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**Improvement in Uniformity of Linear Inductively Coupled Plasma for Large Area Processing** S.M. CHOI, S.H. LEE, J.K. LEE, Pohang University of Science and Technology, S.Korea, K.N. KIM, G.Y. YEOM, Sungkyunkwan University, Korea — The external planar ICP sources with low pressure high density plasma have limited scale-up capabilities due to its high impedance accompanied with the large antenna size. The novel internal-type linear inductive antenna system (1020mm830mm437mm) is investigated to improve both the plasma density and the uniformity of LAPS for FPD processing. Until now, we have observed the characteristics of LAPS under various conditions to overcome the problems stated above. The total length of antenna is comparable to the driving rf wavelength to cause the plasma non-uniformity and so the uniformity is improved by reducing the standing wave effect. We will show the effects of various antenna shapes and permanent magnet that reduce standing wave effect, electron loss to chamber wall and finally the effects of the parallel resonance antenna that controls the current at each segment of antenna with a variable capacitor. To describe the discharge phenomenon we have utilized a magnetized two-dimensional fluid simulation. [References] 1. S.E.Park, B.U.Cho, Y.J.Lee, and G.Y.Yeom, and J.K.Lee, "The Characteristics of Large Area Processing Plasmas," IEEE Trans. Plasma Sci., Vol.31, No.4(2003) 2. K.N.Kim, S.J.Jung, Y.J.Lee, and G.Y.Yeom, S.H.Lee and J.K.Lee, "Low-impedance internal linear inductive antenna for large-area flat panel display plasma processing," J. Appl. Phys. 97, 063302(2005)

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