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Ohmic Confinement Studies in the Pegasus Toroidal Experiment[1] K.E. THOME, J.L. BARR, M.W. BONGARD, M.G. BURKE, A.S. DOWD, R.J. FONCK, A.J. REDD, D.J. SCHLOSSBERG, University of Wisconsin-Madison — A key process in enhancing energy and effective particle confinement and plasma performance in tokamak discharges is particle recycling. PEGASUS discharges indicate that a low-recycling regime is obtained through the use of titanium gettering and cryogenic pumping. The energy confinement and effective particle confinement times, τ_e and τ_p^*, respectively, are determined using: magnetic diagnostics to perform equilibrium reconstructions, a 32-channel AXUV bolometer diode array to measure P_{RAD}, and a heterodyne Michelson microwave interferometer to measure $\bar{n}_e$. A fast wide-angle view D-α camera observes and measures recycling. Motivated by earlier results that indicate a decrease in τ_p^* with decreased wall pumping, systematic studies of confinement and wall conditioning are in progress. Measurements of the instantaneous density decay rate after the termination of the external gas supply during an established Ohmic discharge with low-MHD activity indicate $2 < \tau_p^* < 5$ ms. Scans of $\bar{n}_e$ with and without titanium gettering in stable Ohmic discharges are used to study τ_e, τ_p^*, and recycling on PEGASUS.

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