Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Advanced Instrumentation for Molten Salt Flow Measurements at NEXT. OLIVE TUYISHIMIRE[1], Abilene Christian University — The Nuclear Energy eXperiment Testing (NEXT) Lab at Abilene Christian University is building a Molten Salt Loop to help advance the technology of molten salt reactors (MSR). NEXT Lab's aim is to be part of the solution for the world's top challenges by providing safe, clean, and inexpensive energy, clean water and medical Isotopes. Measuring the flow rate of the molten salt in the loop is essential to the operation of a MSR. Unfortunately, there is no flow meter that can operate in the high temperature and corrosive environment of a molten salt. The ultrasonic transit time method is proposed as one way to measure the flow rate of high temperature fluids. Ultrasonic flow meter uses transducers that send and receive acoustic waves and convert them into electrical signals. Initial work presented here focuses on the setup of ultrasonic transducers. This presentation is the characterization of the pipe-fluid system with water as a baseline for future work.

[1]Thank you!

Olive Tuyishimire
Abilene Christian University

Date submitted: 02 Aug 2017 Electronic form version 1.4