to realize atomically-precise patterning at the nanoscale.



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