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#### **SESSION 4: WELDING AND COATING, SALON E**

Co-Chairs: Jun Qu, Oak Ridge National Laboratory; Yongping Lei, China Nuclear Power Design Company; Peng He, Harbin Institute of Technology; Yunlong Chang, Shenyang University of Technology

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## **Thermal simulation study on welding heat affected zone of oil tank steel**

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### **ABSTRACT**

The test was conducted in the Gleeble3500 thermal simulation test machine with different T8/5, respectively, for Ti- and Mg-treated oil tank experimental steel; the microstructures and properties of heated affected zone (HAZ) were analyzed; the results found that the impacted toughness of two experimental steel HAZ decreased with welding heat input increase, but the HAZ performance of Mg-treated steel is better than that of Ti-treated steel in high welding heat input, with the welding heat input increase, the size of martensite–austenite (M–A) component increases in HAZ for Ti-treated steel, the size of M–A in HAZ also increases for Mg-treated steel, but the area percentage of M–A tends to constant after a rapid decline.