

# MOLTEN SALT REACTOR CAMPAIGN ANNUAL REVIEW

APRIL 22-24, 2025

ALL TIMES ARE PACIFIC DAYLIGHT TIME (PDT)



TUESDAY, APRIL 22, 2024			
7:00 AM	8:00 AM	Registration	Samantha Gregory
8:00 AM	8:15 AM	Welcome to PNNL	Jud Virden/ALD/PNNL
8:15 AM	8:30 AM	Opening Remarks from NE-5	Janelle Eddins
8:30 AM	9:00 AM	Overview of the MSR Campaign	Patricia Paviet
THERMOPHYSICAL AND THERMOCHEMICAL PROPERTIES OF SALT			
9:00 AM	9:25 AM	Thermochemical and Thermophysical Properties Database Development	Tony Birri/ORNL
09:25 AM	9:50 AM	Modeling Molten Salt Thermophysical Properties	Vanda Glezakou/ORNL
9:50 AM	10:15 AM	Fluid inclusions in chloride and fluoride salts-characterization and mitigation	Kyle Makovsky & Ji-Hye Seo/PNNL
10:15 AM	10:40 AM	Measurement Uncertainty and the Effect of Impurities on Molten Salt Properties	Levi Gardner/ANL
10:40 AM	11:15 AM	NETWORKING – Innovations and Capabilities for MSR	Matt Wrosch & Chris Suszczynski/MilliporeSigma
11:15 AM	11: 40 AM	Machine Learning Prediction and Molecular Dynamics Modeling of Thermophysical Properties of Molten Salts	Manh Thuong Nguyen/PNNL
11:40 AM	12:05 PM	Experimental Support to MSTDB Development	Marisa Monreal/LANL
12:05 PM	12:30 PM	Generation of Molten Salt Thermochemical Properties and Database Development	Ted Besmann/USC
12:30 PM	1:30 PM	WORKING LUNCH - Overview of the Nuclear Sciences Division at PNNL	Ali Zbib/ GL and subsector manager/ PNNL
1:30 PM	1:55 PM	Initial investigations of a chloride irradiated fuel salt capsule	Toni Karlsson/INL
1:55 PM	2:20 PM	Update Cl-35/Cl-37 and Vapor Pressure Development at PNNL	Bruce McNamara/PNNL
MATERIALS			
2:20 PM	2:45 PM	Overview of Materials Interaction with Molten Salts	Meimei Li/ NTD/ANL
2:45 PM	3:10 PM	Graphite and Salt Interaction	Nidia Gallego/ORNL
3:10 PM	3:35 PM	Preliminary R&D of Beryllium Carbide as a Future MSR Moderator	Anne Campbell/ORNL
3:35 PM	3:45 PM	Break	
MODELING & SIMULATION			
3:45 PM	4:10 PM	Technology-Based Licensing -MSR Species Tracking	Mauricio Tano Retamales/INL
4:10 PM	4:35 PM	Technology Based Licensing - Mechanistic Source Term Development	Matthew Christian/SNL
4:35 PM	5:35 PM	Closed Session – Preparation of FY 2026	Staff funded by MSR campaign

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WEDNESDAY, APRIL 23, 2025			
8:00 AM	8:05 AM	Welcome Back	Patricia
OFF GAS MANAGEMENT			
8:05 AM	8:20 AM	Overview of the Technology Development and Demonstration	Joanna McFarlane/ORNL
8:20 AM	8:45 AM	Salt Loop and Capability for Testing Sensors and Off Gas Components	Kevin Robb/ORNL
8:45 AM	9:10 AM	Bubble behavior in molten salts relevant to MSRs	Daniel Orea/ORNL
9:10 AM	9:35 AM	Actinide Salt Loop and Sensors Development at ANL	Nora Shaheen/ANL
9:35 AM	10:00 AM	On-line Monitoring for MSR Off-Gas Treatment: Molecular approach	Heather Felmy/PNNL
10:00 AM	10:30 AM	NETWORKING – MSR and the Fuel Cycle	Melissa Rose/ANL
10:30 AM	10:55 AM	Laser Induced Breakdown Spectroscopy (LIBS) for element monitoring of MSR off-gas streams	Hunter Andrews/ORNL
10:55 AM	11:20 AM	Update on Radiation Exposure Measurements of Metal Organic Framework at PNNL	Praveen Thallapally & Mark Murphy/PNNL
11:20 AM	11:45 AM	Experiment and Modeling Liquid Salt Test Loop LSTL	Kyoung Lee/Bob Salko /ORNL
11:45 AM	12:10 PM	Tritium Transport	Thomas Fuerst/INL
12:10 PM	12:35 PM	Argonne Engineering Scale Salt Accident Analysis Facility	Sara Thomas/ANL
12:35 PM	1:30 PM	WORKING LUNCH - MSRE Mosard Database	Askin Yigitoglu/ORNL
SAFETY/INTERNATIONAL/REGULATORY			
1:30 PM	2:00 PM	MSR Safety and International Involvement	David Holcomb/INL
2:00 PM	2:25 PM	Regulatory Framework Modernization support for MSR deployment	Scott Ferrara/INL
UNIVERSITIES PRESENTATION			
2:25 PM	2:50 PM	Flowing salt loop for the MIT Reactor, TRISO safeguards and Irradiated Graphite Disposal	Charles Forsberg/MIT
2:50 PM	3:15 PM	IRP- Bridging the gap between experiments and modeling to improve the design of molten salt reactors	Max Fratoni/UC Berkeley
3:15 PM	3:45 PM	Overview of the molten salt research at UC Berkeley	Raluca Scarlat/UC Berkeley
OTHER DOE RESEARCH PROJECT			
3:45 PM	4:15 PM	Invited Presentation – Molten Salt in Extreme Environment Energy Frontier Research Center	Jim Wishart/BNL
4:15 PM	4:30 PM	Conclusions	Janelle Eddins/Patricia Paviet
4:30 PM	5:30 PM	Closed Session – Preparation FY 2026	Staff funded by MSR campaign

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THURSDAY, APRIL 24, 2025			
8:00 AM	Noon	Tours of Molten Salt Research at RPL and LSL2*	PNNL coordination team

\*Participation is limited to the first 30 registrants and US citizenship is required.