PEES Power Systems

Molten salts in extreme environments

Overview

The Molten Salts in Extreme Environments (MSEE) EFRC, a consortium of universities and national laboratories, studies the physical behavior of molten salts on the atomistic level to understand how actinides and fission products are dissolved in molten salt, and how these salt. The Molten Salts in Extreme Environments (MSEE) EFRC, a consortium of universities and national laboratories, studies the physical behavior of molten salts on the atomistic level to understand how actinides and fission products are dissolved in molten salt, and how these salt. Molten Salt Reactors (MSRs) are a potentially game-changing technology that could enable cost-competitive, safe, and more sustainable commercial nuclear power generation. Proposed designs employ molten salts in the temperature range of 500 – 900 ˚C acting as coolants for solid-fueled reactors or in. To provide fundamental and predictive understanding of molten salt bulk and interfacial chemistry that will establish robust principles to guide the technologies needed to deploy molten salt nuclear reactors. INL is studying and solving complex issues associated with advanced energy production and used fuel.

Molten salts in extreme environments

Molten Salts in Extreme Environments , MSEE

The Energy Frontier Research Center for Molten Salts in Extreme Environments (MSEE) seeks fundamental and predictive understanding of the bulk and interfacial chemistry of molten salts in the ...

Funding for New DOE Energy Frontier Research Center at ...

The Brookhaven EFRC, named "Molten Salts in Extreme Environments," will focus on understanding the properties of a class of materials with potential applications in energy ...

Research Overview , MSEE

The center for Molten Salts in Extreme Environments (MSEE) is building a fundamental and predictive understanding of molten salt bulk and interfacial chemistry, including the effects of solutes and ...

Staff, Postdoctoral Research Associates, and Students , MSEE

Performing in-situ studies on interfacial and corrosion processes in molten salts using high temperature electrochemical cells coupled with synchrotron-based multi-modal X-ray techniques.

Are High-Temperature Molten Salts Reactive with Excess Electrons?

New and exciting frontiers for the generation of safe and renewable energy have brought attention to molten inorganic salts of fluorides and chlorides. This is because high-temperature ...

Electrons are Quick-Change Artists in Molten Salts, Chemists Show

The researchers, from the Department of Energy's Oak Ridge National Laboratory and the University of Iowa, computationally simulated the introduction of an excess electron into molten ...

Principal Investigators , MSEE

Studying corrosion at molten salt-metal interfaces in electrochemical environments using synchrotron-based diffraction and spectroscopy methods and performing multi-modal in-situ corrosion studies ...

Molten Salt Research

To better understand how molten salts change in high-temperature environments, like a nuclear reactor, INL researchers are developing ...

Researchers team up to get a clearer picture of molten ...

Molten salts, or salt melts, remain liquid across a range of temperatures and offer stable thermal and conductive properties for some of the ...

Molten Salts in Extreme Environments (MSEE)

To provide fundamental and predictive understanding of molten salt bulk and interfacial chemistry that will establish

robust principles to guide the technologies needed to deploy molten salt nuclear reactors.

Focusing Down to an Atomic View of Molten Salts in ...

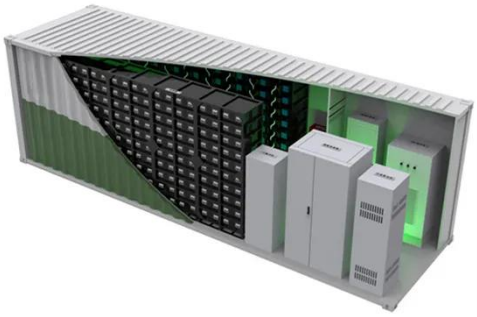
With some experiments having conflicting design requirements and some salts having melting temperatures upward of 800?, it is imperative that researchers ...

Research Structure , MSEE

The focus of Thrust 2 is to understand how molten salts interact with and modify interfaces across length- and time-scales and under multiple extreme environments including temperature, mixed ...

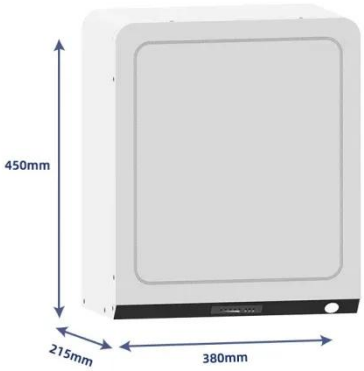
Energy Research Challenges , MSEE

Understanding the bulk and interfacial structure of molten salts is an integral part of our research.



BNL , Staff , James F. Wishart, Chemistry Division

Our team consists of six institutions that excel in X-ray and neutron science, in working with actinides, in working under extreme conditions, and performing computer simulations of molten salts and their ...

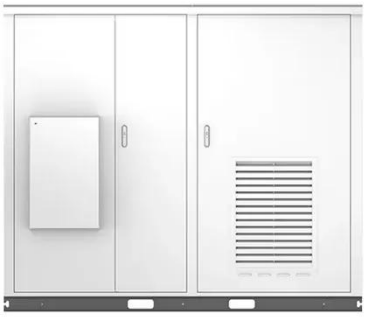


Radiation-Driven Chemistry in Molten Salts

To provide fundamental and predictive understanding, based in atomistic/molecular level descriptions, of molten salt bulk and interfacial chemistry, including the effects of solutes, impurities and radiation.

Molten Salts , SNU Nuclear Fuel Cycle & Nonproliferation Lab

However, molten salts operating under extreme environments (500-800?, strong corrosivity, intense radiation) complicate material selection, sensor durability, and in-situ chemical monitoring, directly ...



DOE Energy Frontier Research Center on Molten Salts Renewed for ...

UPTON, NY--The U.S. Department of Energy's (DOE) Office of Science announced renewed funding for an Energy Frontier Research Center (EFRC) led by DOE's Brookhaven National ...

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