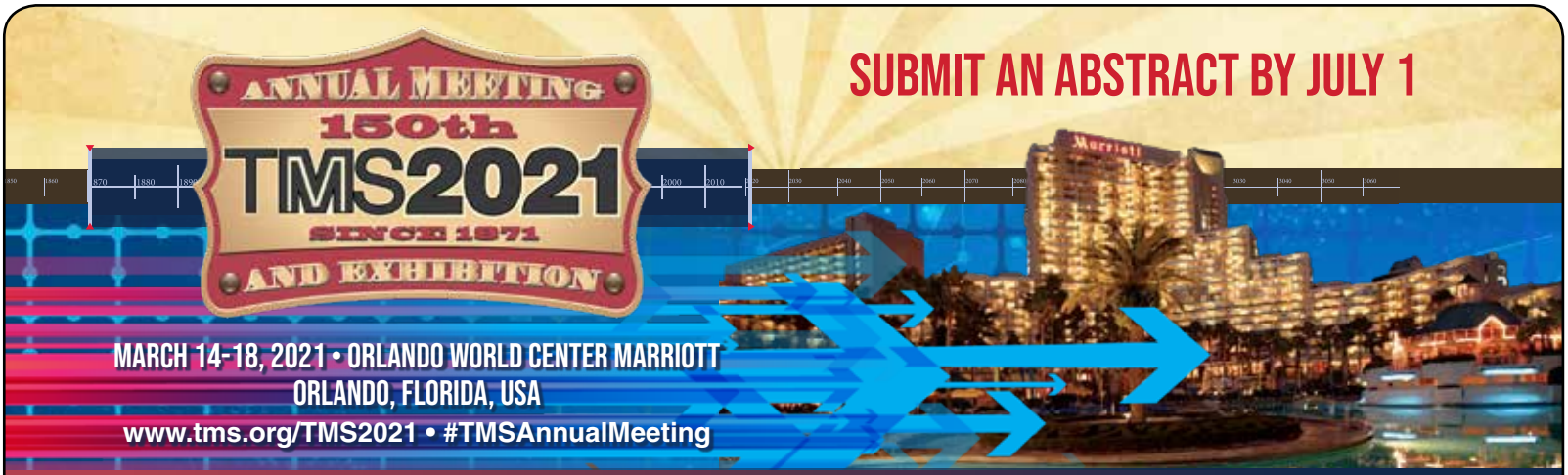

SUBMIT AN ABSTRACT TO:

CORROSION

CORROSION IN HEAVY LIQUID METALS FOR ENERGY SYSTEMS

Heavy liquid metals (HLMs) such as molten Pb and lead bismuth eutectic (LBE) are being proposed as heat transport fluids in advanced nuclear and concentrated solar power systems due to their low vapor pressure, excellent thermophysical (high boiling point and thermal conductivity) and neutronic properties, and thermal energy storage potential. Furthermore, liquid metals such as Zn, Sn and its alloys are used in other industry applications such as automotive and next generation of semiconductors (e.g. extreme ultraviolet lithography). Due to interest in this technology for a variety of industrial applications, a symposium on heavy liquid metals (HLMs) including Pb, Bi, Zn, Sn, Sb, LBE and their compatibility with structural or functional materials is proposed. While the main focus is on materials issues such as corrosion and liquid/solid metal embrittlement, it is also essential to cover technological aspects of the use of liquid metals including chemistry control methods, filtering, in situ characterization techniques, forced and natural convection methods, and flow rate measurements. Furthermore, we intend to provide a platform to highlight recent advances in electrochemical measurements in liquid metals such as Electrical Impedance Spectroscopy (EIS) or similar techniques.

Abstracts are solicited in the following topics:

- HLM compatibility with structural materials including corrosion, erosion, and embrittlement - Solidification of HLM materials
- Active HLM chemistry control and measurement techniques
- Advanced numerical techniques for modeling coolant chemistry in liquid metals
- Innovative instrumentation including flow rate and temperature measurements
- In situ characterization including mechanical properties, corrosion, electrochemical methods, and spectroscopy methods
- Integrated HLM experimentation including simultaneous effects of temperature, flow, impurities, radiation, and/or strain of materials exposed to HLMs
- Radioisotope retention in molten Pb/LBE
- HLM compatibility with non-metals (e.g. nuclear fuel, MAX phase materials, CerMets)- Joining and welding of components exposed to HLMs

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SYMPOSIUM SPONSORS

TMS Structural Materials Division
TMS Corrosion and Environmental Effects Committee
TMS Nuclear Materials Committee

Abstract Deadline is July 1, 2020. Submit online at www.programmaster.org/TMS2021.

Questions?
Contact programming@tms.org