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The role of caesium in negative hydrogen ion sources for fusion

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Abstrakt prednášky v anglickom jazyku

One system for providing heating and current drive in the international fusion experiment ITER is Neutral Beam Injection (NBI) based on negative hydrogen ion sources. Negative hydrogen ions are mainly created by conversion of hydrogen atoms at a surface with a low work function, which is achieved by Cs adsorption.

In this talk, the mechanism and related challenges of Cs application in a moderate vacuum and in plasma environment are described. Modelling and experimental investigations are carried out at Max-Planck-Institute for Plasma Physics (IPP, Garching, Germany) towards the optimization of the sources of the NBI for ITER and the next generation, the DEMOnstration power plant within the EUROfusion framework.