

Abstract Submitted
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Bubble Filtration for Molten Salt Purification¹ KEATON BREWSTER, Abilene Christian University — Large scale clean energy production is one of the most pressing issues of our time. Molten Salt Reactors (MSRs) provide a clear solution with numerous advantages over current reactors. The Nuclear Energy eXperimental Testing (NEXT) collaboration is working towards a Molten Salt Research Test Reactor (MSRTRx) to move this technology forward. MSRs are more efficient, safer, and provide easier access to life saving medical isotopes. An obstacle for MSR technology is maintaining clean salt to reduce corrosion in the system. NEXT is working to study several mechanical filtration methods, including using sintered filters and Helium bubbling. Mechanical filters are essential because they allow us to remove chemically non-reactive particles from the molten salt, which would not be removed through chemical filtration processes, but could collect on pipe walls, causing clogging. Helium bubbling is a process where insoluble contaminants will tend to attach to the surface of the bubble and rise to the surface, creating a foam layer of contaminants. This foam layer can be collected in a side storage container, and removed when convenient. Another benefit of bubble filtration is that it can be a continuous process. Some chemical filtration methods are done in batches and require taking salt

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