

**RERTR 2017 – 38<sup>th</sup> INTERNATIONAL MEETING ON  
REDUCED ENRICHMENT FOR RESEARCH AND TEST REACTORS**

**NOVEMBER 12-15, 2017**

**EMBASSY SUITES CHICAGO DOWNTOWN MAGNIFICENT MILE HOTEL**

**CHICAGO, ILLINOIS USA**

**MiniPlate – 2 (MP–2) Experiment Conceptual Design for Irradiation in  
the Advanced Test Reactor**

I. Glagolenko, G. Housley, D. Choe, M. Marshall, D. Crawford, G. Hawkes, J. Wiest,  
N. Meacham.

Idaho National Laboratory, 2525 N Fremont Ave, Idaho Falls, Idaho 83415, USA

**ABSTRACT**

MiniPlate – 2 (MP-2) test is the next in the series of the miniplate experiments aimed at providing fuel performance data for qualification of the LEU U-10Mo monolithic fuel for conversion of the research and test reactors in the US. The team of engineers at Idaho National Laboratory (INL) is working on the conceptual design of MP-2 to ensure that the test meets reactor safety and programmatic requirements. Several unique (limiting) miniplate geometries, representative of the actual large size plates in reactor fuel elements, were selected for testing. These miniplates will be tested at multiple irradiation conditions up to limiting, and including sufficient margin. Several important fuel performance parameters will be generated as a function of irradiation conditions. Replication of the fuel specimens will provide statistical confidence in the fuel performance data. Details of the MP-2 conceptual design will be discussed.