Abstract Submitted
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Plasma-Facing Component and Materials Testing for the NSTX-U[1] MICHAEL JAWORSKI, A BROOKS, S GERHARDT, D LOESSER, M MARDENFELD, J MENARD, PPPL, T GRAY, M REINKE, ORNL — The NSTX-U Recovery Project is developing plasma-facing components for use in the divertor of NSTX-U. The extreme conditions of the NSTX-U divertor make it possible to stress even graphite surfaces to the material limits leading to the possibility of component failures. In addition, the complex, mixed-material environment of the NSTX-U due to the use of boron and lithium wall conditioning techniques creates significant uncertainties in the monitoring of the PFCs. A testing program has been developed to inform on the material and design limitations of the NSTX-U high-heat flux components. These tests include high-heat flux testing in electron beam facilities as well as plasma-based testing. The NSTX-U components could experience perpendicular heat fluxes as high as 45 MW/m$ˆ2$. Parallel heat fluxes onto leading edges could reach 475 MW/m$ˆ2$. The testing program and material survey plan will be presented.

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