

**Abstract Submitted for the Forty-Ninth Annual Meeting
Division of Plasma Physics
November 12–16, 2007, Orlando, Florida**

Category Number and Subject:

Theory Experiment

High Performance Operation on DIII-D With Reduced Frequency of Wall Conditioning,* W.P. West, N.H. Brooks, A.W. Hyatt, G.L. Jackson, C.M. Greenfield, P.A. Politzer, M.R. Wade, *General Atomics*, M. Groth, *LLNL* – Recent DIII-D experiments have demonstrated the capability to obtain high performance plasmas, ($\beta_N H_{\text{ITER89}}/q_{95}^2 \sim 0.38$), in both hybrid and steady-state scenarios over an extended operations period (6000 plasma seconds) with no intervening boronization or bakes. Over the same period, impurity influx monitored with daily reference shots remains at low levels. With adequate divertor pumping, good hybrid performance can also be maintained in several sequential discharges with no between-shot helium glow. These findings on DIII-D, which has >95% graphite plasma facing wall, are in sharp contrast to recent studies on tokamaks with high-Z metallic walls, where frequent boronizations are found necessary to prevent radiative collapse of high-confinement, high-beta discharges [1,2].

[1] B. Lipschultz, *et al.*, *Phys. Plasma* **13**, 056117 (2006).

[2] R. Neu, *et al.*, *J. Nucl. Mater.* **363-365**, 52 (2007).

*Supported by the US DOE under DE-FC02-04ER54698 and W-7405-ENG-48.