

Abstract Submitted
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NSTX Facility/Research Status and Plans¹ MASAYUKI ONO, Princeton University, AND THE NSTX TEAM — The NSTX team completed the FY 2008 run with a record number of plasma discharges with newly implemented facility and diagnostic capabilities. The dual lithium evaporator (LITER) system was introduced to provide complete toroidal coverage of the lower divertor with a solid lithium film which produced improved plasma confinement and ELM-free discharges. LITER together with EF/RWM feedback control system led to record pulse length / high performance discharges on NSTX. The 75 ch PCHERS and Fast Ion D-alpha diagnostic systems were also successfully commissioned. For the 2009 run, a liquid-lithium divertor target to achieve lower collisionality, the HHFW antenna upgrade to double its power handling capability, and a BES diagnostic to extend the localized turbulence measurements and an MSE-LIF system for Er and B measurements will be introduced. For longer term upgrades, a new center stack to enable ~ 1 T, 2 MA, and 5 s operation is planned along with a second NBI for providing current profile control. These upgrades will enable NSTX to study fully non-inductive operations over much expanded plasma parameter space with lower collisionality and higher plasma temperature needed for the next-step STs.

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