

Abstract Submitted  
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**Plasma-Wall Interactions in TCSU with New First-Wall Materials**  
A. TANKUT, K.E. MILLER, G.C. VLASES, University of Washington, Redmond Plasma Physics Laboratory — Surface analysis studies carried out during the first two years of operation of the Translation, Confinement, and Sustainment Upgrade (TCSU) Experiment proved to be valuable in understanding some of the fundamental processes that occur at the first wall. With the recent modifications in the system including the insertion of Ta/Al flux conserving rings to minimize plasma-wall contact, placement of Ta shields at the scrape-off layer strike points, and an emphasis placed on Ti-gettering, new materials science related phenomena are expected. To study these effects, surface analysis samples representing the various plasma-facing surfaces are being placed in TCSU. This study will present some of the initial observations from the recently modified TCSU first wall. The effect of plasma discharges and wall-conditioning techniques on the plasma-facing surfaces will be discussed in relation to our previous studies.

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