High-temperature, liquid metal plasma-facing component research and development for the NSTX-U

- The NSTX-U has developed a progressive plan for testing liquid metal plasma-facing components
- A novel method for mitigating contamination and introducing lithium into a confinement device is proposed
- Technical feasibility is evaluated in lab-scale tests



A method for mitigating contamination is shown in the schematic above. The sacrificial thin-film of metal protects the lithium during vacuum-vessel bake-out and is removed prior to experiments. Demonstration of contamination mitigation strategies is critical to further development of liquid metal PFCs.