

Abstract Submitted
for the GEC09 Meeting of
The American Physical Society

Properties of a differentially pumped constricted hollow electrode plasma source¹ SHANTANU KARKARI, National Center for Plasma Science and Technology, Dublin City University, Collins Avenue, Dublin 9, Ireland, MUBARAK MUJAWAR, National Center for Plasma Science and Technology, Dublin City University, Dublin 9, Ireland — The neutral beam injection heating system for ITER requires uniform, high density hydrogen plasma source for the negative hydrogen ion production at 0.3 Pa. In this paper we present a pulsed-dc discharge using a differentially pumped constricted hollow electrode acting as anode and distributed parallel plates acting as cathode. Preliminary investigation shows higher discharge current and lower sustenance voltage by reducing the effective area of the constricted anode. The plasma outside the parallel plates is found to be highly uniform. The electron temperature between the parallel plates is higher than in the bulk plasma which is suitable for the production of negative ions.

¹This project is funded by the Enterprise Ireland grant TD/07/335 and EURATOM Association DCU Fusion grant FU07-CT-2007-00052.

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Date submitted: 22 Jun 2009

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